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\* The courses of different categories are sorted in ascending sequence of the course code.

**Course Coding Principle of Shanghai Polytechnic University**

(Revised in 2015)

Course code shows the main feature and property of courses. The science of coding implies not only the management level of a school, but also the reasonableness of its course system. To optimize the course system under the complete credit management system of our school, the course coding principle is revised based on the arguments on specialty construction and revision of student cultivation plans.

1. The composition and meaning of the codes
   1. The composition of the course code

The course code is an 8-digit number, including the information like course level, course category, course provision department, course serial number and others.

1st digit

2nd digit

3rd digit

4th digit

7th digit

8th digit

5th digit

6th digit

Course level course category course provision department course serial number

(Diagram of the course code)

* 1. Meaning of course code
     1. Coding of course level

Course level represents the difficulty of the course in the area of subject expertise, including the undergraduate program level, vocational program level and so on.

* + 1. Coding of course category

The courses are divided into general education course, specialty course, practice session, common selective course and others.

* + 1. Coding of course provision department

The course provision department of each course shall be determined, which is responsible for the instruction of the course.

* + 1. Coding of the course serial number

The course serial number shall be sorted in ascending sequence continuously without dead number.

1. Explanation of the different digits of the code

|  |  |  |  |
| --- | --- | --- | --- |
| Digit | Meaning | Content | Code |
| 1st digit | Course level | Undergraduate program | b |
| Vocational program | g |
| 2nd digit | Course category | Common selective course | 0 |
| General education course | 1 |
| Specialty course | 2 |
| Practice session | 4 |
| 3rd-4th digit | Course provision department | College of Engineering | 01 |
| College of Arts and Sciences | 02 |
| School of Economics and Management | 03 |
| School of Applied Arts Design | 04 |
| School of International Exchange | 05 |
| College of International Vocational Education | 06 |
| Department of Physical Education | 07 |
| Department of Ideology and Politics Education | 08 |
| Engineering Training Center | 09 |
| 5th-8th digit | Course serial number | Serial number of courses of common course level, course category and course provision department | Starting from 0001 |

1. Course naming rules

The course coding shall comply with the principle of exclusiveness. Different course provision departments shall make their own rule on the course naming. Courses with same names and different credits, course hour, testing methods or instructional requirements shall be deemed as different courses with different course code.

Courses completed in more than 1 semesters, shall be marked with I,II, Ⅲ and others at the end of the code.

The common selective course has only one course provision department, which is in charge of the course management.

This coding principle shall be put into trial use for the students entering the school since 2015.

Academic Affairs Office

March of 2015

**General Education Courses**

1. Category of ideology and politics education

2. Category of college English

3. Category of mathematics, physics and chemistry sciences

4. Category of Chinese language

5. Category of basic engineering training

6. Category of military skills and PE

**Basic Theory of Marxism (3 credits)**

**Course code:** b1080001

**Suitable majors:** all

**Instructor:** Xiao Chunyan, Zhang Tongqing and Yu Xiajing

**Brief introduction:**

Basic Theory of Marxism is the core course of ideological and political course system in universities, which is a compulsory course for all majors. The course contents are made up of three parts: Marxism philosophy, political economics and scientific socialism. The purpose of this course is to help students master the basic theories of Marxism, have the scientific world view, correct life view and values with the systematic Marxism theoretical education, learn to observe and analyze problems with the world view or methodology of Marxism, improve their ability to analyze and solve practical problems with Marxism theories, stick to the faith of constructing the socialism with Chinese characteristics and adhere to the basic theories, paths and strategies of the communist party.

**Reference book:**

Basic Theory of Marxism, textbook editing group of Basic Theory of Marxism, Higher Education Press

**Outline of Modern Chinese History (2 credits)**

**Course code:** b1080002

**Majors:** all

**Instructor:** Shang Wei, Zhang Jing

**Brief introduction:**

Outline of Modern Chinese History is one of the four compulsory common ideological and political theoretical courses for undergraduates in accordance with *Views on Improvement of University’s Ideological and Political Theoretical Courses* and its implementation plan published by Publicity Department of the Communist Party of China and Educational Ministry. The course contents include the history when Chinese people fight the invasion for independence, overthrow the reactionary rule and free the Chinese people, trying to help the students know the history and status of the country and deeply understand why the history and Chinese people choose Marxism, communist party of China and the path to socialism.

**Reference book:**

Outline of Modern Chinese History (revised in 2013), textbook editing group of Outline of Modern Chinese History, Higher Education Press

**Moral Cultivation and Basic Legal Knowledge (3 credits)**

**Course code:** b1080003

**Major:** all

**Instructor:** Wang Shihua, Limin, Yue Hongqun, Ji Jibai

**Brief introduction:**

This course starting from the practical problems concerned with contemporary undergraduates, sticks to the education on the correct life view, values, moral view and legal views, through theoretical study and practical experiences, helps the undergraduates hold a grand ideality and faith, adhere to the patriotism spirit, cultivate their excellent moral and legal quality, and improve their critical and self-learning ability, laying a solid basis for moral cultivation and basic legal knowledge learning.

**Reference book:**

Moral Cultivation and Basic Legal Knowledge (revised in 2013), textbook editing group of Moral Cultivation and Basic Legal Knowledge, Higher Education Press

**Introduction to the Thought of Mao Zedong and Theories of Socialism with Chinese Characteristics I and II (6 credits)**

**Course code:** b1080004-5

**Suitable majors:** all

**Instructor:** Zhu Shubin, Cui Manming, Mao Tianhong and others

**Brief introduction:**

This course is a compulsory common basic theoretical course for university students to master Deng Xiaoping theory and the scientific system or spiritual essence of “Three Representatives” important thoughts. The main contents of this course include the theoretical achievements of Marxism chinization, like Mao Zedong Thought, Deng Xiaoping Theory and “Three Representatives” important thought. Through the systematic ideological education of the above theories, this course tries to bring the theories of socialism with Chinese characteristics into the textbooks, classrooms and the ideology of the university students, help the students master the scientific system and basic views of the theories of socialism with Chinese characteristics and instruct the students to discover and analyze problems with the Marxism world views or methodology.

**Reference book:**

Introduction to the Thought of Mao Zedong and Theories of Socialism with Chinese Characteristics (revised in 2013), the textbook editing group of Introduction to the Thought of Mao Zedong and Theories of Socialism with Chinese Characteristics, Higher Education Press

**General English I-Ⅳ (4 credits, 3 credits, 3 credits, 3 credits)**

**Course code:** b10200001-4

**Suitable majors:** all

**Instructor:** Wu Xiaoling, Wu Zhen and others

**Brief introduction:**

General English is a compulsory common basic course, with the purpose to cultivate students’ comprehensive practical ability of the English language and help them meet the listening, speaking, reading, writing and translation requirements of *University English Course Instructions* made by Educational Ministry through the strengthening of listening and speaking training based on the excellent reading ability. The course pays attention to the cultivation and improvement of the characteristic English learning and the students’ self-learning ability of the language. The detailed instructive contents include: 1. the comprehensive instruction of English, with the purpose to cultivate the reading and writing ability of the students; the students are required to understand difficult English articles and master basic writing and translation ability. 2. The listening and speaking instruction of English, with the purpose to improve the listening and speaking ability of the students. The students are required to do daily conversations and lay a solid language base for the academic English course or explorative language course in the future.

**Reference book:**

Comprehensive Instruction Textbook of College English (for students) (2nd edition);

Listening and Speaking Instruction Textbook of College English (for students) (2nd edition);

Study Manual of College English (Comprehensive Instruction) 2.3.4 (2nd edition);

Li Yinhua; Yu Sumei; Zhang Caihua; Sun Yuefen and others, Shanghai Foreign Language Education Press

**General Academic English A (2 credits)**

**Course code:** b1020005

**Suitable major:** all (higher requirements)

**Instructor:** Li Shuang, Xia Yiwen, Wang Yin and others

**Brief introduction:**

This course is a compulsory common basic course provided by the Foreign Language School for the undergraduates who are not majored in English. The main task of the course is to cultivate the students’ excellent academic English communication ability of listening, speaking, reading and writing. The students are required to directly study or work in English with excellent international communication ability in their professional areas. Besides the improvements of academic communication ability and academic literacy, this course tries to cultivate the students’ humanity literacy and improve their multi-cultural communication, cooperation and international competition ability, meeting the social and economic development of Shanghai and the country. Through study, the students shall meet the general requirements suggested in *Reference Framework of Shanghai College English Instruction (Pilot Edition)* and have the excellent humanity literacy, multi-cultural communication ability and practical professional English ability.

**Reference book:**

Self-edited textbook

**Prerequisite course:** General English Ⅲ and General English Ⅳ

**General Academic English B (2 credits)**

**Course code:** b1020006

**Suitable majors:** all (general requirements)

**Instructor:** Li Shuang, Xia Yiwen, Wang Yin and others

**Brief introduction:**

This course is a compulsory common basic course provided by the Foreign Language School for the undergraduates who are not majored in English. The main task of the course is to cultivate the students’ excellent academic English communication ability of listening, speaking, reading and writing. The students are required to directly study or work in English with excellent international communication ability in their professional areas. Besides the improvements of academic communication ability and academic literacy, this course tries to cultivate the students’ humanity literacy and improve their multi-cultural communication, cooperation and international competition ability, meeting the social and economic development of Shanghai and the country. Through study, the students shall meet the general requirements suggested in *Reference Framework of Shanghai College English Instruction (Pilot Edition)* and have the excellent humanity literacy, multi-cultural communication ability and practical professional English ability.

**Reference book:**

Self-edited textbook

**Prerequisite course:** General English II and General English Ⅲ

**Calculus A1, A2 (8 credits)**

**Course code:** b1020007-8

**Suitable majors:** all majors of College of Engineering

**Instructors:** Shi Hanming, Shen Guozeng, Zhang Shaoyi and others

**Brief introduction:**

This course is a compulsory common basic theoretical course for the students of scientific or engineering majors. On one hand, this course provides necessary mathematic basic knowledge for the following mathematic course or specialty courses, laying a necessary mathematical basis for the basic specialty courses like General Physics, Basic Electrical Engineering, Engineering Mechanics and others; on the other hand, this course is to further improve the mathematic literacy of the students. This course tries to cultivate the abstract thinking ability, problem-summary ability, logical reasoning ability, space imaginary ability and self-study ability, especially the computing ability and the ability to analyze and solve practical problems with knowledge. The main contents of this course include limit theory, calculus and its applications, vector algebra and space analytical geometry, calculus equation and others.

**Reference book:**

Advanced Mathematics, Mathematical Department of Tongji University, Higher Education Press

**Calculus B1, B2 (6 credits)**

**Course code:** b1020009-10

**Suitable majors:** School of Economics and Management

**Instructors:** Liu Lili, Dou Wenqin, Wang Weixiang and others

**Brief introduction:**

This course is an important basic theoretical mathematical course for economic and management majors. Through this course, the students are required to systematically master the basic knowledge, theory and computing techniques, the abstract summary ability, logical reasoning ability, space imaginary ability, self-study ability and the ability to analyze and solve the practical economic problems with the knowledge. The course lays necessary mathematical basis for the following courses and further acquisition of mathematical knowledge. The contents include the limit and continuity of function, derivative and calculus, derivative application, indefinite integral, definite integral, multivariate function calculus, progression, calculus equation and other basic concepts, theories or applications.

**Reference book:**

Calculus I and II, Wu Hanchang, China Renmin University Press

**Calculus C (4 credits)**

**Course code:** b1020011

**Suitable majors:** College of Arts and Sciences, School of Applied Arts Design

**Instructors:** Zhang Qian, Fan Jing

**Brief introduction:**

This course is an important basic theoretical mathematical course for humanity and industrial design majors. Through this course, the students are required to systematically master the basic knowledge, theory and computing techniques and the abstract summary ability, logical reasoning ability, space imaginary ability, self-study ability and the ability to analyze and solve the practical economic problems with the knowledge. The course lays necessary mathematical basis for the following courses and further acquisition of mathematical knowledge. The contents include the limit and continuity of function, derivative and calculus, derivative application, indefinite integral, definite integral and other basic concepts, theories or applications.

**Reference book:**

Calculus I, Wu Hanchang, China Renmin University Press

**Linear Algebra (2 credits)**

**Course code:** b1020012

**Suitable majors**: all

**Instructor:** Fan Jing, Xu Ling, Dou Wenqin and others

**Brief introduction:**

Linear Algebra is a basic theoretical mathematical course, a specialty for the research on limited dimensional space linear theory, with strong abstractness, logicality and extensive applications. Through this course, the students are required to master the theories and methods of this course, have the proficient computing ability, some logical reasoning ability, abstract thinking ability and the ability to solve the practical problems, so as to lay necessary mathematical basis for the following courses or further extension of the mathematical knowledge. The main contents of this course include: the concept, property and computing of determinants and matrix, the concept, computing and relativity of n-dimensional vector, basic theory and solutions of linear equation group, basic application of linear algebra and others.

**Reference book:**

Linear Algebra, Wu Hanchang, China Renmin University Press

**Prerequisite:** Calculus

**Probability and Mathematical Statistics (2 credits)**

**Course code:** b1020013

**Suitable majors:** all

**Instructor:** Zhan Xiaolin, Zhang Yihao, Sun Weiping and others

**Brief introduction:**

Probability is a mathematical discipline to research on random phenomenon and statistical regularities, while the statistics is a discipline to research on how to effectively collect and analyze the data affected randomly and make statistical presumption or decision. Through this course, the students are required to master the basic concepts, theories and basic computing abilities of random events and its probability, random variables and its distribution, multi-dimensional random variables and its distributions, digital characteristics of random variables, statistics, parameter estimation and hypothesis test.

**Reference book:**

Probability and Mathematical Statistics, Wu Hanchang, China Renmin University Press

**Prerequisite:** Calculus

**Dispersed Mathematics (2 credits)**

**Course code**: b1020022

**Suitable majors:** all

**Instructor:** Fang Hong and others

**Brief introduction:**

This course is an important specialty basic course for the major of computer science, which is also a discipline to research on the structure and interrelations of dispersed quantity. This course gives a systematic and comprehensive explanation on all kinds of mathematical problems in the area of computer science and provides effective theoretical basis or tools for the research in the area of computer science and related disciplines. It is also an important branch of modern mathematics, a core course of basic theories in computer science. The course lays a necessary theoretical basis for the following specialty courses for the students majored in computer science and cultivates their abstract thinking ability, logical reasoning ability and deliberate summary ability.

**Reference book:**

Basis of Dispersed Math, Hong Fan, Huazhong University of Science and Technology Press

**Function of Complex Variable and Integral Transformation (2 credits)**

**Course code:** b1020023

**Suitable major:** all

**Instructor:** Xia Zhengwei, Gao Meina, Shao Wenting and others

**Brief introduction:**

Function of Complex Variable and Integral Transformation is a specialty basic course for science and engineering majors. Through this course, the students are required to master the basic theories and methods of function of complex variable and Fourier Transform and Laplace Transform, providing necessary basis for the following specialty courses and the practical application. The main contents of the course include: 1. Plural and function of complex variable, the concept of function of complex variable and all kinds of computing of plurals; 2. Analytic function, The concept of analytic functions, the sufficient and necessary conditions of judging of analytic function, concept and analyticity of elementary function; 3. Integral of function of complex variable all kinds of integrals of function of complex variable; the relationship between analytic function and harmonic function; 4. Progression Taylor’s formula of circular analytic functions and Laurent’s formula of circular analytic functions; 5. Residue, the concept and computing of residue.

**Reference book:**

Function of Complex Variable, Integral Transformation, Instructional Research Group of Higher Math of Xi’an Jiaotong University, Zhang Yuanlin of Mathematical Science Department of Southeast University, Higher Education Press

**Prerequisite:** Calculus

**College Physics I (3 credits)**

**Course code:** b1020014

**Suitable majors:** majors of College of Engineering

**Instructor:** Zhan Meiqiong, Wang Yu, Lv Fuhe, Jia Youhua, Xu Zhihua, Xu Chengnian, Yu Bin, Gao Yong, Teng Qin and others

**Brief introduction:**

Physics is a science researching on the structure and movement rules of materials, the composition and interrelationship of materials. College Physics is an important general education basic course for science and engineering majors of “Predominant Engineer” project. Through this course, the students are required to master the scientific logical thinking methods and scientific spirits contained in the physics knowledge, deeply understand the meaning of physics rules, and progressively improve their scientific literacy like experimental techniques, their ability to analyze and solve the problems through strict trainings.

**Reference book:**

New Basic Physics (2nd edition) I and II, Wang Shaojie, Gu Mu, Wu Tiangang, Science Press

**Prerequisite:** Calculus A

**College Physics II (A) (2 credits)**

**Course code:** b1020015

**Suitable majors:** College of Engineering—Intelligence School

**Instructor:** Zhan Meiqiong, Wang Yu, Lv Fuhe, Jia Youhua, Xu Zhihua, Xu Chengnian, Yu Bin, Gao Yong, Teng Qing and others

**Brief introduction:**

College Physics II (A) focuses on the magnetism and emphasizes the contents of geostatics, capacitance and inductance. The instruction of this course stresses physical methods and application of physical theories in engineering technologies, laying a good basis for the following courses of intelligent manufacturing majors.

**Reference book:**

New Basic Physics (2nd edition) I and II, Wang Shaojie, Gu Mu, Wu Tiangang, Science Press

**Prerequisite:** Calculus A, College Physics I

**College Physics II (B) (2 credits)**

**Course code:** b1020024

**Suitable majors:** College of Engineering—Intelligence School

**Instructor:** Zhan Meiqiong, Wang Yu, Lv Fuhe, Jia Youhua, Xu Zhihua, Xu Chengnian, Yu Bin, Gao Yong, Teng Qing and others

**Brief introduction:**

College Physics II (B) focuses on the contents of modern physics, including magnetism, relativity theory and quantum mechanics and emphasizes the contents of geostatics, capacitance and inductance. The instruction of this course stresses physical methods and application of physical theories in engineering technologies, laying a good basis for the following courses of computer majors.

**Reference book:**

New Basic Physics (2nd edition) I and II, Wang Shaojie, Gu Mu, Wu Tiangang, Science Press

**Prerequisite:** Calculus A, College Physics I

**College Physics II (C) (2 credits)**

**Course code:** b1020025

**Suitable majors:** College of Engineering—Intelligent School

**Instructor:** Zhan Meiqiong, Wang Yu, Lv Fuhe, Jia Youhua, Xu Zhihua, Xu Chengnian, Yu Bin, Gao Yong, Teng Qing and others

**Brief introduction:**

College Physics II (C) focuses on magnetism, thermodynamics and other contents. The instruction of this course stresses physical methods and application of physical theories in engineering technologies, laying a good basis for the following courses of environmental materials majors.

**Reference book:**

New Basic Physics (2nd edition) I and II, Wang Shaojie, Gu Mu, Wu Tiangang, Science Press

**Prerequisite:** Calculus A, College Physics I

**College Physical Experiment (2 credits)**

**Course code:** b1020016

**Suitable major:** College of Engineering

**Instructor:** Fei Yeming, Wu Zhongling, Qi Yanwu

**Brief introduction:**

Physical Experiment is an important basic course for the undergraduates majored in science or engineering. In order to make good achievements in physics, the students shall pay attention to the combination of theory and practice. However, the main tasks of the physical experiments in college are to cultivate and train the students to master the experimental theories, techniques, scientific and research ability systematically, instead of proving the physical theory.

**Reference book:**

College Physical Experiment, Teng Qing, Liu Chuanxian, China Machine Press

**College Chemistry (3 credits)**

**Course code:** b1020017

**Suitable majors:** all

**Instructor:** Wang Jifen, Xu Jinqiu, Zhou Yuling, Qiao Wei

**Brief introduction:**

Through this course, the students are required to master the theory of balance, all kinds of chemical balance in solution and its application in analytical chemistry, properly understand the concept of “quantity”, basic theories and knowledge about chemical thermodynamics, chemical reaction rate, material structure, dispersion system and solutions, and the property of some important life elements.

**Reference book:**

College Chemistry, Cao Ruijun, Higher Education Press

**College Chemical Experiment (1 credit)**

**Course code**: b4020001

**Suitable majors**: all

**Instructor:** Xu Jinqiu, Zhou Yuling, Qiao Wei, Wang Jifen

**Brief introduction:**

Through this course, the students are required to understand some modern test methods, master the basic experimental operational techniques, get familiar with the operation of common appliances and have certain practical and innovative ability. With the combination of basic chemical operation, experimental research methods and modern analysis solutions, by strengthening the training of basic operational skills, the usage of common appliance, the observation and explanation of experimental phenomenon and the test of experimental data, this course helps the students have an overall understanding of the common chemical experimental knowledge and have the ability of experimental operation, problem analysis and problem solution. The students are also required to better understand the basic theory and concept of common chemistry and improve their rigorous attitude of scientific research, good experimental quality, cooperative spirits and the ability to analyze and solve problems.

**Reference book:**

Self-edited textbook

**College Chinese (2 credits)**

**Course code:** b1020018

**Suitable majors:** all

**Instructors:** Shi Qing and others

**Brief introduction:**

College Chinese is a basic general education course and a common compulsory basic course for students of all majors of literature, science, engineering, farming, clinical medicine, finance, politics and law, foreign language, art, education and others, except the major of Chinese linguistic literature. The objective of this course is to improve the students’ ability of Chinese listening, speaking, reading and writing. Based on the Chinese knowledge acquired during high school, the students are required to narrate, describe, express their feelings, explain problems and thoughts, express their views, communicate with each other and complete their work fluently in their mother language. Based on that, the course tries to teach the students to appreciate, comprehend and interpreter the Chinese language, and improve their Chinese proficiency, literacy and spiritual level.

**Reference book:**

College Chinese, Xu Zhongyu, East China Normal University Press

**Practical Writing A (2 credits)**

**Course code:** b1020019

**Suitable majors:** College of Engineering

**Instructor:** Shi Qing, Zhang Tiantian, Ji Xiaoliang

**Brief introduction:**

Practical Writing is a practical course for all majors of literature, science, engineering, farming, clinical medicine and others except the major of Chinese linguistic literature. The course provides research and instruction of all kinds of practical writing rules or methods through example analysis and writing trainings, gives scientific explanation and theoretical summary, and cultivates the students’ ability of different kinds of practical writing for the needs of work in the future.

The objective of this course is to help the students systematically master the practical use and writing skills of common practical articles, acquire the writing ability, article analysis and solution ability necessary for the senior applicable talents and improve their writing level so as to meet the writing requirements in work, study and scientific research.

**Reference book:**

Practical Writing, Xu Zhongyu, Higher Education Press

**Practical Writing B (2 credits)**

**Course code:** b1020020

**Suitable majors:** College of Arts and Science, School of Economics and Management, School of Art

**Instructor:** Huang Weijian and others

**Brief introduction:**

Practical Writing is a practical course for all majors of literature, science, engineering, farming, clinical medicine and others except the major of Chinese linguistic literature. The course provides research and instruction of all kinds of practical writing rules or methods through example analysis and writing trainings, gives scientific explanation and theoretical summary, and cultivates the students’ ability of different kinds of practical writing for the needs of work in the future.

The objective of this course is to help the students systematically master the practical use and writing skills of common practical articles, acquire the writing ability, article analysis and solution ability necessary for the senior applicable talents and improve their writing level so as to meet the writing requirements in work, study and scientific research.

**Reference book:**

Practical Writing, Xu Zhongyu, Higher Education Press

**Basic Engineering Training (2 credits)**

**Course code:** b1090001

**Suitable majors:** College of Arts and Science, School of Economics and Management, School of Art

**Instructor:** Gao Qi, Gao Ming, Li Beihua, Huang Rui, Zhu Chunyuan, Lu Ming and others

**Brief introduction:**

Basic Engineering Training is an important step of practical education in the process of comprehensive quality cultivation, which is made up of two parts: the mechanics part and Electrical Engineering and Electronic Technology part. The main contents of the course include the knowledge of turning, milling, planning, clamping, 3D printing, laser processing, safety power consumption, the use of common electrical engineering tools and meters, basic techniques of common indoor power distribution, lighting control and common residential information wires. Through this course, the students can learn about the practical manufacturing, know the process of manufacturing, receive some operational training and improve their practical ability; meanwhile, the students can also have a fundamental understanding of the operation of modern industry, and take a careful, rigorous, diligent attitude and work style.

**Reference book:**

Training Manual of Core Ability of Metalworking Practice, Gao Qi and others, China Machine Press

Training Manual of Practical Techniques of Electrical Engineering and Electronic Technology, Huang Rui, Su Jian, Tongji University Press

**Basic Engineering Training A, B and C (3 credits, 2 credits and 2 credits)**

**Course code:** b4090001-3

**Suitable majors:** College of Engineering

**Instructor:** Gao Qi, Gao Ming, Li Beihua, Huang Rui, Zhu Chunyuan, Lu Ming and others

**Brief introduction:**

Basic Engineering Training A, B and C is an important step of practical education in the process of comprehensive quality cultivation, which is made up of two parts: the mechanics part and Electrical Engineering and Electronic Technology part. The main contents of the course include the knowledge of turning, milling, planning, clamping, thermal processing, welding, 3D printing, laser processing, safety power consumption, the use of common electrical engineering tools and meters, basic techniques of common indoor power distribution, lighting control and common residential information wires. Through this course, the students can learn about the practical manufacturing, know the process of manufacturing, receive some operational training and improve their practical ability; meanwhile, the students can also have a fundamental understanding of the operation of modern industry, and take a careful, rigorous, diligent attitude and work style.

**Reference book:**

Training Manual of Core Ability of Metalworking Practice, Gao Qi and others, China Machine Press

Training Manual of Practical Techniques of Electrical Engineering and Electronic Technology, Huang Rui, Su Jian, Tongji University Press

**Basic Engineering Training D (2 credits)**

**Course code:** b4090004

**Suitable majors:** Industrial Design

**Instructor:** Gao Qi, Gao Ming, Li Beihua, Huang Rui, Zhu Chunyuan, Lu Ming and others

**Brief introduction:**

Basic Engineering Training is an important step of practical education in the process of comprehensive quality cultivation, which is made up of two parts: the mechanics part and Electrical Engineering and Electronic Technology part. The main contents of the course include the practical training of turning, milling, planning, clamping, 3D printing, laser processing, safety power consumption, the use of common electrical engineering tools and meters, basic techniques of common indoor power distribution, lighting control and common residential information wires. Through this course, the students can learn about the practical manufacturing, know the process of manufacturing, receive some operational training and improve their practical ability; meanwhile, the students can also have a fundamental understanding of the operation of modern industry, and take a careful, rigorous, diligent attitude and work style.

**Reference book:**

Training Manual of Core Ability of Metalworking Practice, Gao Qi and others, China Machine Press

**Internship of Electrical Engineering Techniques (1 credit)**

**Course code**: b4090005

**Suitable majors**: College of Engineering

**Instructor**: Huang Rui, Zhu Chunyuan, Lu Ming and others

**Brief introduction:**

This course is a specialty basic technique course, a practical training course for undergraduates majored in mechanotronics.

The course objective is to help the students understand the basic structure and working theory of low-voltage appliance component and electric equipment, master the configuration and type selection of common electric components and have the basic ability of installation, wiring, commissioning of electric controlling equipment.

**Reference book:**

Instruction of Electronic Practical Skill Training, Huang Rui, Su Jian, Tongji University Press

**General Education of PE (0.5 credit)**

**Course code**: b1070001

**Suitable majors**: all

**Instructor**: Cong Qun, Ping Yue, Sun Wei and others

**Brief introduction:**

The purpose of this course is to help the students acquire PE knowledge, understand and master the basic exercising methods, get familiar with different characteristics of exercising methods so as to improve their physical quality (like power, speed, flexibility, endurance and agility) and lay a good basis for the following specialty PE course.

**Reference book:**

College PE and Health (3rd edition), Cong Qun, Beijing Sport University Press

**Health Care Course 1, 2, 3, 4 (0.5+0.5+0.5+0.5 credit)**

**Course code:** b10700XX

**Brief introduction:**

Health Care Course is an integral part of the PE course system, which is a specialty course for some students to recuperate health and do ordinary sports exercises. The objective of this course is to help students build up their body and recuperate their health in a positive and healthy attitude during the recuperation period by adjusting the instructional contents and sports strength or frequency. This course helps the students improve their confidence to recuperate, remove the unfavorable elements, and improves their psychological sustainability. The students can acquire basic techniques or exercise methods of brocade, muscle-bone strengthening exercise and others.

**Bodybuilding 1, 2 (0.5+0.5 credit)**

**Course code:** b10700xx

**Brief introduction:**

Bodybuilding uses special movement designs and methods to build up the body according to the physiological functions and anatomical features of the body, the personal health status and body shape, with or without exercise apparatus. The course contents are made up of two parts. The theoretical part focuses on the introduction of basic human body’s knowledge, bodybuilding, basic nutriology knowledge, fat reduce, input and output of energy. The practical part includes the basic bodybuilding trainings and aerobic exercise training. And the basic bodybuilding training starts from the basic techniques, exercises the muscles of different parts of the body so as to achieve the harmony of movement, posture and sense of beauty.

**Orienteering 1, 2 (0.5+0.5 credit)**

**Course code:** b10700xx

**Brief introduction:**

The participator of orienteering is required to find the positions marked on the map with a detailed and accurate map and a compass in sequence and the person who reaches all the marked positions in shortest time is the winner. This course pays attention to the cultivation of the students’ hobby on orienteering so that the students can actively join the orienteering, and get an exercising habit and the sense of all-life sport. Through this course, the students are required to have the ability to think and solve the problems independently, react and make decisions quickly under the physiological and the psychological pressure. This course also helps the students to have a positive and optimistic life attitude, experience the joy from sports and successfulness, make good relationship with competitors and cooperators properly and show good sports moral and cooperation spirit.

**Fancy Rope Jumping 1, 2 (0.5+0.5 credit)**

**Course code:** b10700xx

**Brief introduction:**

Fancy Rope Jumping changes the simple speed-contesting rules of traditional rope jumping exercise and mixes aerobatics, hip-hop dance and gymnastics into the rope jumping. Through the theoretical and practical instruction of fancy rope jumping, the students are required to acquire the basic techniques, abilities and theoretical knowledge of the fancy rope jumping, progressively improve their fancy rope jumping level and master the basic contest and judging methods of rope jumping. Besides, the course cultivates their spirit of enduring hardship and good exercising habits according to the features of fancy rope jumping.

**Shuttlecock 1, 2 (0.5+0.5 credit)**

**Course code:** b10700xx

**Brief introduction:**

Shuttlecock is a traditional Chinese sport spread widely with a long history with the function of entertainment and bodybuilding. The objective of this course is to help the students know the basic knowledge and techniques of shuttlecock, understand the contest rules and judging methods, cultivate their hobby on shuttlecock and improve their techniques and health through study and contest. The contents include shuttlecock kicking, shuttle cock touching, service techniques, fancy shuttlecock and others.

**Basketball 1, 2 (0.5+0.5 credit)**

**Course code:** b10700xx

**Brief introduction:**

This course is to improve the students’ health, strengthen their physical fitness and ability to adapt, prompt their physiological and psychological development, have a healthy behavioral habit and improve their sense of all-life sport and understanding of basketball sport. The students are required to master the basic theoretical knowledge of PE, build up a correct PE sense, acquire the basic technique and methods of scientific body exercises and have a good exercise habit. Meanwhile, the students shall know the simple rules, contest methods of basketball sport, improve their appreciation level of the basketball contest and apply basic techniques or simple tactics; the students shall also have a patriotism spirit and PE morals and the sense to cooperate with partners for better achievements.

**Dragon Boat 1, 2 (0.5+0.5 credit)**

**Course code:** b10700xx

**Brief introduction:**

The sport of dragon boat is a sport with many participators by striking with single blade. Dragon boat sport can develop the students’ strength and coordination, which is beneficial to the cardio-pulmonary function. This course focuses on the basic theoretical knowledge, basic techniques and contesting rules of the dragon boat and introduces the latest information of the dragon boat’s development abroad.

**Volleyball I and II (0.5+0.5 credit)**

**Course code:** b10700xx

**Brief introduction:**

Volleyball is a kind of sport with a history of almost 100 years, which is welcomed by people. It is also a team game, with entertainment and body building effect. It is easily to be learned with adjustable exercise amount, which is suitable for people of different ages, genders and physical status. The sport of volleyball has competitions both in air and on earth, beneficial to the improvement of intelligence, flexibility, resolution and sense of space of people and the cultivation of students’ teamwork spirit. Through the instruction of volleyball, the students are able to progressively master the basic skills and steps of passing, digging, serving and spiking and apply simple attractive or protective tactics into the competition. The students shall understand the features, methods, basic rules and judging methods of volleyball sport too.

**Ping pong I and II (0.5+0.5 credit)**

**Course code:** b10700xx

**Brief introduction:**

Ping pong is a kind of sport with a long history, which is welcomed by Chinese people. By learning the basic knowledge, sills, tactics and competition skills of Ping pong, the students are able to understand the features and development of Ping pong and have the interest on this sport. Through this course, the students can not only join and enjoy the Ping pong competition, but also master the basic competition rules and judging methods and form the habits of life-long exercise.

**Life and Health Education I and II (0.5+0.5 credit)**

**Course code:** b10700xx

**Brief introduction:**

Life and Health Education is a kind of PE course for all the students integrating the theoretical knowledge and practical exercises together, with the purpose to help the students systematically understand the human body system, master the basic theory or methods of exercising, and form a healthy life mode. The students are required to master the necessary basic knowledge and methods for the existence of human beings, improve their ability to react to natural disasters or accidents correctly, know how to save others or themselves and improve their sense of safety. The students are also able to climb, jump and support in complex environments. This course also improves the students’ physical quality including sense of balance, flexibility and strength and their competitive spirit and strong wills.

**Tennis I and II (0.5+0.5 credit)**

**Course code:** b10700xx

**Brief introduction:**

Tennis is a kind of aggressive sport with the features of entertainment, appreciation and body exercising effects. It can improve the physical quality of speed, strength, flexibility and others, and the psychological quality of judgment, reaction and others. This course mainly introduces the basic knowledge, tactics, rules of tennis, helping the students master the serving technology. The course stresses the application of experiences in practice so that the students master the tactics and appreciation skills.

**PE Dance I and II (0.5+0.5 credit)**

**Course code:** b10700xx

**Brief introduction:**

PE Dance is also called “international style of ballroom dancing”, which originates from the ballroom dance. It is a kind of sport combining PE and art. Through the study of waltz, Vienna waltz, jive and cha-cha, the students are able to understand the differences between modern dance and Latin dance, master the basic steps and theories of modern dance and Latin dance, and skillfully get the footwork, waist movement, body swing and gesture.

**Swimming I and II (0.5+0.5 credit)**

**Course code:** b10700xx

**Brief introduction:**

Swimming is not only an exercising sport, but also an important survival skill and a good body-shaping sport, which can not only improve the cardiopulmonary function and immunity to diseases, but also train the mental strength. The course contents include body floating with breathing skills, pushing off the wall, breast stroke and free-style stroke. The exams require the students to swim a certain distance based on the completion of certain actions.

**Badminton I and II (0.5+0.5 credit)**

**Course code:** b10700xx

**Brief introduction:**

Modern badminton originates from UK. The badminton competition in the Olympics is divided into singles, doubles and mixed doubles. Through the instruction of badminton course, the students are able to understand the history and development of badminton, the features and values of badminton sport, cultivate their interest on badminton, and master the basic technologies, tactics and exercises of that sport, taking badminton as a life-time exercise. Based on that, the course pays attention to the improvement of strength, speed, endurance, flexibility, ductility. The students are also required to understand the competition and judgment methods of badminton. Besides, the course helps the students improve their self-regulation ability, take an active role in study, and overcome or remove their psychological obstacles.

**Football I and II (0.5+0.5 credit)**

**Course code:** b10700xx

**Brief introduction:**

Football is a team aggressive ball game, which is called “No.1 Sport in the world” and welcomed by people around the world. The football sport can improve the health status, develop the movement ability, cultivate the courageous, intelligent, tenacious and teamwork spirit and forms a good exercise habit. The course instructs basic knowledge, skills and tactics of football and emphasizes the competition instruction, so as to improve the competition skills, know the football knowledge and rules, and appreciate high-level football competitions.

**Aerobics I and II (0.5+0.5 credit)**

**Course code:** b10700xx

**Brief introduction:**

Aerobics is a kind of sport combining music, gym and dance with the features of exercising, strength and beauty based on aerobic exercises, so as to improve health, form correct body shape and uplift the mind and spirit. It is an exercising method to realize health and beauty, with the features of variable coordination and rhythmic actions, suitable for the physiological and psychological characteristics of modern females and the needs of human beings for health, beauty and entertainment in modern times, thus it is well welcomed by people. Meanwhile, the aerobics can play an active role in the improvement of body health and cultivation of aesthetic knowledge, cultural taste and elegant sentiment of human beings.

**Martial Art I and II (0.5+0.5 credit)**

**Course code:** b10700xx

**Brief introduction:**

Martial Art is a kind of national traditional sport which combines the attractive and protective actions of kicking, hitting, throwing and holding, and the actions of gestures, steps, balancing, jumps, so as to improve health and strengthen the strong will through routines and fights. Martial art stresses the physical and psychological exercises, which is beneficial to healthy conditions and spiritual status. Through the study of basic theoretical knowledge of martial art, the students are able to understand the cultural value and function of martial art correctly, which is beneficial to the improvement of the students’ cultural literacy and the patriotic spirit cultivation.

**Shape I and II (0.5+0.5 credit)**

**Course code:** b10700xx

**Brief introduction:**

Through the study of shape and basic niceties, the students can show a balanced shape and beautiful outlooking, master the skills of basic shape control, basic quality training and design of combined actions, learn some practical basic etiquettes, understand the meaning of shape and etiquettes, build up correct world view, life view and values.

**Yoga I and II (0.5+0.5 credit)**

**Course code**: b10700xx

**Brief introduction:**

Yoga originates from the ancient India over 5000 years ago, with a meaning of combination of selfness and initial motivation. It is a sport with the most harmonious combination of sprit and human body. However, yoga is not only an exercise, but also a kind of life style. Through the theoretical instruction, the students are able to understand the basic knowledge of yoga and its feature, cultivate good exercising habit and movement ability independently and voluntarily. The exercise of yoga position can adjust the physical system, improve the cardiopulmonary function, cultivate good spirit and perfect the body shape. Through yoga, the students can also improve their ego health care ability, keep healthy life style, have the consciousness of life-time exercises and improve the physical conditions for independent exercises.

**Military Theory (0.5 credit)**

**Course code:** b10700xx

**Suitable majors:** all

**Instructor:** Chang Mingli, You Xihu and others

**Brief introduction:**

Military Theory focuses on the national defense education, requiring the students to know the national defense history of our country, understand military theory, international strategic environment, military advanced technology and informationalized war, so as to improve the students’ sense of national defense, strengthen their patriotic education and improve their comprehensive quality.

**Reference book:**

Instruction of Military Theory (4th edition), Zhang Guoqing, Xi Jirong, Tongji University Press

*Specialty Course*

**College of Engineering**

School of Intelligent Manufacturing and Controlling Engineering

**CAD/CAM (2 credits)**

**Course code:** b2011001

**Suitable majors:** Mechanical and Electronic Engineering

**Instructor:** He Yu’an, Su Fangfang

**Brief introduction:**

This course aims to help the students know how to use 3D cartographic software and do CAM simulation processing.

**Reference book:**

Basic Mechanic CAD Technology, Tong Binshu, Tsinghua University Press

**Prerequisite:** Mechanic Drawing

**C Program Design (3 credits)**

**Course code**: b2011002

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Qin Qing, Wang Sujuan, Feng Rongda and others

**Brief introduction:**

The main objective of this course is to help the students acquire the techniques to do program design with C language through the study of grammar rules, data type, data computing, sentence, system function and program structure of C language program design, laying a good basis for the development of all kinds of practical programs.

**Reference book:**

Instruction of C Program Design, Tan Haoqiang, Tsinghua University Press

**ERP Theory and Application (2 credits)**

**Course code**: b2011003

**Suitable majors**: Industrial Engineering

**Instructor**: Wang Xiaogang, Nie Li and Liu Kai

**Brief introduction:**

This course introduces working theory, processing logic, execution and operational management methods of ERP with a large amount of project examples. The contents include the whole production and operational process of manufacturing market forecast, product sales, production plans, material need, capacity need, storing control and workshop management, related financial activities and the functional module of the ERP system. Through this course, the students can systematically know the company’s needs and applications of informationalization. The main instructional contents of this course include: the history of ERP, basic theory of ERP, the business process of manufacturing company, the comprising modules of ERP, the economic return analysis and evaluation of ERP, the realization of ERP system, the execution and operational management of ERP, the evaluation of application and execution of ERP, and related ERP problems.

**Reference book:**

Enterprise Resource Plan (2nd Edition), Zhang Zhenji, Shao Liping, Publishing House of Electronics Industry

**Prerequisite:** Program Design and Algorithm, Basic Database Application

**Java Program Design (2 credits)**

**Course code**: b2011004

**Suitable majors**: Information Management and System

**Instructor**: Tang Yan, Wang Anbao, Zhang Shiming, Zhu Bin

**Brief introduction:**

This course is a basic course of computer program design language, with the objective to improve the computer application ability of the students by instructing the basic program design thoughts and the object-oriented consciousness. Through this course, the students are required to master the basic knowledge of program design language, basic concept of object orientation and basic methods of program design, and comprehensively solve simple practical problems with the above knowledge.

**Reference book:**

Basic Instruction of Java Object-oriented Program Design, Feng Hognhai, Tsinghua University Press

**Oracle Database (2 credits)**

**Course code**: b2011005

**Suitable majors**: Information Management and System

**Instructor**: He Haihui, Yan Yu

**Brief introduction:**

This course is a specialty practical course for software engineering majors. The main objective of this course is to introduce the Oracle database widely used in enterprises and help the students know the installation, system structure, standard SQL and extensive SQL design or use of the Oracle database system. The students are required to master the application of SQL language and PL/SQL program design in Oracle database system, know the right setting and role in Oracle database system and understand the storage process, use of trigger, concept of safety and completeness of database and the basic methods to realize safety and completeness.

**Reference book:**

Instruction of Oracle Database Technology and Experiment, Qian Xuezhong, Zhang Ping, Tsinghua University Press

**Prerequisite:** Introduction to Database, Course Internship of Introduction to Database System

**PLC Theory and Application (2 credits)**

**Course code**: b20110006

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Wang Sujuan

**Brief introduction:**

This course gives a comprehensive analysis on the common controlling apparatus components, basic controlling steps, controlling modes and typical mechatronic-driving controlling wires, starting from introduction of the traditional electronic controlling technology. Based on that, the course also introduces the hardware structure, system setting, ordering system and editing methods of PLC and helps the students have a comprehensive understanding of the electrical controlling and editable controlling machine, so as to improve their analysis and design ability of the controlling system during the process of industrial manufacturing.

**Reference book:**

Electrical Controlling and PLC, Yao Rongrong, Higher Education Press

**Prerequisite:** Electronic Control Technology

**Web Program Design (2 credits)**

**Course code**: b2011007

**Suitable majors**: Information Management and System

**Instructor:** Wen Wen, Wu Jiaxin

**Brief introduction:**

Through this course, the students are required to master the application of web programming language with ASP.NET and understand the generation principle and editing methods of dynamic webpage, laying a basis for the courses of website construction and maintenances. The students are required to know the basic concept and knowledge of ASP.NET, understand the generation principle of dynamic webpage and the method of dynamic webpage’s visit to Web database. Besides, the students shall know the basic application theory and programming methods of C# language, master the ASP.NET program development technologies based on C#, know the production of interactive webpage based on database visit and learn the programming technology in the network based on ASP.NET.

**Reference book:**

Web Program Design Cases, Guo Wenyi, China Machine Press

**Prerequisite:** Introduction to HTML Database System

**XML Language (2 credits)**

**Course code**: b2011008

Suitable major: Information Management and System

**Instructor**: Wen Wen

**Brief introduction:**

Through this course, the students are required to understand the development, constraint rules, storing and accessing methods of XML files, the basic grammar of XML language, know the effectiveness verification of XML files with DTD, XSD and the differences between each other, and acquire the method of showing XML files with XSL language, the basic grammar and simple application of XQuery, the programming thoughts, common property and methods of DOM, the basic concept of data interchange and SQL Server 2005’s support to XML.

**Reference book:**

Self-edited Textbook of XML and Its Application, Wen Wen, Shanghai Polytechnic University Press

**Finite Element Analysis of Sheet Formation (2credits)**

**Course code**: b2011009

**Suitable majors**: Material Formation and Control

**Instructor**: Tian Haobin

**Brief introduction:**

Through this course, the students can apply Dynaform software to analyze the practical stamping process, have a basic understanding of the infinite element theory and lay a good basis for the following study of analysis, design and amendment of stamping die and the design of stamping process. This course is suitable for the undergraduate students majored in material formation and control.

**Reference book:** CAE Design and Application of Sheet Forming: Based on DYNAFORM, Wang Xiufeng, Lang Lihui, Beihang University Press.

**Prerequisite:** Stamping Technology and Mould Design

**Theory and Technology of Sheet Metal Formation (2 credits)**

**Course code**: b2011010

**Suitable majors**: Mechanical Engineering

**Instructor**: Wan Wenjing

**Brief introduction:**

The objective of this course is to help the students acquire the design and manufacturing process of typical components, know the common deficits and solutions of sheet metal formation technology and have the ability to analyze and solve the practical problems during manufacturing. The main course contents is the categorization of stamping technology, performance analysis of component stamping, typical stamping technology features and mould design (blanking, bending, pulling and spinning).

**Reference book:** Plane Sheet Metal Technology, Wang Haiyu, Northwest Industrial University Press.

**Prerequisite:** Basic Mechanic Manufacturing, Plastic Formation Theory

**Frequency Control System (2 credits)**

**Course code**: b2011011

**Suitable majors**: Automation

**Instructor**: Zheng Pu, Xu Jie, Zhang Shuping

**Brief introduction:**

This course is a specialty course for the major of automation. The objective of this course is to research on the composition, working theory and features of all kinds of asynchronous motors’ frequency control system, analyze the static and dynamic performance of that system, and help the students master the basic experimental methods.

**Reference book:** Movement Control System, Bai Jing, Higher Education Press  
**Prerequisite:** Basic Motor and Driving Technology, Converter Technology, Automatic Control Theory, Automatic Controlling System

**Standardization Project (2 credits)**

**Course code**: b2011012

**Suitable majors**: Industrial Engineering

**Instructor**: Bai Yuewei, Pan Fangyu, Liu Kai

**Brief introduction:**

This course aims to help the students know that the standardization science is a cross discipline and basic discipline of management engineering science and special technology. Standardization is the basic technological work of manufacturing and business management, which can prompt the development of economy and society. The students shall systematically master the basic knowledge and management requirements of standardization, know the laws and regulations of standardization and understand the method of standard making, amending, execution and supervision.

**Reference book:**

Standardization Project of Enterprise, Hong Shengwei, China Standard Press

**Basic Material Science (2 credits)**

**Course code**: b2011013

**Suitable majors**: Material Formation and Control, Mechanical Engineering

**Instructor**: Fu Jianqin

**Brief introduction:**

Through this course, the students shall know the basic knowledge of material science, including the metal structure (crystal system and crystal defects), compound metal structure (atom sequence in the compound metal, basis of binary system and computing of quantity), master the theory and application of thermal processing technology changing the material performance, and understand the category, performance, feature and functions of the common metal materials used in engineering projects. The students are also required to determine the range of materials and make reasonable choices in accordance with the performance requirements of components; meanwhile, the students are required to have a good understanding of the performance features and applications of other engineering materials like pottery, polymers, composite, functional materials and other new materials.

**Reference book:**

Engineering Materials, Zhu Zhangxiao, Yao Kefu, Tsinghua University Press

**Prerequisite:** Metalworking Practice, Engineering Mechanics, Basic Mechanic Manufacturing

**Application of Measurement Control Technology (2 credits)**

**Course code**: b2011014

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Feng Rongda, Qing Qing, Dou Jianfang

**Brief introduction:**

This course systematically introduces the features, development and application of modern measurement control technology, including the new sensor technology, modern measurement control bus technology, virtual instrument technology, distance measurement control technology, electrical instrument measurement control system integrated technology, automatic testing instrument and software design.

**Reference book:**

Modern Measurement control Technology and its Application, Wu Guoqing, Publishing House of Electronics Industry

**Prerequisite:** Circuit, Sensor Theory, Signal and System

**Measurement Control Technology and System (3 credits)**

**Course code**: b2011015

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Feng Rongda, Qing Qin, Dou Jianfang

**Brief introduction:**

This course focuses on the research on the composition theory, design technology and application method of measurement control system, including the microcomputer interface, standard bus, data processing method, anti-disturbing technology, monitoring program design, self-examination and fault diagnosis of measurement control system and typical case analysis of measurement control system. The objective of this course is to help the students acquire the design and development of measurement control system, meet the development requirement of modern measurement control system and instrument, and lay a solid basis for the graduation design and the work of the students in the future.

**Reference book:**

Modern Measurement control Technology and System, Han Jiuqiang, Tsinghua University Press

**Prerequisite:** Circuits, Sensor Theory, Signal and System

**Testing Technology (2 credits)**

**Course code**: b2011016

**Suitable majors**: Mechanical Engineering

**Instructor**: Yang Shuzhen

**Brief introduction:**

This course is a selective course for the major of mechanical engineering. Through the course, the students are required to understand the sensor measurement theory, measurement signal processing method, basic knowledge of computer testing system, master the measurement and application methods of common physical values like temperature, force, distance and vibration, learn to choose instruments reasonably to compose some typical testing system and extract useful information without distortion.

**Reference book:**

Testing Technology of Mechanical Engineering, Liu Peiji, China Machine Press

**Prerequisite:** Advanced Mathematics, Electrical Engineering and Electric Technology

**Product Data Management (2 credits)**

**Course code**: b2011017

**Suitable majors**: Industrial Engineering

**Instructor**: Wang Xiaogang, Xia Yanchun, Liu Kai

**Brief introduction:**

Product Data Management (PDM) is an information and process management technology of the product forming process of enterprises, which is new and hot of enterprise informationalizaiton and is one of the key technologies executed in informationalization project. With the speeding up of knowledge economy and economic globalization, the product innovation has become the core of enterprise competition in 21st century. How to use the modern information technology to quickly collect product data and knowledge, and build up the product innovation system and process, has become the key step to realize product innovation. Product Data Management is such a technology which can realize the product innovation and product knowledge management. This course introduces the basic concepts, theories and methods, system structure of PDM technology, PDM cases and typical PDM system, so as to meet the needs of a large amount of mixed talents for the informationalization project of the enterprise.

**Reference book:**

Product Data Management, Li Yi, Publishing House of Electronics Industry

**Prerequisite:** Management Information System

**Cost Management (2 credits)**

**Course code**: b2011018

**Suitable majors**: Industrial Engineering

**Instructor**: Nie Li, Xia Yanchun

**Brief introduction:**

Project Cost Management is a specialty course widely used in engineering practice and is also the core of the project management. This course tries to introduce the cost management of the engineering project from the theoretical and practical perspective, with the objective to help the students know the important role of project cost management in engineering project management. The students shall also have a clear understanding of the composition elements of the project cost management system, master the methods of project cost budget, settlement, cost control and decision for the project practice in the future, and have the ability to manage the engineering project comprehensively and systematically together with the knowledge of engineering technology, economy, management, laws and others.

**Reference book:**

Project Cost Management, Mou Wen, Xu Jiuping, Economic Management Press

**Prerequisite:** Accounting

**Forming Machines and Controlling (2 credits)**

**Course code**: b2011019

**Suitable majors**: Material Formation and Control

**Instructor**: Jia Lixin

**Brief introduction:**

This course mainly introduces the working theory and features, typical structure, performance, main technical parameters and selection principle of all kinds of forming machines commonly used in forming manufacturing, together with some non-mainstream instrument commonly used in manufacturing. The objective of this course is to help the students get familiar with the above knowledge, understand the using technology and range of all kinds of equipment and correctly choose the type and parameter of instrument in according to different technological requirements, reasonably, accurately and effectively use and maintain the equipment, deal with the relationship between technology, mould and equipment well, and know some other professional forming equipment.

**Reference book:**

Material Forming Machine, Wang Weiwei, China Machine Press

**Prerequisite:** Basic Mechanic Manufacturing, Mechanic Design

**Basic Program Design (C++) (2 credits)**

**Course code**: b2011020

**Suitable majors**: Information Management and Information System

**Instructor**: Luo Shoucheng

**Brief introduction:**

Program Design is a general education course for undergraduates, the contents of which include object-oriented program design and the most basic data structure and software engineering knowledge. The objective of this course is to cultivate the students’ object-oriented programming ability and their logical thinking ability. This course chooses object-oriented C++ language.

**Reference book:** Basic C++ Program Design, Guan Jianhe, Tsinghua University Press

**Prerequisite:** Basic Computer Culture

**Program Design and Algorithm (3 credits)**

**Course code**: b2011021

**Suitable majors**: Industrial Engineering

**Instructor**: Wang Xiaogang, Liu Kai

**Brief introduction:**

Program Design and Algorithm is a specialty basic course, which focuses on Visual C# 2010, introducing the basic design methods of computer program, data structure and algorithm analysis. Through this course, the students are required to master the basic structure of Visual C# 2010 and acquire the ability to design simple application programs with Visual C#2010 to solve the practical problems, laying a good basis for the following specialty courses.

**Reference book:**

Data Structure (C# Language), Lei Junhuan, Tsinghua University Press

**Stamping Technology and Mould Design (3 credits)**

**Course code**: b2011022

**Suitable majors**: Material Formation and Control

**Instructor**: Tian Haobin

**Brief introduction:**

The purpose of this course is to help the students master the basic theory, basic knowledge and application ranges necessary for the stamping mould design, and acquire the design principle and methods of the stamping moulds. Through the study of cold stamping technology of small-to-medium sized component and mould design, the students shall master the analysis methods of technologies like blanking, bending, pulling, bulging and other mould design methods.

**Reference book:**

Stamping Technology, Xiao Jingrong, China Machine Press

**Prerequisite:** Plastic Formation Theory

**Sensor Theory (2 credits)**

**Course code**: b2011023

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Chen Baoyu, Jiang Xiaojun, Qing Qing

**Brief introduction:**

Sensor Theory is a specialty basic course for the major of electronic information engineering, measurement and control technology and instrumentation, a compulsory course, a comprehensive course with theoretical and practical contents. The course contents include: 1. basic theories of different sensors, the working theory, main performance and features of different sensors which are commonly used in the measurement of geometry values, mechanical values and other values; 2. reasonably choose and use sensors; 3. the engineering design method and experimental research method of the common sensors; 4. the development trend of the sensors.

**Reference book:**

Automatic Testing Technology and Application, Liang Sen, China Machine Press

**Prerequisite:** College Physics, Engineering Optics, Analog Circuit, Digital Circuit and others

**Undergraduate Innovation Project Design (2 credits)**

**Course code**: b2011024

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Qing Qing, Wang Sujuan, Feng Rongda and others

**Brief introduction:**  
The main purpose of this course is to cultivate the practical ability and innovative thoughts of the students through the innovative projects.

**Reference book:**

Self-edited textbook

**Prerequisite:** Circuit, Digital Electronics, Analog Electronics, C Program Design

**Electrical Engineering and Electronic Technology (3 credits)**

**Course code**: b2011025

**Suitable majors**: Traffic and Transportation

**Instructor**: Liu Yiping and Xie Wei

**Brief introduction:**

This course introduces the basic knowledge of circuit, Kirchhoff Law, superposition theorem, Thevenin’s theorem, AC knowledge, semiconductor, single tube, operational amplifier, digital electrical technology.

**Reference book:**

Instruction of Electrical Engineering, Qing Zenghuang, Higher Education Press

**Electrical Engineering and Electronic Technology (4 credits)**

**Course code**: b2011026

**Suitable majors**: Mechanical and Electronic Engineering

**Instructor**: Kang Liang and Feng Tao

**Brief introduction:**

This course introduces the basic knowledge of circuit, Kirchhoff Law, superposition theorem, Theremin’s theorem, AC knowledge, semiconductor, single tube, operational amplifier, digital electrical technology.

**Reference book:**

Instruction of Electrical Engineering, Qing Zenghuang, Higher Education Press

**Electrical Engineering and Electronic Technology (3 credits)**

**Course code**: b2011027

**Suitable majors**: Material Formation and Control, Mechanical Engineering

**Brief introduction:**

This course introduces the basic knowledge of circuit, Kirchhoff Law, superposition theorem, Thevenin’s theorem, AC knowledge, semiconductor, single tube, operational amplifier, digital electrical technology.

**Reference book:**

Instruction of Electrical Engineering, Qing Zenghuang, Higher Education Press

**Basic Motor and Driving Technology (3 credits)**

**Course code**: b20110028

**Suitable majors**: Automation

**Instructor**: Cui Lei, Yao Rongrong, Gu Lizhati

**Brief introduction:**

This course is a specialty basic course for the major of automation. The course is to research on the composition, theory of DC motor and transformer and the operational status of DC driving. Through this course, the students are required to master the composition, working theory, electric-magnetic relationship, mechanic features, and the starting, braking and speed-adjusting method of the DC motors.

The students are also required to know the composition, working theory, electric-magnetic relationship, working features of the transformer and the connection group of the three-phase transformer. Besides that, students shall also master the knowledge about the composition, working theory, electric-magnetic relationship, mechanic features, starting, braking and speed-adjusting method of the AC motors, the experimental methods of all kinds of motors and transformers and the motors for other functions and new motor technologies.

**Reference book:**

Motor and Electric Driving, Zhou Dingyi, China Machine Press

**Prerequisite:** College Physics (electromagnetic field), Circuit

**Power Electronic Converter Technology (3 credits)**

**Course code**: b2011029

**Suitable majors**: Automation

**Instructor**: Xu Tao, Song Haihui, Gu Lizhati and others

**Brief introduction:**

The objective and task of this course is to help the students get familiar with the feature and using methods of different power electronic components, master the structure, working theory, controlling method, design algorithm and experimental techniques of different power electronic circuit, and know the application range of all kinds of power electronic facilities and technological economic index. Meanwhile, this course lays a good basis for the following courses.

**Reference book:**

Power Electronic Converter Technology (7-111-04175-5), Huang Jun, China Machines Press

**Prerequisite:** Analog Electric Technology, Digital Electric Technology

**Circuit (3 credits)**

**Course code**: b2011030

**Suitable majors**: Automation

**Instructor**: Zhang Shuping

**Brief introduction:**

Circuit is a technological basic course for the major of electronic engineering, electric information, and computer. The objective of this course is to help the students master the basic theory and analysis computation of the linear circuit and master the following important knowledge required by the instructional outline of this course: Kirchhoff Law, superposition theorem, Thevenin’s theorem, first-order circuit, AC circuit analysis, three-phase circuit, ideal transformer and others. Besides, the course aims to train the students to have good practical application ability and lay a good basis for the study of the following courses and the cultivation of their innovation ability.

**Reference book:**

Basic Circuit Analysis (4th edition) I and II, Li Hansun, Higher Education Press

**Prerequisite:** Advanced Mathematics (Calculus), College Physics

**Circuit (4 credits)**

**Course code**: b2011031

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Chen Baoyu, Jiang Xiaojun

**Brief introduction:**

Circuit is a technological basic course for the major of electronic engineering, electric information, and computer. The objective of this course is to help the students master the basic theory and analysis computation of the linear circuit and master the following important knowledge required by the instructional outline of this course: Kirchhoff Law, superposition theorem, Thevenin’s theorem, first-order circuit, AC circuit analysis, three-phase circuit, ideal transformer and others. Besides, the course aims to train the students to have good practical application ability and lay a good basis for the study of the following courses and the cultivation of their innovation ability.

**Reference book:**

Basic Circuit Analysis (4th edition) I and II, Li Hansun, Higher Education Press

**Prerequisite:** Advanced Mathematics (Calculus), College Physics

**Circuit Design and Plate Making (2 credits)**

**Course code**: b2011032

**Suitable majors**: Mechanic and Electronic Engineering

**Instructor**: He Cheng and Sun Fangfang

**Brief introduction:**

This course focuses on the basic knowledge of functional installation for Protel 99, the function of schematic diagram editor and schematic diagram making method, the function of printed plate editor, design process and techniques of single and double-face printed plate, basic operational knowledge and operational techniques. Through this course, the students shall get familiar with the circuit schematic diagram making and printed circuit plate design.

**Reference book:**

Protel Circuit Design and Plate Making, Zhang Qipeng, Publishing House of Electronics Industry

**Prerequisite:** Electrical Engineering, Electronic Technology

**Electric Control and Programmable Controller (4 credits)**

**Course code**: b2011033

**Suitable majors**: Automation

**Instructor**: Gao Shunfu, Yao Rongrong, Wang Zhifeng and others

**Brief introduction:**

The course objective is to introduce the common low-voltage appliances, electric controlling basic circuit, electric controlling system design, theory and actual application circuit of programmable controller and the analysis and design of electronic control and programmable controller system. Based on the introduction of structure, theory and application features of the low-voltage appliances, the course also introduces the structure, theory, instructional system, programming and the use of accessories of programmable controller together with some experimental instruction, which is to cultivate their practical ability and the ability to analyze and solve the problems.

**Reference book:**

Electronic Controlling and PLC, Yao Rongrong, Higher Education Press  
**Prerequisite:** Electrical Engineering

**E-commerce (2 credits)**

**Course code**: b2011035

**Suitable majors**: Information Management and Information System

**Instructor**: Yang Jinghui

**Brief introduction:**

With the rapid development of computer network and communication technology, especially the wide application of Internet globally, E-commerce has become an effective technology for the business activities of enterprise. EC progressively changes the work and life style of the people as a new business mode and brings changes of thinking mode and behavioral rules to the people, the influences of which has been far beyond the commerce and technology themselves. EC is a comprehensive discipline combining systematic science, socialism, management, law and other disciplines related to different industries, together with computers and networks. This course outline includes 10 parts of contents.

**Reference book:**

Theory and Practice of Electronic Commerce, Zhao Liqiang, Jing Hao, Tsinghua University Press

**Prerequisite:** Management Information System, Database Theory and Application, Computer Network and Application

**Basic Electronic and Electrical Engineering Technology (2 credits)**

**Course code**: b2011036

**Suitable majors**: Industrial Engineering

**Instructor**: Feng Tao and Liu Yiping

**Brief introduction:**

This course introduces basic knowledge of circuit, Kirchhoff Law, superposition theorem, Thevenin’s theorem, basic AC knowledge, basic semiconductor knowledge, single tube, operational amplifier and digital electrical technology.

**Reference book:**

Instruction of Electrical Engineering, Qing Zenghuang, Higher Education Press

**Motor Theory (2 credits)**

**Course code**: b2011037

**Suitable majors**: Traffic and Transportation

**Instructor**: Jiang Miaofan

**Brief introduction:**

This course introduces basic working theory of the spark ignition and compression ignition motors most commonly used in cars. The course contents are made up of two parts. The first part describes the power takeoff and consumption theories of the motors, including the power economic index, features of fuel and working medium, thermal circulation analysis and energy consumption, charging replacement and operational features and performance adjustment. The second part describes the burning and discharging of motors, including basic burning knowledge, the forming and burning of mixed gas, the theory and solutions of special burning problems, the forming and control of pollutions and the new burning methods of high-effective and low-polluted fuels and new fuels.

**Reference book:**

Motor Theory, Ling Xuedong, China Machine Press

**Prerequisite:** Basic Pyrology

**Aircraft System (2 credits)**

**Course code**: b2011038

**Suitable majors**: Mechanical Engineering

**Instructor**: Yuan Wenjing

**Brief introduction:**

This course aims to help the students know the structure of wings and tail, body and body openings, typical stress type and force transmission analysis, the function of main parts of the plane and understand the general system and electrical system of the plane. The main contents of the course include the basic aerodynamics of the plane, structure of the wings and tail, structure of the plane body, structure of the undercarriage, general system of the plane, electric system and the general design of the plane.

**Reference book:**

Structure and Theory of Planes, Yang Huabao, Northwest Industrial University Press

**Prerequisite:** Theoretical Mechanics, Material Mechanics, Introduction to Aeronautics & Astronautics

**Electronic Part of Wind Farm (2 credits)**

**Course code**: b2011039

**Suitable majors**: Automation

**Instructor**: Song Haihui, Chen Jing, Cui Lei

**Brief introduction:**

This course is to help the students master the theory of electronic appliances in the wind farm, main electronic wiring, station power, selection of electronic appliance and conductors, power distribution equipment, operation of motors, operation of electric transformers, control of wind farm and signals.

**Reference book:**

Electronic System of Wind Farm, Zhu Yongqiang, China Machine Press

**Prerequisite:** Wind Power Generation Technology

**Monitoring and Controlling of Wind Turbines (2 credits)**

**Course code**: b2011040

**Suitable majors**: Automation

**Instructor**: Chen Jin, Song Haihui, Xu Tao

**Brief introduction:**

This course is a specialty course for the undergraduates with the major of automation (measurement control technology of new energy appliances), the main contents of which include the monitoring and controlling technology during the operation of the wind turbines. Through this course, the students are required to master the parameter monitoring and basic controlling requirement or strategy of the pitch, variable pitch and variable speed wind turbine, the soft grid connection technology and variable pitch technology of wind turbines, and all kinds of controlling methods and solutions in the tracing process of optimal power curve for the variable speed wind turbine, laying a solid basis for the theoretical research and engineering application of related disciplines.

**Reference book:**

Controlling Technology of Wind Turbine, Ye Hangzhi, China Machine Press

**Prerequisite:** Automatic Control Theory, Electronic Technology, Theory of Microcomputer

**Wind Power Generation Technology (2 credits)**

**Course code**: b2011041

**Suitable majors**: Automation

**Instructor**: Song Haihui, Chen Jing, Xu Tao

**Brief introduction:**

The students are required to master the forming of wind and wind energy resources, the transformation of wind energy, the basic structure of wind turbines, the wind energy storage, the structure and operation of wind power generation system.

**Reference book:**

Wind Power Generation Technology and Engineering, Song Haihui, China Water & Power Press

**Prerequisite:** Circuit, Motor and Driving Technology

**Polymer Formation Technology and Mould Design (3 credits)**

**Course code**: b2011042

**Suitable majors**: Material Formation and Control

**Instructor**: Qing Mingying

**Brief introduction:**

This course introduces the basic concepts and basic technologies of polymers forming, the polymer forming technology and the theory, method and techniques of mould design. The students are required to understand the main application of polymer forming technology and the making of technological paths, know the basic knowledge of polymer forming technology and mould design, the process and theory of forming technology and the plastic mould design methods.

**Reference book:**

Plastic Formation Technology and Mould Design, Qi Xiaojie, China Machine Press

**Prerequisite:** Basic Material Science B

**Simulation of Polymer Moulding Process (2 credits)**

**Course code**: b2011043

**Suitable majors**: Material Formation and Control

**Instructor**: Wang Zhiguo

**Brief introduction:**

This course introduces the basic knowledge and theory of injection moulding, basic function, theory and analysis process, using techniques and operational methods of different modules of Moldflow software. The purpose of this course is to help the students master the basic operational methods or process of Moldflow software, understand the basic theory of injection moulding, analyze the problems arising from the design and manufacturing of modules and plastic products independently and provide corresponding improvement measures based on that.

**Reference book:** Basic Moldflow Module Analysis Technology, Dan Yan, Wang Bei, Wang Gang, Tsinghua University Press

**Prerequisite:** Polymer Moulding Technology and Module Design

**Factory Power Supply and Distribution (2 credits)**

**Course code**: b2011044

**Suitable majors**: Automation

**Instructor**: Zhang Shuping and Xu Jie

**Brief introduction:**

This course is a specialty course for the major of automation. The main objective of this course is to analyze the theories like the power source supplied to the factory, power load, power circuit and power transformation and distribution station, help the students to master the related protection of first-order and 2nd-order system, and the basic experimental methods. The main purposes include: 1. Know the basic knowledge of factory power supply and power source; 2. Understand the power load and computing; 3. Master the computing of short circuit; 4. Get familiar with the power transformation and distribution station of the factory and its one-order system together with the factory circuit; 5. Understand the over-current protection of the power supply system of the factory (including the fuse protection, low-voltage fuse protection and relay protection); 6. Understand the 2nd circuit and automatic appliances; 7. Know the electronic safety, earthing and anti-lighting; 8. Master the knowledge of electronic lightening of factory; 9. Know the power save of the factory.

**Reference book:**

Factory Power Supply, 5th edition, Liu Jiecai, China Machine Press

**Prerequisite:** Electrical Engineering and Electronic Technology, Motor Driving and Controlling

**Engineering Economics (2 credits)**

**Course code**: b2011046

**Suitable majors**: Industrial Engineering

**Instructor**: Nie Li, Pan Fangyu

**Brief introduction:**

Engineering Economics is an important vocational specialty course for the major of industrial engineering and engineering management. The main purpose of this course is to help the students master the analysis and evaluation of engineering technical economics, select from the different investment plans and lay a good basis for the work in the future.

**Reference book:**

Engineering Economics (2nd edition), Yu Lijun, Hao Liguang, China Machine Press

**Theory of Engineering Control (2credits)**

**Course code**: b2011047

**Suitable majors**: Material Formation and Control Engineering, Mechanical Engineering

**Instructor**: An Shuangli

**Brief introduction:**

The purpose of this course aims to help the students master the basic theory of automatic control, and provide tools or methods of scientific research for the students. Through this course, the students are required to master the analysis methods of time domain and frequency domain of the automatic controlling system with the classic controlling theory.

**Reference book:**

Basic Mechanical Engineering Control, Yang Shuzi, Huazhong University of Science and Technology Press

**Prerequisite:** Integral Transformation, Engineering Mechanics, Calculus

**Engineering Mechanics (3 credits)**

**Course code**: b2011048

**Suitable majors**: Industrial Engineering

**Instructor**: Bao Jun, Li Jian, Wang Qingsheng and Jiang Xin

**Brief introduction:**

This course does a static analysis of the simple structure, and provides the simplest mechanic theories and algorithm for the strength, rigidity and stability of the components.

**Reference book:**

Engineering Mechanics (Statics and Material Mechanics), Fan Qingshan, Tang Jingjing, Higher Education Press

**Prerequisite:** Advanced Mathematics

**Engineering Mechanics I (3 credits)**

**Course code**: b2011049

**Suitable majors**: Material Formation and Control Engineering, Mechanic and Electronic Engineering, Mechanical Engineering, Traffic and Transportation

**Instructor**: Bao Jun, Li Jian, Wang Qingsheng and Jiang Xin

**Brief introduction:**

The purpose of this course aims to help the students know the basic rules and research methods of object mechanic movement and have the ability to extract, analyze and solve practical mechanical problems in simple projects with those rules, laying a necessary basis for the study of the following courses. This course also cultivates the students to analyze and solve problems correctly.

**Reference book:**

Engineering Mechanics I, Fan Qingshan, Guo Guanglin, Higher Education Press

**Prerequisite:** Advanced Mathematics

**Engineering Mechanics II (3 credits)**

**Course code**: b2011050

**Suitable majors**: Material Formation and Control Engineering, Mechanic and Electronic Engineering, Mechanical Engineering, Traffic and Transportation

**Instructor**: Bao Jun, Li Jian, Wang Qingsheng and Jiang Xin

**Brief introduction:**

Though this course, the students are required to have a precise concept of the strength, rigidity and stability of bars, the necessary related knowledge, skillful computing ability and quantitative or qualitative analysis ability and basic experimental ability.

**Reference book:**

Engineering Mechanics II, Fan Qingshan, Guo Guangling, Higher Education Press

**Prerequisite:** Advanced Mathematics

**Engineering Statistics (2 credits)**

**Course code**: b2011051

**Suitable majors**: Industrial Engineering

**Instructor**: Bai Yuewei, Wang Xiaogang, Nie Li

**Brief introduction:**

This course introduces the collection, analysis of data and the basic methods to research the interrelationship and variation rules of the data, helps the students master the basic theory and methods of the engineering statistics, skillfully use the statistics software, acquire the application statistic methods and have the basic ability to analyze or research on the practical engineering problems.

**Reference book:** Engineering Statistics, Miao Rui, China Machine Press

**Prerequisite:** Probability and Mathematical Statistics

**Engineering Control Network and Safety (2 credits)**

**Course code**: b2011052

**Suitable majors**: Automation

**Instructor**: Zheng Pu, Hu Zhihua and Xu Tao

**Brief introduction:**

This course is a specialty course with high practicability. Engineering control network has become the important part of the modern automation application. This course helps the students master the application of network through the study of basic knowledge of engineering controlling network and information network and the internship in Siemens.

**Reference book:**

S7-300/400PLC Industrial Network Communication Technology, Liu Jianchang, China Machine Press

**Prerequisite:** Automatic Control Technology, Computer Technology

**Introduction to Industry 4.0 (2 credits)**

**Course code**: b2011053

**Suitable majors**: Mechanic and Electronic Engineering

**Instructor**: Cai Zhiyong, He Yu’an, Sun Fangfang

**Brief introduction:**

This course helps the students to know the concept, origin and the development status of industry 4.0 in China and the world.

**Industrial Robot (2 credits)**

**Course code**: b2011054

**Suitable majors**: Mechanic and Electronic Engineering, Automation

**Instructor**: He Yu’an, Zhang Yanlei, An Shuangli

**Brief introduction:**

This course helps the students to know the basic knowledge, application and simple working process of industrial robot.

**Reference book:**

**Prerequisite:**

**Industrial Robot and Application (2 credits)**

**Course code**: b2011055

**Suitable majors**: Material Formation and Control Engineering, Mechanical Engineering, Traffic and Transportation

**Instructor**: Zhou Ping

**Brief introduction:**

This course introduces the basic structure, composition of industrial robot and the programming of typical robots. Through experiments, the students are required to operate the robot and write simple programs. The students shall also know the communication and wiring methods of the robot and surrounding appliances.

**Reference book:**

Application Technology of Industrial Robot, Guo Honghong, Science Press

**Prerequisite:** Basic Mechanic Manufacturing, Engineering Drawing

**Industrial Automation and Robot Technology (2 credits)**

**Course code**: b2011056

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Feng Rongda, Qing Qing and Dou Jianfang

**Brief introduction:**

Onsite Bus Technology is the production of the combination of industrial control and computer network. It is an open communication network adapted into the development feature of distributed control system. The course introduces the basic concept of onsite bus, typical onsite bus control technology, PROFIBUS onsite bus control technology, including three types of PROFIBUS, communication protocol, realization methods, installation wiring, standard authentication and test technology, SCADA composition and usage, and the realization of automatic control system of water level with the example of PROFIBUS system.

**Reference book:**

Onsite Bus Technology and SCADA Application, Zhou Bin, Tsinghua University Press

**Prerequisite**:

Communication Theory, Computer Control Technology, PLC and Electric Control, Test and Sensing Technology, Distributed Control System and others

**Industrial Bus Technology (2 credits)**

**Course code**: b2011057

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Chen Baoyu, Jiang Xiaojun and Qing Qing

**Brief introduction:**

Photoelectric Sensing and Test is a compulsory specialty course for the major of photoelectric information science and technology. The course systematically introduces the basic concept of photoelectric sensing and testing technology, working theory and features of different kinds of photoelectric testing appliance and the working theory or design of related practical application system, so that the students can master the basic theory, knowledge and methods of photoelectric sensing technology and test technology, understand the new development of technology and apply those knowledge into the research and work in the future.

**Reference book:**

Photoelectric Sensing and Testing Technology, Jiang Xiaojun, China Machine Press

**Prerequisite:** College Physics, Engineering Optics and others

**Management of Supply Chains and Logistics (2 credits)**

**Course code**: b2011058

**Suitable majors**: Information Management and Information System

**Instructor**: Yang Ying

**Brief introduction:**

This course systematically introduces the related theories and practices of management of logistics and management chains and its development process, explains the theory, methods and development trends of logistics system analysis, enterprise logistics management, logistical work management, supply chains management, methods of supply chains management, logistic information management, logistic cost management, third party logistic management and operation, logistics strategy and organizational management, area logistics and international logistics management, and explores the development trend of the logistic supply chain management.

**Reference book:**

Management of Logistics and Supply Chains, Huang Yunbi, Publishing House of Electronics Industry

**Prerequisite:** Management, Economics, Information Resource Management

**Management Cost Accounting (2 credits)**

**Course code**: b2011059

**Suitable majors**: Information Management and Information System

**Instructor**: Yang Minhui and Luo Shoucheng

**Brief introduction:**

This course innovatively connects the cost management and management accounting together, forming a relatively independent and complete framework of cost management accounting, making up the deficiency of simple sequence and actual separation of cost accounting and management accounting in the textbooks. This course has the following features: 1. The combination of theoretical exploration and practical needs. Although this course pays attention to the research on the theoretical system of cost management accounting; however, it doesn’t neglect the research on the methodology of cost management accounting and the combined application of different management methods; the practice is instructed by theories and the theories are developed through practice. 2. This course combines the strategic management and tactical arrangement together, breaking through the traditional thinking mode and considering management comprehensively from the strategic level. 3. This course combines the macro-value analysis and micro-cost analysis together and researches on the contribution of cost to the increase of value from the perspective of value chain optimization.

**Reference book:** Cost and Management Accounting, Sun Maozhu, China Renmin University Press

**Prerequisite:** Management, Economics

**Management Information System (2 credits)**

**Course code**: b2011060

**Suitable majors**: Industrial Engineering, Information Management and Information System

**Instructor**: Yang Jinghui, Yang Yang, Li Yan, Wang Xiaogang, Liu Kai, Nie Li

**Brief introduction:**

Management Information System is a course combining theories and practices of the disciplines of management, systematic engineering, and computer science and information technology. It is also a specialty course for the master’s degree program for the major of industrial engineering and management, mechanical engineering, management and engineering and others. The main objective of this course is to introduce the concept, theory, structure, technology, systematical analysis, plan and design, systematical execution and evaluation, application cases and latest development of management information system, help the students master the basic theory and concepts of management information system, learn about the method of analysis, design and plan of information system, understand the management information system in different fields and the developing trend of the most advanced system.

**Reference book:**

Instruction of Management Information System, Zhu Shunquan, Tsinghua University Press

**Prerequisite:** Program Design and Algorithm, Basic Database Application

**Management (2 credits)**

**Course code**: b2011061

**Suitable majors**: Industrial Engineering, Information Management and Information System

**Instructor**: Li Yan, Yang Jinghui, Xia Yanchun

**Brief introduction:**

This course researches on the basic rules, theories and ordinary methods of the management activities systematically. The objective of this course is to help the students master the basic theoretical knowledge of the Management and deeply master the objective management rules. Based on that, through case and lecture analysis, the students shall have the ability to discoveranalyze and solve the problems in actual work and life.

**Reference book:**

Management, Xu Guohua, Tsinghua University Press

**Photoelectronic Sensor and Detecting Technology (3 credits)**

**Course code**: b2011062

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Chen Baoyu, Jiang Xiaojun, Cao Jianqing

**Brief introduction:**

Photoelectric Circuit Design and Application introduces the basic thoughts and methods of photoelectric system design. The course provides training of design, installation and commissioning of practical photoelectric system, to strengthen the students’ understanding of optics and circuit and improve their ability to apply, design and condition the optical and electric component or circuit. The course requires the students to make preparations for projects and complete project report independently, with the objective to cultivate the students’ innovative ability and their ability to solve practical problems.

**Reference book:**

Photoelectric Circuit and Making Examples, Chen Zhengong, Defense Industry Press

**Photoelectronic Circuit Design and Application (2 credits)**

**Course code**: b2011063

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Qing Qing

**Brief introduction:**

Through the study of this course, the students are able to master the basic concept and laws of infrared radiation of infrared technology, and understand the basic physical phenomena in the process of emission, absorption and transmission of infrared radiation, with certain theoretical basis in the field of infrared technology and the ability of solving practical problems.

**Reference book:**

Infrared Physics, Zhang Jianqi, X’an University of Electric Science and Technology Press

**Prerequisite:** Circuit, Digital Electronics, Analog Electronics, Sensor Theory

**Photovoltaic Power Generation Technology (2 credits)**

**Course code**: b2011064

**Suitable majors**: Automation

**Instructor**: Xu Tao, Song Haihui, Chen Jin

**Brief introduction:**

This course is a specialty course for the new energy branch of automation major. The objective of this course is to help the students acquire necessary basic theory, knowledge and techniques of photovoltaic power generation technology, laying a good basis for the following courses and the related work task. Through this course, the students are required to master the different knowledge of photovoltaic power generation technology, including the production technology of photovoltaic battery material, storage battery, charging and discharging technology, design and application of solar energy photovoltaic system, and others. The students shall also have the ability to analyze and design a simple photovoltaic system independently.

**Reference book:**

Theory and Application Technology of Solar Energy Photovoltaic Power Generation System, He Daoqing, Chemical Industry Press

**Process Control Technology (3 credits)**

**Course code**: b2011065

**Suitable majors**: Automation

**Instructor**: Hu Zhihua, Tao Lili, Zheng Pu

**Brief introduction:**

This course is a selective course for the major of automation. The objective of this course is to introduce the basic theory, analysis method and experimental techniques of the process control system, help the students understand the development of the process control system, master the basic concept of process control system, learn the basic methods of building up the object math model, know the structure, working process and features of all kinds of control system, acquire the ability to analyze the features of the object, design the reasonable control algorithm in accordance to the object features, and master the engineering setting methods of parameter control.

**Reference book:**

Process Control System, Yu Jinshou, China Machine Press

**Prerequisite:** Automatic Control Theory, Automatic Meters

**Infrared Technology (2 credits)**

**Course code**: b2011066

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Qing Qing, Dou Jianfang

**Brief introduction:**

This course emphasizes the cultivation of elementary ability to solve the practical problems of intelligent test and control, laying a solid theoretical basis for the research and development in the field of computer vision and mode identification. The course objective is to introduce the basic concept, theory, realization methods and practical technology of digital graphic processing and the application of those basic methods to develop the digital graphic processing system, laying a theoretical basis for the study of new graphic processing methods.

**Reference book:**

Digital Graphic Processing and Analysis (2nd edition), Gong Shenrong, Tsinghua University Press

**Prerequisite:** Circuit, Digital Electronics, Analog Electronics, Sensor Theory

**Accounting (2 credits)**

**Course code**: b2011067

**Suitable majors**: Industrial Engineering

**Instructor**: Xia Yanchun, Nie Li, Pan Fangyu

**Brief introduction:**

This course introduces basic theory, methods and operational techniques of accounting comprehensively, systematically and scientifically, helping the students have a clear idea of the basic function, features, objects and tasks of accounting, the significance of accounting to strengthen the enterprise’s economic management and improve their economic incomes. The students shall also understand the accounting elements, the related theories of items and accounts, the accounting methods and its detailed applications, the basic contents of accounting documents and accounting books, the requirements of practical accounting operations, the category and the implementation procedures of different bookkeeping forms; the students are also required to read and compile the basic accounting statements, carry out fiscal evaluation index computing related to accounting statements, have the ability to analyze problems with the learned knowledge, understand the accounting analysis, accounting check, accounting management and others and have an overall rational and emotional understanding of the accounting work.

**Reference book:**

Basic Accounting, Chen Guohui, Chi Xusheng, Northeastern Financial University Press

**Machine Tool Electronic Control (2 credits)**

**Course code**: b2011068

**Suitable majors**: Mechanical Engineering

**Instructor**: Sun Fangfang, He Yu’an, Wang Zhenhua

**Brief introduction:**

This course is to improve the students’ ability to apply the mechatronic technology, cultivate their programming or application ability for the program control of mechatronic technology.

**Reference book:**

Machine Tool Electronic Control Technology, Qi Zhanqing, China Machine Press

**Prerequisite:** Electrical Engineering, Electronic Technology

**Machine Tool Electronics and PLC Control (2 credits)**

**Course code**: b2011069

**Suitable majors**: Mechanical and Electronic Engineering

**Instructor**: Sun Fangfang, He Yu’an, Wang Zhenhua

**Brief introduction:**

This course is to improve the students’ ability to apply the mechatronic technology, cultivate their programming or application ability for the program control of mechatronic technology.

**Reference book:**

Machine Tool Electronic Control Technology, Qi Zhanqing, China Machine Press

**Prerequisite:** Electrical Engineering, Electronic Technology

**Electromechanical Transmission Control I (2 credits)**

**Course code**: b2011070

**Suitable majors**: Mechanic and Electronic Engineering

**Instructor**: Yang Shuzhen, Wang Huanyi, He Cheng

**Brief introduction:**

Through this course, the students can master the basic knowledge and special technology of hydraulic and pneumatic system, have the ability to analyze and apply the hydraulic and pneumatic system and lay a good basis for the future.

**Reference book:**

Hydraulic and Pneumatic Power Transmission, Zuo Jianmin, China Machines Press

**Prerequisite:** Basic Mechanical Engineering

**Electromechanical Transmission Control II (2 credits)**

**Course code**: b2011071

**Suitable majors**: Mechanic and Electronic Engineering

**Instructor**: Yang Shuzhen, Wang Huanyi, He Cheng

**Brief introduction:**

This course researches on the electromechanical transmission control system, introduces the driving and control of electromechanical facility, including the basic driving dynamics, semiconductor converter technology, common driving elements, AC/DC driving system, step driving system and others.

**Reference book:**

Electromechanical Transmission Control, Deng Xingzhong, Huazhong University of Science and Technology Press

**Prerequisite:** Electrical Engineering, Electronic Technology, Numerical Control Technology

**Introduction to Mechatronics (2 credits)**

**Course code**: b2011072

**Suitable majors**: Mechanic and Electronic Engineering

**Instructor**: Cai Zhiyong

**Brief introduction:**

Through this course, the students are required to mater the basic theory and methods of mechatronic system, get familiar with the functions and selection of the main components of the mechatronic system, and have the ability to design the mechatronic products with related prerequisite knowledge.

**Reference book:**

Mechatronic Control Technology and System, Zhou Zude, Huazhong University of Science and Technology Press

**Prerequisite:** Electrical Engineering, Electronic Technology, Mechanical Engineering Test Technology

**Mechanic Innovative Technology (2 credits)**

**Course code**: b2011073

**Suitable majors**: Mechanical Engineering

**Instructor**: Xie Bin, Liu Xiaohang

**Brief introduction:**

This course combines the design process and innovative thoughts together with a large amount of mechanic innovative design case analysis, strengthening the innovative features and focusing on the mechanic innovative design. Through the cultivation of the innovative ability and engineering application ability of the students, the students’ sense of innovation and their ability to solve the actual problems are improved.

**Reference book:**

Mechanic Innovative Design, Lv Zhongwen, China Machine Press

**Prerequisite:** Mechanic Theory, Mechanic Design

**Mechanical Engineering Test Technology (3 credits)**

**Course code**: b2011074

**Suitable majors**: Mechanic and Electronic Engineering

**Instructor**: Yang Shuzhen, Sun Fangfang

**Brief introduction:**

This course researches on the features and analysis methods of mechanical engineering signal, the reasonable selection of engineering test facility and technology of information extraction. Through this course, the students are required to know the basic theory, knowledge and technologies of sensor and test technology, and understand the dynamic features of test facility. Based on that, the students learn to reasonably select the instruments to compose some typical test system, extract useful information without distortion, laying a good basis for the following courses and related engineering technical work.

**Reference book:**

Mechanical Engineering Test Technology, Liu Peiji, China Machine Press

**Prerequisite:** Calculus, Electrical Engineering, Electronic Technology

**Basic Mechanical Engineering (5 credits)**

**Course code**: b2011075

**Suitable majors**: Mechanic and Electronic Engineering

**Instructor**: Fu Jianqing, Cai Chilan, Li Xuelei, Gan Liantao

**Brief introduction:**

This course contents are part of textbook of safety science and engineering, including brief introduction, thermal processing of engineering material and steel, common structure, mechanic transmission, shafts, connection, limit and accommodation, hydraulic transmission, blanking manufacturing, steel cutting, estimation of life length of machines and machine fault diagnosis. The course contents strengthen the cultivation of engineering literacy and comprehensive ability of the students and stress the introduction on new technology, craftsmanship, material and achievements. Through this course, the students are required to understand the basic knowledge, theory and technology of engineering mechanics, steel material and forming technology, commonly used structure, mechanic transmission facility and universal components.

**Reference book:**

Basic Mechanical Engineering, Li Peigen, China Machine Press

**Prerequisite:** Metalworking Practice, Engineering Mechanics

**Basic Mechanics (2 credits)**

**Course code**: b2011076

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Qing Qing, Dou Jianfang

**Brief introduction:**

Through this course, the students are required to understand the composition and basic theory of visual testing system, the selection and design of each part and the graphic processing methods. This course also aims to improve the students’ specialty knowledge, their actual programming ability and cultivate their ability to solve the related problems in the future.

**Reference book:**

Machine Vision, Yu Dianhong, Science Press

**Prerequisite:** Circuit, Digital Circuit, Analog Circuit, Sensor Theory, Digital Graphic Processing

**Mechanic Design (3 credits)**

**Course code**: b2011077

**Suitable majors**: Material Formation and Control, Mechanical Engineering, Traffic and Transportation

**Instructor**: Xie Bin and Liu Xiaohang

**Brief introduction:**

This course is a basic specialty course. Through this course, the students are required to master the design of simple mechanic components and have the ability to analyze and solve practical engineering problems, laying a good basis for the following specialty courses. This course equips the students with basic mechanic design ability and breaks new grounds for their future.

**Reference book:**

Mechanic Design, Higher Education Press

**Prerequisite:** Theoretical Mechanics, Material Mechanics

**Basic Mechanic Design (3 credits)**

**Course code**: b2011078

**Suitable majors**: Industrial Engineering

**Instructor**: Xie Bin, Liu Xiaohang

**Brief introduction:**

This course is a basic specialty course. Through this course, the students are required to master the design of simple mechanic components and have the ability to analyze and solve practical engineering problems, laying a good basis for the following specialty courses. This course equips the students with basic mechanic design ability and breaks new grounds for their future.

**Reference book:**

Basic Mechanic Design, Yang Kezhen, Higher Education Press

**Prerequisite:** Engineering Mechanics

**Mechanic Theory (3 credits)**

**Course code**: b2011079

**Suitable majors**: Material Formation and Control, Mechanical Engineering, Traffic and Transportation

**Instructor**: Wu Jun, Liang Caiping

**Brief introduction:**

Mechanic Theory is a basic specialty course for the undergraduates of mechanic majors, helping the students master the basic theory and knowledge of machine and mechanism. Through this course, the students shall learn to understand the analysis and solution of common problems of mechanics, have the ability of structure analysis, movement analysis and design of common mechanism like planer linkage, cam mechanism, gear mechanism and others and try to solve practical problems with those knowledge laying necessary basis for the following specialty courses.

**Reference book:**

Mechanic Theory, Sun Heng, Chen Zuomo, Ge Wenjie, Higher Education Press

**Prerequisite:** Advanced Mathematics, Modern Engineering Drawing, Theoretical Mechanics

**Basic Mechanic Manufacturing (3 credits)**

**Course code**: b2011080

**Suitable majors**: Material Formation and Control, Industrial Engineering, Mechanic and Electronic Engineering, Mechanical Engineering, Traffic and Transportation

**Instructor**: Cai Chilan, Li Xuelei, Fu Jianqing, Yu Liantao

**Brief introduction:**

Basic Mechanic Manufacturing is a basic specialty course for the major of mechanics. The objective of this course is to help the students master the contents of mechanical engineering materials, understand the basic knowledge and application of forging, welding and other technologies. Meanwhile, the students shall also master the knowledge like the metal cutting theory, knife angle, knife material and surface processing of mechanic components.

**Reference book:**

Basic Mechanic Manufacturing, Yu Longgui, Qiao Shimin, Tsinghua University Press

**Prerequisite:** Engineering Drawing, Metalworking Practice, Interchangeability and Basic Measurement Technology

**Mechanic Manufacturing Technology (3 credits)**

**Course code**: b2011081

**Suitable majors**: Mechanical Engineering

**Instructor**: Wang Wenxia, Li Ning, Liu Ping

**Brief introduction:**

This course is a specialty course for the major of mechanic category. The course contents include the basic knowledge of metal cutting machine tool, mechanic manufacturing technology, chucking appliance design. Through this course, the students shall master the basic theory and methods of mechanic manufacturing technology, learn to correctly select the processing methods and equipment in accordance with the different requirements of processed components, and have the ability to analyze and solve the processing quality problem during the process of mechanic manufacturing and standards or procedures making for the processing of moderately complicated components.

**Reference book:**

Basic Mechanic Manufacturing, Tang Zongjun, China Machine Press

**Prerequisite:** Engineering Drawing, Engineering Mechanics, Basic Mechanic Manufacturing, Engineering Material, Mechanic Measurement Precision and Test

**Basic Industrial Engineering (2 credits)**

**Course code**: b2011082

**Suitable majors**: Industrial Engineering

**Instructor**: Nie Li, Xia Yanchun

**Brief introduction:**

Basic Industrial Engineering is one of the core specialty courses for the major of industrial engineering, which is also the first compulsory specialty course, laying an essential basis for the cultivation of professional industrial engineering people. Through this course, the students are required to know the forming and development of industrial engineering, build up the general concept of the discipline of industrial engineering, understand the features and purpose of the discipline, have the sense of industrial engineering, learn the knowledge, technology and techniques of methods research, measurement, optimization of onsite management and the ability to solve practical problems with those technologies, laying a good basis for the learn and practice of the following specialty courses.

**Reference book:** Basic Industrial Engineering, Liu Hongwei, Qi Ershi, Chemical Industry Press

**Computer Control Technology (2 credits)**

**Course code**: b2011083

**Suitable majors**: Automation

**Instructor**: Wang Zhifeng, Hu Zhihua, Zheng Pu

**Brief introduction:**

This course is a specialty course with high practicability. Industrial control is an important application area of computer and computer control has been applied widely in different industrial departments and will be applied more and more widely. The objective of this course is to help the students acquire the basic theory, knowledge and technology of computer control, know the hardware structure of computer control system, acquire the concept and A/D and D/A, and have the ability to design, make and commission the hardware system of computer control. The students shall also know the digital PID algorithm used by computer control system, acquire the design, making and commissioning of application software of computer control system and solve the practical problem with those theories, knowledge and skills in industrial practice.

**Reference book:**

Microcomputer Control Technology, Yu Haisheng, Tsinghua University Press

**Prerequisite:** Analog Electric Technology, Digital Electric Technology, Process Control, Modern Control Theory

**Computer Network and Application (2 credits)**

**Course code**: b2011084

**Suitable majors**: Information Management and Information System

**Instructor**: Zhang Jianming

**Brief introduction:**

This course provides an instructive outline for the instruction of network technology and application for the major of information management and information system, introducing the key knowledge which must be acquired by the students, for the references of teachers during instruction.

**Reference book:**

Computer Network and Application, Wu Gongyi, Tsinghua University Press

**Prerequisite:** Basic Program Design (C++)

**Computer Information Safety (2 credits)**

**Course code**: b2011085

**Suitable majors**: Information Management and Information System

**Instructor**: Zhang Jianming

**Brief introduction:**

Computer Information Safety is a specialty course for the major of information management and information system. Through the instruction, the students have a clear idea of the origin of computer information safety, purpose and prevention of computer crime. Based on that, the students shall understand the knowledge like computer hardware safety, software safety, operational system safety, database safety and others, database encryption theory and acquire the prevention method of virus, computer network safety problems and hackers.

**Reference book:**

Information System Safety Theory, Computer Safety Technology, Zhang Jiwen, Liu Yingming, China Water & Power Press

**Prerequisite:** Basic Computer Culture

**Economics (2 credits)**

**Course code**: b2011086

**Suitable majors:** Information Management and Information System

**Instructor:** Liu Lan

**Brief introduction:**

This course is a basic compulsory course for the undergraduates of major of information management and information system. The development of marketing economics of socialism country requires us to know basic knowledge of modern western economics. Economics is a theoretical summary of the rules and features of economic activities of western capitalism countries. It specially analyzes and summaries the operational status of marketing economy and the economic behaviors of government, factory and consumers, proposing some management methods of macro-economy and micro-economy.

**Reference book:**

Brief Introduction to Western Economics, Yin Bocheng, Shanghai People’s Publishing House

**Competitive Informatics (2 credits)**

**Course code**: b2011087

**Suitable majors**: Information Management and Information System

**Instructor**: Li Yan

**Brief introduction:**

Competitive Intelligence is the outcome of more and more serious competition in the global market and the high development of social informationalizaiton. Competitive Informatics is a discipline combining management, economics and modern information management, covering the research and application of related information like competitive environment, competitors and competitive strategy. As a specialty course for the major of information management and information system, the task and purpose of competitive informatics is to help the students understand the concept, essence and functions of competitive intelligence, have the ability to do case analysis with related theories and acquire the basic methods and technologies of collecting, analyzing and processing the competitive intelligence.

**Reference book:**

Introduction to Enterprise’s Competitive Intelligence, Li Guoqiu, Lv Bin, China East Normal University Press

**Prerequisite:** Management, Statistics

**Management of Client Relationship (2 credits)**

**Course code**: b2011088

**Suitable majors**: Information Management and Information System

**Instructor**: Yang Ying

**Brief introduction:**

Management of Client Relationship is an applied discipline for the research and development of enterprise’s client relationship. The customer resource is the only way for an enterprise to realize transaction, cash inflow and make profits. If the enterprise doesn’t have customer resource, its products can’t be exchanged and then all its activities are ineffective.

**Reference book:**

Customer Relationship Management—Theory and Practice, Shao Binjia, Tsinghua University Press

**Control Procedure Design and Application (3 credits)**

**Course code**: b2011089

**Suitable majors**: Automation

**Instructor**: Hu Zhihua, Xu Tao, Tao Lili

**Brief introduction:**

C-language course is a basic computer course for the transmissible general computer programming language which is widely used. C language has a good cross-platform feature and many C-language programs with one standard can be compiled on many platforms, even including some platforms like embedded processor (single chip or MCU) and super computers. Among the controller of general automation system, from single chip, embedded processor to highly-integrated PLC, all the control programs can be designed with C language. This course mainly introduces the design theory of control procedures, realization steps of control algorithm and programming techniques based on C language. The students are required to master the design methods or steps of control programs and improve their control programming ability through the study of the grammar features of C language and have the computer application ability to meet the needs of intelligent manufacturing for the country, laying a good basis for the study of other courses of control theory and system and improving the student’s comprehensive ability. This course is also a compulsory course for the computer application.

**Reference book:**

C Program Design (4th edition), Tan Haoqiang, Tsinghua University Press

**Basic Control Engineering (3 credits)**

**Course code**: b2011090

**Suitable majors**: Mechanic and Electronic Engineering

**Instructor**: An Shuangli

**Brief introduction:**

The objective of this course is to help the students master the basic theory of automatic control, providing tools and methods of scientific research for the students. Through this course, the students are required to know how to do time-domain and frequency-domain analysis of the automatic control system with the classic control theory.

**Reference book:**

Basic Mechanical Engineering Control, Yang Shuzi, Huazhong University of Science and Technology Press

**Prerequisite:** Integral Transformation, Engineering Mechanics, Calculus

**Hydrodynamics and Heat Transferring (2 credits)**

**Course code**: b2011091

**Suitable majors**: Material Formation and Control, Mechanical Engineering

**Instructor**: Jiang Xin

**Brief introduction:**

Through this course, the students are required to have basic knowledge of fluid balance, movement rules and energy conversation and transformation rules, master the basic theory, knowledge of heat transferring and the basic heat transferring computing ability. The students are also required to learn to solve practical problems with basic rules, have the ability of problem analysis and innovation, laying a necessary basis for the study of following courses and scientific research and engineering work in the future.

**Reference book:**

Basic Pyrology and Hydrodynamics, China Water & Power Press

**Prerequisite:** Advanced Mathematics, Theoretical Mechanics, Material Mechanics

**Mould Manufacturing (2 credits)**

**Course code**: b2011092

**Suitable majors**: Material Formation and Control

**Instructor**: Yang Haoquan

**Brief introduction:**

Through this course, the students are required to have the necessary knowledge and technology of the mould design and manufacturing, understand the different requirements of manufacturing methods on mould structure, so as to improve the students’ ability to analyze the mould structure technology and design mould reasonably. The students shall also have the ability to carry out the mould manufacturing technical works and organize the management of mould manufacturing.

**Reference book:**

Mould Manufacturing Technology, Fu Jianjun, China Machine Press

**Prerequisite:** Basic Mechanic Manufacturing, Special Processing Technology

**Enterprise Program Development (2 credits)**

**Course code**: b2011093

**Suitable majors**: Information Management and Information System

**Instructor**: Yang Jinghui, Li Yan

**Brief introduction:**

Java EE is the main-stream framework technology for the development of enterprise Web applications, which is one of the two core framework technology as the MS.NET of Microsoft for the nowadays enterprise program development. This course systematically introduces the system and structure of Java EE, the mainstream application server and integrated development tools of Java EE. The main contents include Java EE framework core structure, application server, integrated development tool, Servlet component programming, application processing programming, response processing programming, session tracking programming, Servlet Context object and application, filter processing, monitor processing, JSP, EL and JSTL, JNDI service and programming, JDBC service programming, JavaMail programming and JavaEEMVC mode structure application.

**Reference book:**

JAVAEE Enterprise Application Development Cases (for the undergraduates of computer majors in 21th century), Lv Haidong, Zhang Kun, Tsinghua University Press

**Prerequisite:** Program Design and Algorithm, Basic Database Application, Basic Program Design

**Enterprise Information System and Application (2 credits)**

**Course code**: b2011094

**Suitable majors**: Information Management and Information System

**Instructor**: Yang Ying

**Brief introduction:**

Enterprise Information System refers to an internal information system of the enterprise with a process of information integration and organization under the conditions that the different departments of the enterprise share information with one common database. The enterprise information system also covers the contents like BPR, ERP, MES, SCM, BI and EC. Based on the EIS concept, the course understands the business needs and the strategic alliance sense of the enterprise, organizes the instruction with the experimental instructional features with international and domestic famous ERP software through the project execution and methodology, and cultivates the senior professional talents for the major of information management and information system.

**Reference book:**

Enterprise Information System and Application, Chen Guoqing, Tsinghua University Press

**Prerequisite:** Management Information System

**Introduction to Enterprise Strategy (1 credit)**

**Course code**: b2011095

**Suitable majors**: Industrial Engineering

**Instructor**: Xia Yanchun, Nie Li, Pan Fangyu

**Brief introduction:**

This course is a selective specialty course for the major of industrial engineering, which is also a comprehensive course with clear orientation. This course is to improve the students’ ability of strategy analysis, strategy making and strategy practice. This course requires the students to fully understand and get familiar with the basic concepts, theory, analysis methods or tools of enterprise strategy management and understand the enterprise strategy management process and its influential elements so as to solve different kinds of problems of enterprise strategy management.

**Reference book:**

Enterprise Strategy Management—Theory and Cases (2nd edition), Yang Xihuai, Higher Education Press

**Auto CAD/CAM (2 credits)**

**Course code**: b2011096

**Suitable majors**: Traffic and Transportation

**Instructor**: Yao Ling

**Brief introduction:**

This course introduces the use of common auto design software, laying a good basis for the qualification examination.

**Reference book:**

Self-edited textbook, Instructional Research Group of Vehicle Engineering, Instructional Research Group of Vehicle Engineering

**Prerequisite:** Engineering Drawing

**Structure of Auto Chassis (3 credits)**

**Course code**: b2011097

**Suitable majors**: Traffic and Transportation

**Instructor**: Zhang Xian

**Brief introduction:**

This course is a core specialty course for the major of auto manufacturing, with the purpose to help the students master the basic structure, working theory and maintenance theory of auto chassis. This course tries to introduce the new technologies, new materials of modern auto chassis scientifically so as to help the students understand the driving theory of the auto.

**Reference book:**

Structure of Auto Chassis, Chen Jiarui

**Prerequisite:** Engine Structure

**Auto Electric Control Technology (3 credits)**

**Course code**: b2011098

**Suitable majors**: Traffic and Transportation

**Instructor**: Zhou Ping

**Brief introduction:**

This course combines the contents of structure, working theory and maintenance of auto electric control system together, systematically introduces the general structure and working theory of modern auto electric control system, including the electronic fuel injection system, electronic ignition system, automatic transmission control system, ABS control, Anti-slip control, steering control, suspension control, auto CAN bus control, auto theft proof control and auto cruise control and others, taking modern cars as typical research objects.

**Reference book:**

Auto Electric Control Technology, Li Chunming, China Machine Press

**Prerequisite:** Auto Engine Structure

**Auto Electric Appliance (2 credits)**

**Course code**: b2011099

**Suitable majors**: Traffic and Transportation

**Instructor**: Zhou Ping

**Brief introduction:**

This course introduces the structure, theory and related practical operational skills of modern auto electric appliances. The course contents include nine parts: auto storage battery, auto AC electricity generator and its adjustor, auto starter, ignition system, lighting and signal device, meter and auxiliary electric appliance, auto air conditioner, electronic fuel injection system of the engine, auto electric appliance bus.

**Reference book:**

Auto Electric Appliance, Lin Yongcheng, Peking University Press

**Prerequisite:** Auto Engine Structure

**Auto Engine Structure (2 credits)**

**Course code** b20111100

**Suitable majors**: Traffic and Transportation

**Instructor**: Zhang Xian

**Brief introduction:**

This course is a basic specialty course for the major of automobile. This course taking typical auto engine as examples, introduces crank and rod mechanism, valve system, lubricant system, cooling system, gasoline engine and diesel engine. Besides that, the students are required to mater the main subsystems of the engine and the structure or working theory of components, the general rules of engine structure and the installation relationship between different components, laying a good basis for the following specialty courses.

**Reference book:**

Auto Engine Structure, Chen Jiarui, China Machine Press

**Introduction to Auto Laws and Regulations (2 credits)**

**Course code**: b2011101

**Suitable majors**: Traffic and Transportation

**Instructor**: Zhang Xian

**Brief introduction:**

This course introduces the deep influences of auto laws and regulations on the development of the auto industry, defines the intension and extension concept of the auto laws and regulations according to the current status of China, and explains the deficiency and perfection measures of the auto law and regulation system by learning from the advanced experience of countries with developed auto industry.

**Reference book:**

Self-edited Textbook, Instruction and Research Group of Vehicle Engineering, Instruction and Research Group of Vehicle Engineering

**Auto Theory (3 credits)**

**Course code**: b20111102

**Suitable majors**: Traffic and Transportation

**Instructor**: Ling Qingzhi

**Brief introduction:**

This course analyzes the main use performances of the auto related to auto dynamics, including dynamics, fuel economy, braking, operation stableness, running smoothness and possibility and introduces some principles for the selection of auto design parameters based on the meeting those auto performance requirement, like the selection of auto engine power, the determination of transmission ratio of the transmission system, distribution of the brake’s braking force, suspension parameter, position of the gravity center, tyre type, the determination of geometric parameter and others.

**Reference book:**

Auto Theory, Yu Zhisheng, Tsinghua University Press

**Prerequisite:** Auto Engine, Chassis Structure

**Auto Design (2 credits)**

**Course code**: b2011103

**Suitable majors**: Traffic and Transportation

**Instructor**: Jiang Miaofan

**Brief introduction:**

This course gives an overall and detailed explanation on the main system of the auto chassis and the auto body like the clutch, universal driving device, driving axle, suspension, steering system, brake and others from the perspective of structure design, parameter selection and strength analysis. This course also uses the design cases of auto power train matching to introduce the detailed application of auto design methods and theories.

**Reference book:**

Auto Design, Zhang Binli, China Machine Press

**Prerequisite:** Auto Theory

**Auto Manufacturing Process Control (2 credits)**

**Course code**: b2011104

**Suitable majors**: Traffic and Transportation

**Instructor**: Zhang Xian

**Brief introduction:**

Auto Manufacturing Process Control arranges the quality control of the manufacturing process systematically, controls the elements influencing the process quality directly or indirectly, makes and executes the control plan so as to ensure the process quality.

**Reference book:**

Self-edited Textbook, Instruction and Research Group of Vehicle Engineering, Instruction and Research Group of Vehicle Engineering,

**Auto Testing (2 credits)**

**Course code**: b2011105

**Suitable majors**: Traffic and Transportation

**Instructor**:

**Brief introduction:**

This course introduces the development of auto testing, basic theory and methods of auto testing, feature analysis and evaluation methods of the testing devices, transmission and processing of common sensor and signal, theory and structure of common recording device, application of microcomputer in auto testing, analysis and processing of testing data and others.

**Reference book:**

Auto Testing, Zhao Lijun, China Machine Press

**Auto Manufacturing Technology (2 credits)**

**Course code**: b2011106

Suitable major: Traffic and Transportation

**Instructor**: Zhang Xian

**Brief introduction:**

The primary purpose of the course is to help the students understand how to improve the product quality during the learning process. With the development of scientific technology, the requirements on the quality of the auto products rises and the product quality is closely related to the processing quality and assembly quality of the components. The other important task is to research how to improve the production efficiency, i.e. how to complete the mechanic processing or assembling process with the methods, devices or equipment with high productivity.

**Reference book:**

Auto Manufacturing Technology, Xie Yongdong, China Machine Press

**Embedded Control System Application (2 credits)**

**Course code**: b2011107

**Suitable majors**: Automation

**Instructor**: Xu Tao, Hu Zhihua, Wang Zhenhua and others

**Brief introduction:**

The main purpose of the course is to help the students know the basic concept, feature, category of the embedded system, and master the basic methods and application of the hardware and software design of the embedded system. The course pays attention to cultivate the students’ practical application ability and innovation ability with the lecture and experiments so as to meet the instructional purpose of “learning embedded system and use embedded system”. The practical instruction will be completed during the course of Secondary Project (Embedded System Training).

**Reference book:**

Embedded System and Application—Based on the Design and Development of Cortex-M3 core Based and STM32F103 series Micro-controller System, Chen Qijun, Tongji University Press

**Prerequisite:** Control Program Design (C Language), Single-chip Technology, Analog Electric Technology, Digital Electric Technology

**Human Factors Engineering (2 credits)**

**Course code**: b2011108

**Suitable majors**: Industrial Engineering

**Instructor**: Wang Xiaogang

**Brief introduction:**

Human Engineering B is a basic compulsory course for the major of industrial engineering. The purpose of this course is to help the students master the human features, provide necessary data or requirements on engineering design, work arrangement, environmental arrangement and others from the perspective of matching the human physiological and psychological features, makes a reasonable practical plans for the system of human, machine and environment, so as to improve the productivity, safety, comfortableness and effectiveness by providing a comfortable, healthy, safe and reliable working environment for the worker and improving the working ability of the workers. This course also provides necessary basic knowledge for the study of related courses. It also pays attention to progressively cultivate the students’ logical reasoning ability, special imagination ability and practical ability through all instructional steps and cultivate their ability to analyze and solve problems with the learned knowledge.

**Reference book:**

Human Engineering (3rd edition), Ding Yulan, Peking University Press of Science and Engineering

**Business Intelligent Methods and Application (2 credits)**

**Course code**: b2011109

**Suitable majors**: Information Management and Information System

**Instructor**: Luo Shoucheng

**Brief introduction:**

This course introduces the definition, methods and application of business intelligence, cultivates the students’ ability to analyze information, acquire knowledge and support management decision with a large amount of data in the informationalized society.

**Reference book:**

Business Intelligent Methods and Application, Chen Guoqing, Tsinghua University Press

**Prerequisite:** Information Resource Management

**Manufacturing Plan and Control (2 credits)**

**Course code**: b2011110

**Suitable majors**: Industrial Engineering

**Instructor**: Wang Xiaogang, Nie Li, Xia Yanchun

**Brief introduction:**

This course is a specialty course for the major of industrial engineering. This course systematically introduces the basic concept, theory and methods of manufacturing plan and control, helps the students know the composition of enterprise manufacturing system, manufacturing type, organization of manufacturing process, basic concept of manufacturing plan and control, master the need forecasting and analysis of manufacturing plan and control, combine the methods of manufacturing plan, main manufacturing plan, capacity plan and workshop manufacturing plan and control. The students shall also learn to master the project progress plan and control of single ordering production, know the basic theory and methods of timely manufacturing plan and control, compile the manufacturing plan with application software including the forecast and input of order data, construction of product BOM and others.

**Reference book:**

Manufacturing Plan and Control, Chen Rongqiu, Huazhong University of Science and Engineering Press

**Prerequisite:** Operation Research

**Production Line Equipment and Commissioning Technology (2 credits)**

**Course code**: b2011111

**Suitable majors**: Traffic and Transportation

**Instructor**: Zhang Xian

**Brief introduction:**

This course covers contents widely from basic mechanic, pneumatic, electric and sensing and testing technology to complicated stepping, variable frequency, servo, industrial network and configuration control. The contents are arranged from simple to difficult, covering necessary theoretical knowledge and practical knowledge.

**Reference book:**

Self-edited Textbook, Instruction and Research Group of Vehicle Engineering, Instruction and Research Group of Vehicle Engineering

**Production Operation and Management (3 credits)**

**Course code**: b2011112

**Suitable majors**: Information Management and Information System

**Instructor**: Li Yan

**Brief introduction:**

This course is an important specialty course for the major of information management and information system. It mainly introduces the theory of modern production management and latest achievements. It helps the students understand the contents of production management, the production management thoughts and methods of manufacturing field and service field. This course also systematically introduces the new methods and ideas with large influence in the field of production operation management and the organization of production line, methods of work research, methods of production and operational plan, MRP, MRP II and so on.

**Reference book:**

Introduction to Operational Management (English Version), Nigel Slack, Alistair Brandon-Jones, Robert Johnston, Publishing House of Electronics Industry

**Prerequisite:** Management

**Experiment Design (1 credit)**

**Course code**: b2011113

**Suitable majors**: Industrial Engineering

**Instructor**: Pan Fangyu

**Brief introduction:**

This course introduces the keys and features of different experimental design methods and their corresponding statistical analysis conditions, methods, steps and result explanations, and the basic knowledge and techniques for the acquisition of investigation data. The course is to cultivate the student’s ability to design and organize the experimental plans, and analyze or process the experimental data. Through this course, the students are required to improve their understanding of the basic theories of this course and their ability to solve related problems scientifically.

**Reference book:**

Experimental Design and Data Processing, Liu Zhenxue, Huang Renhe, Chemical Industry Press

**Prerequisite:** Engineering Statistics

**Market Investigation and Forecast (2 credits)**

**Course code**: b2011114

**Suitable majors**: Information Management and Information System

**Instructor**: Yang Jinghui

**Brief introduction:**

Market Investigation and Forecast is an important branch of modern marketing theory, which is also a core course of the management major. It is also a new interdisciplinary subject combining marketing, statistics, forecasting, system engineering, and applied mathematics. Market forecast is a prerequisite and basis for the enterprise to make correct business decisions, and the market investigation also provides a basic condition for the scientific market forecast.

**Reference book:**

Market Investigation and Forecast, Lv Xiaoping, Science Press

**Prerequisite:** Western Economics

**Data Warehouse and Data Mining (2 credits)**

**Course code**: b2011115

**Suitable majors**: Information Management and Information System

**Instructor**: Luo Shoucheng

**Brief introduction:**

This course is a selective course for the major of computer software and theory, computer technology.

**Reference book:**

Data Mining and Knowledge Discovery, Li Xiongfei, Higher Education Press

**Prerequisite:** Management Cost Accounting

**Data Structure and Algorithm (2 credits)**

**Course code**: b2011116

**Suitable majors**: Information Management and Information System

**Instructor**: Yang Wenjing, He Haihui, Du Yi, Li Liping, Zhang Shiming, Xue Jianxin

**Brief introduction:**

This course introduces the composition method of data and algorithm of data structure. The key contents are the structure and storage structure, related algorithm and basic time and special analysis of all kinds of typical data, including linear table and its derivative structure (stack, queue, array, multi-dimensional array), tree diagram and the typical algorithm of searching and internal sequencing). The key point of this course is to let the students master the standard computing design technology and improve their thinking ability based on the program design knowledge.

**Reference book:**

Data Structure (C Language), Yan Weimin, Wu Weimin, Tsinghua University Press

**Prerequisite:** Basic Program Design

**Basic Database Application (2 credits)**

**Course code**: b2011117

**Suitable majors**: Industrial Engineering

**Instructor**: Wang Xiaogang, Liu Kai

**Brief introduction:**

This course is to help the students understand the basic theoretical knowledge of database, mater the operational skills like construction of database, creating table, search, making statements and web pages, and know the process of developing database application system.

**Reference book:**

Database System and Application, Li Zi, Science Press

**Database Theory and Application (3 credits)**

**Course code**: b2011118

**Suitable majors**: Information Management and Information System

**Instructor**: Zhang Jianming

**Brief introduction:**

Database technology starts from 1960s and has a history of over 40 years. As the most effective way for the data management, it promotes the development of computer applications greatly. Nowadays, database technology and system have become the core technology and important basis for the information infrastructures. Thus, the learning and understanding of basic concept and theory of database and mastering the database design have an important role in the construction of information management and information system.

**Reference book:**

Database Application and Design, Cui Wei, Tsinghua University Press

**Prerequisite:** Basic Computer Culture

**Numerical Control Machine Tool and Programming (2 credits)**

**Course code**: b2011119

**Suitable majors**: Mechanical and Electronic Engineering

**Instructor**: An Shuangli, He Yu’an

**Brief introduction:**

From the perspective of Numerical Control machine tool, this course introduces the working theory and structural features of the Numerical Control machine tool, basic theoretical knowledge about the composition and functions of Numerical Control system and servo system, and the application knowledge about the selection and use of Numerical Control machine tool. The students are also required to complete programming of basic processing.

**Reference book:**

Numerical Control Machine Tool and Programming, Liu Shuhua, China Machine Press

**Prerequisite:** Basic Mechanical Engineering

**Numerical Control Machine Tool and Programming (3 credits)**

**Course code**: b2011120

**Suitable majors**: Mechanical Engineering

**Instructor**: Yao Guoqiang, Wei Shuangyu

**Brief introduction:**

This course introduces the related technology of Numerical Control machine tool and programming. It introduces the basic knowledge of NC machine tool and programming technology comprehensively in accordance with the modern advanced manufacturing technology’s requirements on the student’s knowledge, from simple to difficult. The contents include the introduction to NC technology, mechanic structure of Numerical Control machine tool, NC Control system, NC processing programming basis and common programming instructions, NC machine tool programming, programming of NC milling machine and processing center, FANUC 0i system NC processing simulation and experimental system. Through this course, the students are required to master the structure of NC machine tool and NC programming technology and have the ability to complete NC programming independently.

**Reference book:**

NC Machine Tool and NC Programming, Self-edited

**Prerequisite:** Mechanic Manufacturing Technology, Editable Controller

**Digital Technology (2 credits)**

**Course code**: b2011121

**Suitable majors**: Mechanical and Electronic Engineering

**Instructor**: He Yu’an, Yang Shuzhen

The course is to help the students understand the related knowledge of NC system, mater the composition structure and working theory of NC system, get familiar with the operation and programming of NC system, especially the starting and commissioning, connecting, parameter adjusting, PLC program modification of typical system (SIEMENS 802S and FANUCOi System) based on experiments and practices.

**Reference book:**

NC System, Fu Dawei, Chemical Industry Press

**Prerequisite:** NC Machine Tool and Programming, Machine Tool Electric Control

**Fault Analysis and Maintenance of NC Facility (2 credits)**

**Course code**: b2011122

**Suitable majors**: Mechanical and Electronic Engineering

**Instructor**: Wang Zhenhua, He Cheng

**Brief introduction:**

This course researches on the fault diagnosing technology of mechanical facility including the basic concepts theories of fault diagnose like the basic concept of fault diagnosing technology of mechanic facility, mechanic physical signal analysis, mechanic status identification method, invalidation form of mechanic components, and the fault diagnosing technology of typical facility and main transferring components. Through this course, the students are required to acquire the basic theory, special knowledge and basic technologies of fault diagnosing technology of mechanic facility, master the using methods of common diagnosing facility system and have the ability to diagnose fault of mechanic facility, laying a good basis for the related engineering technological work.

**Reference book:**

NC Machine Tool Fault Diagnosing and Maintenance, Wang Kaifu, China Machine Press

**Prerequisite:** Calculus, Electric Engineering, Electric Technology, NC Machine Tool and Programming

**Digital Electric Technology (4 credits)**

**Course code**: b2011123

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Feng Rongda, Dou Jianfang

**Brief introduction:**

Microcomputer Theory and Application is a basic specialty course, with the objective to help the students master the basic composition of microcomputer system, data expression of microcomputer, functions, working theory and peripheral interface of different hardware components of microcomputer. This course lays a basis for the further study of senior language program design, single chip machine and PLC.

**Reference book:**

Microcomputer Theory and Interface Technology, Zhou Peiling, Publishing House of Electronics Industry

**Prerequisite:** Digital Circuit

**Digital Photo Processing (3 credits)**

**Course code**: b2011124

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Feng Rongda, Dou Jianfang

**Brief introduction:**

This course is a basic specialty course for the major of Measurement and Control Technology and Instrumentation. The purpose of the course is to help the students master the basic theory and methods of test and experimental data processing, estimate the tested values accurately, evaluate the measurement results scientifically and objectively, and do reasonable design for the measurement and experimental methods in accordance to the precision requirements of the tested objects, laying a theoretical basis for the following specialty courses and experimental courses.

**Reference book:**

Error Theory and Data Processing, Fei Yetai, China Machine Press

**Prerequisite:** Advanced Mathematics, Liner Algebra

**Servo Control Technology (2 credits)**

**Course code**: b2011125

**Suitable majors**: Automation

**Instructor**: Wang Zhenhua, Hu Zhihua, Xu Tao and others

**Brief introduction:**

This course introduces the closed loop AC servo driving technology, DSP AC servo system technology, PLC AC servo system technology, onsite-bus-based movement control technology and movement control card and other representative new technologies, analyzing the testing technology and testing parts of modern AC servo movement control system, the analysis and simulation of systematic math model.

**Reference book:**

AC Servo Movement Control System, Shu Zhibin, Tsinghua University Press

**Prerequisite:** AC Speed Regulation System

**Plastic Formation Theory (2 credits)**

**Course code**: b2011126

**Suitable majors**: Material Formation and Control, Mechanical Engineering

**Instructor**: Yuan Wenjing

**Brief introduction:**

This course introduces the basic theory of metal plastic forming and the metalicity theory of metal plastic deformation, explains the basic knowledge of analysis of plastic deformation mechanics and the slab method and slip line method commonly used in plastic processing sequence analysis. The purpose of the course is to help the students understand the basic knowledge of metal plastic deformation and master the basic theory and mechanics analysis of metal plastic deformation, so as to have a basic idea of the making and optimization of plastic processing technical parameters.

**Reference book:**

Metal Plastic Formation Theory, Li Rao, China Machine Press

**Prerequisite:** Material Mechanics

**Special Processing Technology (2 credits)**

**Course code**: b2011127

**Suitable majors**: Material Formation and Control

**Instructor**: Yang Haoquan

**Brief introduction:**

This course introduces the basic theory, instruments, technological rules, main features and application scope of special processing methods like EDM, WEDM, ECM, laser processing, Electron beam and ion beam processing and ultrasonic machining. The course also has an experimental session, providing related theoretical knowledge with experiments and helping the students master the theory of special processing technologies.

**Reference book:**

Special Processing, Liu Jingchun, China Machine Press

**Prerequisite:** Basic Mechanic Manufacturing

**Photo Testing Technology (2 credits)**

**Course code**: b2011128

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Feng Rongda, Dou Jianfang

**Brief introduction:**

This course introduces the general theory and methods of measurement and control bus and instrument communications focusing on the communication technology of measurement and control system and instrument, including the basis of data communication, inter-chip bus communication technology, inner bus communication technology, systematic bus communication technology, standard bus communication technology, onsite bus communication technology, network communication technology, instrument communication technology and wireless communication technology.

**Reference book:**

Communication Technology of Measurement and control Bus and Instrument, Wang Xianpei, China Machine Press

**Prerequisite:** Electric Measurement

**Microcomputer Theory and Application (2 credits)**

**Course code**: b2011129

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Wang Sujuan

**Brief introduction:**

This course mainly introduces the basic composition and its features of the intelligent instrument, the microcomputer system design of intelligent instrument and extensive interface methods, human-computer interface technology of intelligent instrument, data collection system design of intelligent instrument, interface technology of output and execution device of intelligent instrument, serial communication and parallel communication interface technology of intelligent instrument, intelligent technology of intelligent instrument design and typical cases of intelligent instrument design.

**Reference book:**

Basic Design of Intelligent Instrument, Wang Qi, China Machine Press

**Prerequisite:** Practice of Single Chip Machine Application, Sensor Theory

**Logistics and Supply Chain (2 credits)**

**Course code**: b2011130

**Suitable majors**: Industrial Engineering

**Instructor**: Wang Xiaogang, Pan Fangyu

**Brief introduction:**

This course is to help the students master the concept of logistics system, the analysis, design, management theory and methods of logistics system engineering and have the ability of actual design, improvement and management of manufacturing and management system. The students are also required to apply those theories to non-logistics system.

**Reference book:**

Logistics Engineering, Qi Er’shi, Tianjin University Press

**Error Theory and Data Processing (2 credits)**

**Course code**: b2011131

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Wang Sujuan, Qing Qing

**Brief introduction:**

This course combines the latest automatic hardware technology and application software technology together from the perspective of promotion of automatic technology’s comprehensive application, and builds up a rapid integrated platform of automatic comprehensive application technology for the students through practical training. The course contents include the programmable controller application technology, touch screen application technology, industrial control PC application technology and computer configuration software application technology.

**Reference book:**

Comprehensive Application Technology of Automatic Control: Comprehensive Application of Embedded Controller, PLC, Frequency Transformer, Touch Screen, Industrial Personal Computer and Configuration Software (2nd edition), Zhao Gang, China Machine Press

**Prerequisite:** PLC Theory and Application

**System Engineering (2 credits)**

**Course code**: b2011132

**Suitable majors**: Industrial Engineering, Information Management and Information System

**Instructor**: Luo Shoucheng, Xia Yanchun

**Brief introduction:**

This course is a selective course for the major of industrial engineering with an open-book examination. As an inter-disciplinary subject starting from mid terms of 20th century, system engineering belongs to the comprehensive engineering technology, which is a collective term for the thoughts, theory, methods and technologies necessary for the large-scale complicated system. With the rapid development of technology and revolutionary changes of the social and economic environment, the systematic problems or management needs become more and more important day by day in actual industrial production and practice. Besides, with the developing technical, social and economic environment, it shows an obvious dynamics and randomness. This problem needs to be solved by systematic analysis methods based on systematic views. Thus, system engineering has become one of the important methodologies of modern industrial engineering. Through this course, the students are required to have an overall and correct system view and master the basic theory or methods to solve practical system problems.

**Reference book:**

System Engineering (3rd edition), Wang Yingluo, China Machine Press

**Computer Modeling and Simulation (3 credits)**

**Course code**: b2011133

**Suitable majors**: Industrial Engineering

**Instructor**: Bai Yuewei, Wang Xiaogang, Nie Li and others.

**Brief introduction:**

Computer Modeling and Simulation is an applied course for the engineering practice, one of the main specialty courses for the department of industrial engineering. Through this course, the students are required to discover key problems in production system with simulation technology and improve productivity and efficiency with the improvement measures.

**Reference book:**

Modeling and Simulation of Manufacturing System, Su Chun, China Machine Press

**Prerequisite:** Industrial Statistics

**Advanced Manufacturing Technology (1 credit)**

**Course code**: b2011134

**Suitable majors**: Industrial Engineering

**Instructor**: Bai Yuewei, Wang Xiaogang

**Brief introduction:**

Through this course, the students are required to know the frontier technologies of modern manufacturing understand the features of modern design technology and advanced manufacturing technology and have an idea of the research status and developing trend of the modern manufacturing technology.

**Reference book:**

Advanced Manufacturing Technology, Li Weiguang, China Machine Press

**Advanced Manufacturing Technology (2 credits)**

**Course code**: b2011135

**Suitable majors**: Mechanical and Electronic Engineering, Mechanical Engineering

**Instructor**: Li Ning, Liu Ping, Yao Guoqiang

**Brief introduction:**

Advanced Manufacturing Technology is a specialty course for the mechanic majors. This course introduces how the manufacturing industry uses information technology, system science, computer technology and other multi-disciplinary technologies to perfect and improve the traditional manufacturing industry and organize the manufacturing process from the perspective of system science. The students are required to know the basic contents, key technologies and latest development of the modern manufacturing technology.

**Reference book:**

Advanced Manufacturing Technology, Chief Editor Wang Longtai, China Machine Press

**Prerequisite:** Basic Mechanic Manufacturing, Mechanic Manufacturing Technology

**Modern Measurement Technology (3 credits)**

**Course code**: b2011136

**Suitable majors**: Industrial Engineering

**Instructor**: Bai Yuewei, Pan Fangyu

**Brief introduction:**

This course is a selective specialty course for the major of industrial engineering (for undergraduates). This course researches on the features and analysis methods of Mechanical Engineering signal, reasonable selection methods of engineering test device and technology of useful information extraction. Through this course, the students are required to master the basic theory, knowledge and techniques of sensor and testing technology, know the dynamic features of testing devices and understand the basic theory of common sensor and conditioning circuit. Based on that, the students shall learn to reasonably select instruments to compose some typical testing systems so as to extract useful information without deformation, laying a good basis for the following courses and related engineering technological work in the future.

**Reference book:**

Testing Technology of Mechanical Engineering, Huang Changyi, China Machine Press

**Modern Engineering Drawing I (3 credits)**

**Course code**: b2011137

**Suitable majors**: Material Formation and Control, Measurement and Control Technology and Instrumentation, Industrial Engineering, Mechanical and Electronic Engineering, Mechanical Engineering, Traffic and Transportation, Information Management and Information System, Automation

**Instructor**: Yuan Qun, Zhang Weiyuan, Wu Jun and others

**Brief introduction:**

The research object of this course is engineering drawing, which expresses the actual production needs in different industries in accordance with the projection theory and related national standards. The engineering drawing is called as “the language of engineering”, which is an important tool for the technical workers to express and communicate their technical thoughts and also an important technical documents for the department of engineering technology.

This course is a basic specialty course for the major of engineering, which researches on the theory and methods of engineering drawing with projection method. The main instructional purposes are as follows:

1. Learn the theory and application of positive projection method.
2. Cultivate the students’ engineering drawing skills.
3. Learn the methods of reading engineering drawing.
4. Learn the special imagination ability and special analysis ability.
5. Learn the drawing generation ability with computer technologies.

**Reference book:**

Descriptive Geometry and Engineering Drawing, Zhu Hui and others, Shanghai Science and Technology Press

**Modern Engineering Drawing II (3 credits)**

**Course code**: b2011138

**Suitable majors**: Material Formation and Control, Measurement and Control Technology and Instrumentation, Mechanical and Electronic Engineering, Mechanical Engineering, Traffic and Transportation

**Instructor**: Yuan Qun, Zhang Weiyuan, Wu Jun and others

**Brief introduction:**

This course introduces the expression of mechanic standard components and common components, reading and making of component working drawings and assembly drawings based on the Modern Engineering Drawing I (including projection method, three-view drawing, ensemble and expression).

The main instructional purposes are as follows:

1. Learn the expression of standard components or common components like bolts, gears, bearing shafts and others.
2. Learn the expression of size and geometric difference and surface roughness.
3. Learn the expression of component working drawing.
4. Learn the expression of assembly working drawing.

**Reference book:**

Descriptive Geometry and Engineering Drawing, Zhu Hui and others, Shanghai Science and Technology Press

**Prerequisite:** Modern Engineering Drawing I

**Modern Control Theory (2 credits)**

**Course code**: b2011139

**Suitable majors**: Automation

**Instructor**: Zhou Jing, Zhang Shuping, Hu Zhihua and others

**Brief introduction:**

Modern Control Theory is a control theory based on the state space method, an important part of the automatic control theory. Through this course, the students are required to master the basic concepts and analysis methods of modern control theory. The course contents include the state space, controllability, observability, Lyapunov Stability, state feedback, state observer and pole assignment, laying a theoretical basis for the study of other sub-discipline of the automation.

**Reference book:**

Basic Modern Control Theory, Sun Binda, Liang Huibing, China Machine Press

**Prerequisite:** Automatic Control Theory, Advanced Mathematics, Linear Algebra, Circuit, Electric Technology

**Modern Design Methods (2 credits)**

**Course code**: b2011140

**Suitable majors**: Industrial Engineering

**Instructor**: Pan Fangyu, Nie Li, Wang Xiaogang

**Brief introduction:**

Modern Design Methods is a specialty course for the undergraduates of industrial engineering. This course uses new theory and methods of engineering design to optimize the computing results in the way of computer design, so as to realize high efficiency and automation of the design process. Modern design method is the extension and development of traditional design methods, a product of the comprehensive application of related scientific technology in the field of design, bringing essential changes to the traditional design methods. The mechanic products designed with the modern design methods have a higher quality, lower consumption of raw materials and cost, so as to meet the purpose of economic profit improvement.

**Reference book:**

Instruction of Modern Design Methods, Sun Xinmin, Posts & Telecom Press

**Modern Design Theory and Method (2 credits)**

**Course code**: b2011141

**Suitable majors**: Mechanical Engineering

**Instructor**: Bao Jun, Liu Xiaohang, Cai Chilan

**Brief introduction:**

Through this course, the students can have an overall understanding of this new discipline and have a deep understanding of the important modern design theory and methods, like design optimization, reliable design, finite element method, green design, industrial modeling design and others. The students shall learn to solve practical engineering problems with the above knowledge so as to explore their design thoughts and improve their design skills and innovative design ability.

**Reference book:**

Modern Design Theory and Methods, Chief Editor Zhang E, Maimai Timing, Science Press

**Prerequisite:** Advanced Mathematics, Probability and Mathematical Statistics, Theoretical Mechanics, Mechanic Design, Mechanic Theory.

**Project Management (Bilingual) (2 credits)**

**Course code**: b2011142

**Suitable majors**: Industrial Engineering

**Instructor**: Xia Yanchun

**Brief introduction:**

Project Management is an applied course for the engineering practice. The students can understand the concept of project process and project management process, project organization and management, obligations of project manager, and master different basic methods of project management.

**Reference book:**

Instruction of Project Management (Bilingual) (5th edition), written by Eric Lakson and Clifford Gray, translated by Wang Liwen, Xu Tao and Zhang Yang, Posts & Telecom Press

**Project Management (2 credits)**

**Course code**: b2011143

**Suitable majors**: Material Formation and Control, Mechanical and Electronic Engineering, Mechanical Engineering

**Instructor**: Xia Yanchun, Yang Jinghui

**Brief introduction:**

Project Management is an applied course for the engineering practice. The students can understand the concept of project process and project management process, project organization and management, obligations of project manager, and master different basic methods of project management.

**Reference book:**

Project Management, Luo Xun, Peking University Press of Science and Engineering

**Introduction to New Energy Automobile (2 credits)**

**Course code**: b2011144

**Suitable majors**: Traffic and Transportation

**Instructor**: Zhou Ping

Brief introduction;

Through this course, the students learn the advanced technology of dynamic control and driving of automobiles consuming uncommon fuels as driving source (or the automobiles consuming common fuels with new power devices).

**Reference book:**

Automobiles with Clear Fuel, Ling Jingyao, China Machine Press

**Information Index (2 credits)**

**Course code**: b2011145

**Suitable majors**: Information Management and Information System

**Instructor**: Li Yan

**Brief introduction:**

This course introduces the basic concept, historical background, theory and practice of information organization, stresses their understanding of the use of content tables, index and booklist for the undergraduates with the major of information management and information system. This course cultivates the students’ understanding of the information organization through explanation of resource description, metadata, controlled vocabulary, category and social bookmarks.

**Reference book:**

Index of Information Organization, Ma Zhanghua, Tsinghua University Press

**Prerequisite:** Information Resource Management

**Information Statistics and Analysis Technology (2 credits)**

**Course code**: b2011146

**Suitable majors**: Information Management and Information System

**Instructor**: Yang Ying

**Brief introduction:**

The main purpose of this course is to do technical processing and analysis research of the statistical documents with the data processing and analysis methods and computer technology. The course introduces the application of statistical data processing and analysis software—SPSS (the original statistical software for social science)

**Reference book:**

SPSS Statistics and Analysis—From Basis to Practice, Luo Yingting and others, Publishing House of Electronics Industry

**Prerequisite:** Applied Statistics

**Information System Analysis and Design (2 credits)**

**Course code**: b2011147

**Suitable majors**: Information Management and Information System

**Instructor**: Yang Jinghui

**Brief introduction:**

This course is a compulsory core course for the major of information management and information system, taking information system as the main research object, the system development as the main instructional contents, the theoretical instruction on practice as the main instructional purpose. This course covers the introduction of information system engineering, the planning and development, analysis and design of information system, the object-oriented analysis and design method, the execution, operation and management of information system, the latest development of information system. Through case study and group discussion, the course tries to cultivate the students’ ability to learn new knowledge, analyze the problems comprehensively and apply the learned knowledge. Through this course, the information technical worker in the future can master the necessary basic knowledge or skills for the construction of information system.

**Reference book:**

Analysis and Design of Information System, Guang Kongwu, Wang Xiaomin, Tsinghua University Press

**Prerequisite:** Management Information System, Basic Program Design, Database Theory and Application

**Project Management of Information System (2 credits)**

**Course code**: b2011148

**Suitable majors**: Information Management and Information System

**Instructor**: Yang Jinghui

**Brief introduction:**

This course introduces the contents of project management of information system, including range management, time management, cost management, quality management, resource management, communication management, risk management, purchasing management and five processes of project management (starting, planning, implementation, controlling and ending) and explains the process, methods, technologies and tools related to different fields of knowledge. This course strengthens the feature of information system in five processes and nine big knowledge models, and shares the common contents with general projects meanwhile. Besides, the course analyzes the construction and evaluation of information system project, configuration management, need management and the effective planning, use and project group management of internal or external resources of information system project management.

**Reference book:**

Project Management of Information System, Zuo Meiyun, Tsinghua University Press

**Prerequisite:** Management Information System

**Information Resource Management (2 credits)**

**Course code**: b2011149

**Suitable majors**: Information Management and Information System

**Instructor**: Li Yan

**Brief introduction:**

Information Resource Management is a new knowledge field appearing at the end of 1970s or start of 1980, with the purpose to improve organizational efficiency and competitiveness with new sense and perspective of management. It is also a discipline researching the rules and applications of human’s information management activity. Its core thought is that the information resources are deemed as the strategic resource of one country and one organization, a revolutionary and development tool and those resources shall be managed and applied well. Based on Management, it takes information and related resources as research object, takes math and ICT as tools, takes policy, laws and economy as measures, with the purpose of application, strengthens the management of information activity and information process with more dynamics.

**Reference book:**

Information Resource Management, Zhang Kai, Song Kezhen, Zhou Puxiong, Tsinghua University Press

**Prerequisite:** Management

**Information Organization (2 credits)**

**Course code**: b2011150

**Suitable majors**: Information Management and Information System

**Instructor**: Yang Ying

**Brief introduction:**

This course introduces the basic concept, historical background, theory and practice of information organization, stresses their understanding of the use of content tables, index and booklist for the undergraduates with the major of information management and information system. This course cultivates the students’ understanding of the information organization through explanation of resource description, metadata, controlled vocabulary, category and social bookmarks.

**Reference book:**

Index of Information Organization, Ma Zhanghua, Tsinghua University Press

**Prerequisite:** Management, Information Resource Management

**Virtual Prototyping and Practice (2 credits)**

**Course code**: b2011151

**Suitable majors**: Mechanical Engineering

**Instructor**: Cui Li

**Brief introduction:**

Virtual Prototyping takes ADAMS software as platform, introduces the application of VP in kinematic analysis, dynamics analysis, mechanism design and simulation. As for the mechanic majors, the advanced modeling/simulation technology, modern information technology, advanced design and manufacturing technology and modern management technology are combined together and applied to the design of all life period and all system of complicated products.

**Reference book:** Virtual Prototyping and ADAMS Application Cases, Guo Weidong, Beihang University Press

**Prerequisite:** Theoretical Mechanics

**Hydraulic and Pneumatic Power Transmission (2 credits)**

**Course code**: b2011152

**Suitable majors**: Material Formation and Control, Mechanical Engineering, Traffic and Transportation

**Instructor**: Yuan Wenjing, Yang Haoquan, Jia Lixin

**Brief introduction:**

Through this course, the students are required to master the basic knowledge and professional technology of hydraulic and pneumatic power system, have the ability to analyze and apply the hydraulic and pneumatic power system, laying a good basis for the application of hydraulic and pneumatic technology in the future. The main contents of the course are as follows:

1. learn the necessary theoretical knowledge of hydraulic and pneumatic power transmission
2. Learn the structure, working theory, performance and proper selection of hydraulic and pneumatic power component
3. Learn the working theory and features of hydraulic and pneumatic typical circuit and its reasonable application
4. Read the drawings of hydraulic and pneumatic power system for common facility.

**Reference book:**

Hydraulic and Pneumatic Power Transmission, Zuo Jianmin, China Machine Press

**Prerequisite:** Calculus, Modern Engineering Drawing, Hydromechanics and Heat Transferring

**Device Communication Interface Technology (2 credits)**

**Course code**: b2011153

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Wang Sujuan

**Brief introduction:**

This course introduces the basic concept of automatic control theory, the math model, structural diagram and signal flow chart of the control system in time domain, complex domain and frequency domain, explains the time domain analysis methods, root-locus method, frequency domain analysis, calibration design and others, laying a good basis for the future study.

**Reference book:**

Automatic Control Theory, Sun Huzhang, China Open University Press

**Applied Statistics (2 credits)**

**Course code**: b2011154

**Suitable majors**: Information Management and Information System

**Instructor**: Luo Shoucheng

**Brief introduction:**

Applied Statistics systematically introduces the basic knowledge and basic technologies of applied statistics, with the practical application of Excel, explains the parameter estimation, hypothesis test, variance analysis, correlation and regression, time sequence analysis, index analysis and other applied statistical methods. This course stress the application and interest of the applied statistics, holds the completeness of the system, and pays attention to the combination of tradition and innovation and the application of statistical theory in practice.

**Reference book:**

Applied Statistics, Pan Hong, Zhang Xiaoyu, Wu Yongmin, Posts & Telecom Press

**Prerequisite:** Probability and Mathematical Statistics

**Optimization and Decision (2 credits)**

**Course code**: b2011155

**Suitable majors**: Industrial Engineering

**Instructor**: Bai Yuewei

**Brief introduction:**

Decision and Optimization is an applied course for the engineering practice. Through this course, the students are able to solve the problem of decision and optimization in flexible manufacturing system and flexible supply chain management with the basic methods of flexible improvement modeling, decision and optimization.

**Reference book:**

Flexible Manufacturing System and Flexible Supply Chain—Modeling, Decision and Optimization, Hua Zhongsheng, Science Press

**Prerequisite:** Operation Research

**Finite Element Analysis and Practice (2 credits)**

**Course code**: b2011156

**Suitable majors**: Mechanical Engineering

**Instructor**: Cui Li

**Brief introduction:**

The suitable object of this course is the undergraduates of Mechanical Engineering or other majors and is a basic selective specialty course for mechanic majors.

Through this course, the students are required to know the basic methods to solve engineering technical problems with finite elements, master the basic theory, using methods and solving steps of finite element method, do analysis of component deformation like axial symmetry component, rod component and thin plate bending, and understand the methods or steps of thermal deformation and thermal stress analysis.

**Reference book:**

Finite Element Method—Theory, Modeling and Application, Du Ping’an and others, Defense Industry Press

**Operation Research (2 credits)**

**Course code**: b2011157

**Suitable majors**: Information Management and Information System

**Instructor**: Luo Shoucheng

**Instructor**:

This course is a basic specialty course for the major of information management and information system. Through this course, the students are required to master the most basic modeling technology, quantitative analysis and most optimized methods of operation research and have the ability to solve practical problems with quantitative methods, laying a good basis and providing necessary tools or methods for the study of the following course.

**Reference book:**

Basic Management Operation Research, Technology and Excel Modeling Practice, Ding Yizhong, Tsinghua University Press

**Prerequisite:** Calculus

**Operation Research (3 credits)**

**Course code**: b2011158

**Suitable majors**: Industrial Engineering

**Instructor**: Bai Yuewei, Wang Xiaogang, Nie Li

**Brief introduction:**

Operation Research is a discipline with the purpose of decision support. Through this course, the students are able to master the qualitative and quantitative methods to analyze the most optimized decision problem based on the Advanced Mathematics, linear algebra and probability statistics and have the ability to analyze and solve the most optimized decision problems, laying a solid basis for the study of related specialty course and application of new scientific methods in future work. This course is for major of industrial engineering.

**Reference book:**

Operation Research, Xu Yusheng, Zhang Haiying, Peking University Press

**Kinetic Control System (3 credits)**

**Course code**: b2011159

**Suitable majors**: Automation

**Instructor**: Xu Jie, Zhang Shuping, Guli Zhati

**Brief introduction:**

This course is a core course for the major of automation. The task of this course is to master the kinetic control with the object of DC motor, including the basic composition and control rules of single closed speed regulation system, double loop speed regulation system, reversible speed regulation system and DC pulse width speed regulation system, the analysis and engineering design methods of static and dynamic performance, the digital control of DC speed regulation system. The course has a complete theoretical system with high practicability. It is a typical course applying the basic theory and tools into engineering practice. The course not only cultivates the systematical concept of the students, but also their ability of engineering design with basic theory and methods; it is also beneficial for the construction of systematic sense, engineering sense, scientific and technological development sense and innovative sense.

**Reference book:**

Electric Driving Automatic Control System-Kinetic Control System, Chen Boshi, China Machine Press

**Prerequisite:** Automatic Control Theory, Basic Motor and Driving Technology

**Quality Management and Reliability (3 credits)**

**Course code**: b2011160

**Suitable majors**: Industrial Engineering

**Instructor**: Pan Fangyu

**Brief introduction:**

Quality Management and Reliability is a specialty course for the major of industrial engineering. It mainly introduces the related problems in the field of quality and reliability, the concept of quality, the theoretical system and technological methods of quality management. Through instruction, the students shall have the sense of “quality first”, master the basic theory and methods of quality management, manages and controls the whole process of quality forming with the quality management methods, and improve the quality of products and services. This course gives instructions on reliability and maintainability with scientific management thoughts. This course combine the quality system and method application, stresses the training on the quality management technology of design process and manufacturing process, and researches on the theory, technology and management of reliability and maintainability with the product and technical facility as object.

**Reference book:**

Quality Management and Reliability, Su Qing, China Machine Press

**Prerequisite:** Engineering Statistics

**Intelligent Control (2 credits)**

**Course code**: b2011161

**Suitable majors**: Automation

**Instructor**: Chen Jin, Hu Zhihua

**Brief introduction:**

This course is a specialty course for the major of automation. The course contents include Pan Boolean control, fuzzy control, neural network control, intelligent PID control and others. Through this course, the students can get familiar with the main theoretical branches, mathematical basis, application scenarios and developing trends of intelligent control, master the theoretical basis of intelligent control and its application in actual control system.

**Reference book:**

Intelligent Control Theory and Technology, Sun Zengqi, Tsinghua University Press

**Prerequisite:** Automatic Control Theory, Electric Technology, Microcomputer Theory

**Intelligent Instrument Technology (3 credits)**

**Course code**: b2011162

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Qing Qing, Wang Sujuan, Feng Rongda and others

**Brief introduction:**

Course Design for the Major of Measurment and control Technology provides practical training with the objective to cultivate the students’ ability of analysis, design and commissioning of optical, mechanic, electric and computing system, train the students to solve practical problems with learned knowledge, and make necessary preparations for the following graduation design.

**Reference book:**

Self-edited textbook

**Execution Management System of Intelligent Manufacturing and Production Process (2 credits)**

**Course code**: b2011163

**Suitable majors**: Information Management and Information System

**Instructor**: Yang Jinghui

**Brief introduction:**

This course is to strengthen the execution function of MRP plan and relate MRP plan to workshop onsite control system with execution system. The onsite control here includes PLC program controller, data collector, bar code, all kinds of measurement and testing instrument, machine hand and others. MES system provides necessary interface and have cooperation with producers of onsite controller.

**Reference book:**

MES and MII, Yang Jinghui, Self-edited textbook

**Prerequisite:** Management Information System, ERP Theory and Application

**Introduction to Specialty A (1 credit)**

**Course code**: b2011164

**Suitable majors**: Material Formation and Control, Measurement and Control Technology and Instrument, Industrial Engineering, Mechanical and Electronic Engineering, Mechanical Engineering, Traffic and Transportation, Information Management and Information System, Automation

**Instructor**: Bai Yuewei, Liu Ping, Hu Zhihua, Yang Jinghui

**Brief introduction:**

This course helps the students know the brief introduction and frontiers of the related disciplines, strengthens their understanding of related specialty; it also helps the student have an idea of the study in the specialty field, cultivation of related ability, current status of the specialty and market needs and determine the study field and interest of the students.

**Reference book:**

Introduction to Specialty, Self-edited, Bai Yuewei, Liu Ping, Hu Zhihua, Yang Jinghui

**Automatic Meters and Measurement (2 credits)**

**Course code**: b2011166

**Suitable majors**: Automation

**Instructor**: Chen Jin, Hu Zhihua, Zheng Pu and others

**Brief introduction:**

This course is a compulsory specialty course for the major of industrial automation. This course is arranged after the study of the course of automatic control theory and testing technology. The contents of electric knowledge are comprehensive in this course. Through this course, the students are able to know the process control meters necessary for the automatic regulation system, the function, theory and composition of regulator, distributed control system and regulating valve, the basic working theory of all kinds of testing meters and process control meters, the composition, regulation methods and applications of process control system. This course is an important specialty course for the cultivation of talents of automation majors.

**Reference book:**

Automatic Testing Technology and Meter Control System, Zhang Yi, Chemical Industry Press

**Prerequisite:** Automatic Control Theory, Application of Electric Technology, Basic Circuit

**Automatic Control Theory (4.5 credits)**

**Course code**: b2011167

**Suitable majors**: Automation

**Instructor**: Zhou Jing, Hu Zhihua, Tao Lili and others

**Brief introduction:**

Automatic Control Theory is one important basic specialty course for the major of automation. The purpose of this course is to help the students understand the basic contents of classic theories of automatic control (mathematics model, engineering analysis algorithm and general rules of system) and have the ability of analysis and computing. The course contents include the feedback system, transfer function, system response performance index, time-domain analysis methods, root locus analysis, frequency feature analysis and others. The study of this course lays some basis for the design of automatic control system.

**Reference book:**

Automatic Control Theory, Hu Shousong, Science Press

**Prerequisite:** Advanced Mathematics, Engineering Mathematics, Circuit, Electric Technology

**Automatic Control Theory (4 credits)**

**Course code**: b2011168

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Wang Sujuan, Feng Rongda

**Brief introduction:**

Through project practice, the students are able to have a deep and systematic understanding of VB language and firmly master the operational environment, controlling structure, process, drawing, animation, text editing, multi-window design and other basic skills.

**Reference book:**

Practice Instruction of VB Program Design, Sun Mingzhu, Tianjin University Press

**Signal and System (3 credits)**

**Course code**: b2012129

**Suitable majors**: Measurement and Control Technology and Instrumentation, Electronic Information Engineering, Communications Engineering

**Instructor**: Zhang Hua, Dai Hong

**Brief introduction:**

This course discusses the time-domain, frequency-domain and complex-domain analysis of continuous and dispersed signal and system, and the time-domain and transform-domain analysis of linear time-invariant system. Through this course, the students are able to understand the basic theory and method of time-domain and transform-domain analysis of signal and system, Fourier transform, Laplace Transform, mathematical concept, physical concept and engineering concept of Z transform, basic method to analyze and solve practical problems with the basic theory of signal and system, laying a solid basis for the study of following course like data signal processing, communication theory, automatic control theory and others.

**Reference book:**

Signal and System, Chen Houjin, Higher Education Press

**Prerequisite:** Circuit B, Analog Electric Technology, Advanced Mathematics

**C++ Course Design (2 credits)**

**Course code**: b4011001

**Suitable majors**: Information Management and Information System

**Instructor**: Du Wanhe

**Brief introduction:**

Program Design is a general education course for undergraduates, including the instruction of object-oriented program design, the most basic data structure and software engineering. The purpose of this course is to cultivate the students’ object-oriented programming ability and their logical thinking ability. This course chooses object-oriented C++ language as the instructional language.

**Reference book:**

Basic C++ Program Design, Guan Jianhe, Tsinghua University Press

**Prerequisite:** Basic Computer Culture

**CAD/CAM Practice (1 credit)**

**Course code**: b4011002

**Suitable majors**: Mechanical and Electronic Engineering

**Instructor**: He Yu’an, Sun Fangfang

**Brief introduction:**

This course has a theoretical, practical and applicable feature. This courses strengthens the students’ understanding and application of CAD basic theory and knowledge and their ability of simple mechanic CAD system development with Pro/ENGINEER software, laying a solid basis for the engineering technical work in the future.

**Simulation Training of ERP Physical Sand Table (1 credit)**

**Course code**: b4011003

**Suitable majors**: Information Management and Information System

**Instructor**: Yang Ying

**Brief introduction:**

Through the interesting sand table, the students are able to understand the business process of enterprise and their team work spirits are strengthened through knowledge study and group training.

**Reference book:**

Instruction of ERP Theory and Application, Zhou Yuqing, Tsinghua University Press

**Prerequisite:** ERP Theory and Application

**ERP Theory and Application Theory (2 credits)**

**Course code**: b4011004

**Suitable majors**: Industrial Engineering

**Instructor**: Wang Xiaogang, Nie Li, Liu Kai

**Brief introduction:**

This course takes manufacturing ERP as an example, takes Jindie ERP, Yongkai ERP, SAP or other business software as the main tools, introduces the application of basic theory, processing logic, business process of MRPII/ERP. The main contents include the main production schedule (MPS), material requirement plan (MRP), capacity requirement plan (CRP), material management control, production cost accounting and control, business process description, project execution methodology and others. This course strengthens the students’ understanding of ERP theory, helps the students master the operation of related software and the realization of the whole business process in ERP, including the accounting, ordering accept, production and sales.

**Reference book:**

Enterprise Resources Plan (2nd edition), Zhang Zhenji, Shao Liping, Publishing House of Electronics Industry

**PLC Practice (2 credits)**

**Course code**: b4011005

**Suitable majors**: Automation

**Instructor**: Hu Zhihua

**Brief introduction:**

This course is a practical course for the major of automation, which strengthens the skill training. Through this course, the students are able to master the theory and practical skills of PLC applied technology required for the maintenance electrician (junior technical worker), improve their comprehensive ability, the ability of PLC control system design and regulation in accordance with the production needs, the technical revolutionary and improvement ability with PLC and the ability to analyze and solve production technical key problems with difficulty.

The instructional outline is made in accordance with the professional standard of maintenance electrician (junior technical worker) and is suitable for the professional skill training of maintenance electrician (junior technical worker). Through this course, the student can take the examination organized by National Professional Skills Authentication Bureau and the ones passing the test can acquire the qualification certificate of maintenance electrician (junior technical worker). This course lays an important basis for the work in the future.

**Reference book:**

Maintenance Electrician (Grade 3), Textbook Office of Ministry of Human Resources and Social Security, China Labor and Social Security Press

**Prerequisite:** Electric Control and Programmable Controller

**SAP ERP and TERP10 Qualification Training (3 credits)**

**Course code**: b4011006

**Suitable majors**: Information Management and Information System

**Instructor**: Yang Ying

**Brief introduction:**

With the study and training of SAP ERP system, the students are able to have a understanding of the large-scale enterprise management system software and choose to take the TERP 10 qualification exam.

**Reference book:**

TERP 10 Instruction, SAP Company, Self-edited textbook

**Prerequisite:** ERP Theory and Application

**Course Design of SQL Server Database (2 credits)**

**Course code**: b4011007

**Suitable majors**: Information Management and Information System

**Instructor**: Zhang Jianming

**Brief introduction:**

Database technology starts from 1960s and has a history of over 40 years. As the most effective way of data management, database technology greatly promotes the development of the computer application. Nowadays, the database technology and system have become the core technology and important basis for the information infrastructure. Thus, the study and understanding of the basic concept, theory and design of database have an important role in the construction of information management and information system.

**Reference book:**

Database Application and Design, Cui Wei, Tsinghua University Press

**Prerequisite:** Basic Computer Culture

**Course Design of Web Program Design (1 credit)**

**Course code**: b4011008

**Suitable majors**: Information Management and Information System

**Instructor**: Wen Wen, Wu Jiaqi

**Brief introduction:**

The students are required to master the VS.NET 2005 development C# for .NET Web Form, output information to the browser, acquire the users’ data at the browser terminal, and understand the use of control of the server. The students shall also learn to use the application program level variable, know the method of connection to different database and operation of database, and master the method of creating and using of Web service. Through this course, the students are able to independently create Web based application connected to database with individual style and innovation.

**Reference book:**

Practice and Case Study of ASP.NET Webpage Design and Website Development, Ma Jun, Posts & Telecom Press

**Prerequisite:** HTML, WEB Development Technology, Introduction to Database System, Practice of Database Technology

**Course Design of Metal Plate Forming Theory and Technology (3 credits)**

**Course code**: b4011009

**Suitable majors**: Mechanical Engineering

**Instructor**: Yuan Wenjing

**Brief introduction:**

Through the basic skill training of typical metal plate module design, the students shall master the basic methods and design steps of metal plate module design and the comprehensive application of mechanics and material knowledge, laying a necessary basis for the graduation design and actual engineering design in the future.

**Reference book:**

Stamping Manual, Wang Xiaopei, China Machine Press

**Prerequisite:** Modern Engineering Drawing, Metal Plate Forming Theory and Technology

**Practice of Standardization Project (2 credits)**

**Course code**: b4011010

**Suitable majors**: Industrial Engineering

**Instructor**: Bai Yuewei, Pan Fangyu

**Brief introduction:**

With a large amount of cases, the students are able to understand the construction process of enterprise’s standardization system, design and making of enterprise standard system table, research and making of enterprise standard, execution and inspection of standard, post-evaluation of effectiveness of standard application, evaluation and improvement of enterprise standardization system. The students shall also master the basic methods of standardization, the execution process of standardization, making and modification of standards, execution and supervision of standards.

**Reference book:**

Standardization Project of Enterprise, Hong Shengwei, China Standard Press

**Graduation Internship and Graduation Design (Thesis) for the Major of Material Formation and Control (12 credits)**

**Course code**: b4011011

**Suitable majors**: Material Formation and Control

**Brief introduction:**

This course covers the basic knowledge and specialty knowledge of the major of mechanic and electronic engineering, which is an important comprehensive instructional step of the cultivation plan. It is a deepening, supplement and test of different instructional step, an important test measure to meet the cultivation objectives of applied engineering and technical talent, a compulsory course for the students’ graduation.

Through the graduation design (thesis), the students receive the trainings of application of basic theory, specialty knowledge and skills, so as to consolidate the learned knowledge system and expand their vision.

**Course Design of Measurement and Control Technology (2 credits)**

**Course code**: b4011012

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Wang Sujuan and Jiang Xiaojun

**Brief introduction:**

This course systematically introduces the application of single-chip machine, including the basic application skills of single chip machine, 51 single chip machine simulation system, 51 single chip machine program design, 51 single chip machine C language program design and others, so that the students can master the basic application skills of the single chip machine through practice.

**Reference book:**

Practice of Single Chip Application, Zheng Aqi, Publishing House of Electronics Industry

**Graduation Internship and Graduation Design (Thesis) for the Major of Measurement and Control Technology and Instrumentation (12 credits)**

**Course code**: b4011013

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Wang Sujuan, Jiang Xiaojun

This course focuses on the ability cultivation, strengthens the combination of theory and practice, and stresses the practical instruction together with theoretical instruction. This course helps the students understand the application of electric driving, PLC hardware, PLC program design, Fx-20P-E programmer and the latest programming software GX Developer.

**Reference book:**

Electric Control and PLC Prctice, Ruan Youde, Posts & Telecom Press

**Common Office Software (1 credit)**

**Course code**: b4011014

**Suitable majors**: Information Management and Information System

**Instructor**: Yang Ying, Zhang Jianming

**Brief introduction:**

This course introduces the application skills of Windows, Word, Excel, Powerpoint and Internet. As one of the textbook for the computer application software in the 21st century, this textbook shows the revolutionary direction with the improvement of students’ computer software application ability as the purpose. The suggested lecturing hour is 30 hour and the experimental hour is 30 hour too. The prerequisite is the basic course of computer application or computer culture.

**Reference book:**

OFFICE Software Application (Planned Computer Textbook for 21st University), Song Shaoyun, Tsinghua University Press

**Prerequisite:** Basic Computer Culture

**Practice of Program Design (1 credit)**

**Course code**: b4011015

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Chen Baoyu and Jiang Xiaojun

**Brief introduction:**

Practice of Electric Measurement Technology emphasizes the instruction of application knowledge and test skills in the field of electric measurement technology, with the objective to help the students understand the basic electric measurement theory or methods, know the theoretical knowledge of errors and have data processing ability, master the technical performance, basic composition, working theory, usage and maintenance of electric measurement devices and the basic measurement methods of electric signal, component and circuit parameters. The course requires the students to combine theoretical knowledge and practice together, strengthen the learned electric measurement technology, have the ability to analyze and solve problems with basic application skills of common devices, and cultivate the scientific, serious and responsible working attitude, laying a basis for the work in the future.

**Reference book:**

Practice Instruction of Electric Measurement, Xiao Xiaoping, China Machine Press

**Prerequisite:** Analog Circuit, Digital Circuit, College Physics and others

**Practice of Program Design and Database (2 credits)**

**Course code**: b4011016

**Suitable majors**: Industrial Engineering

**Instructor**: Wang Xiaogang, Liukai

**Brief introduction:**

Practice of Program Design and Database explores the horizon of the students, helps to improve the students’ understanding of the knowledge and cultivates their application and practical ability. The students shall master the theory and method of algorithm language and database and cultivate their comprehensive ability of solving problems with theories.

**Reference book:**

Visual C# 2010 from Entry-level to Senior-level, Song Zhijun, Qiu Zhongpan, Publishing House of Electronics Industry

**Course Design of Stamping (2 credits)**

**Course code**: b4011017

**Suitable majors**: Material Formation and Control

**Instructor**: Tian Haobin

**Brief introduction:**

Through the basic skill training of typical module design, the students shall master the basic methods and design steps of module design and the comprehensive application of mechanics and material knowledge, laying a necessary basis for the graduation design and actual engineering design in the future.

**Reference book:**

Stamping Manual, Wang Xiaopei, China Machine Press

**Prerequisite:** Stamping Technology and Stamping Design

**Innovation Project for Undergraduates (3 credits)**

**Course code**: b4011018

**Suitable majors**: Information Management and Information System

**Instructor**: Yang Jinghui, Luo Shoucheng, Yang Ying

**Brief introduction:**

The students are required to select from the three courses: the Innovation Project for Undergraduates, E-commerce Competition for Undergraduates, and ERP Competition. The innovation projects are divided into national-level, shanghai municipal-level and the college-level.

**Prerequisite:** Basic Computer Culture, Basic Program Design

**Application Practice of Single Chip Machine (1 credit)**

**Course code**: b4011019

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Gu Yang, Xu Guanjie, Chai Yu

**Brief introduction:**

Application Practice of Single Chip Machine is a practical course which cultivates the students’ ability to solve practical problems with the application of knowledge. Through this course, the students are required to understand the basic structure and working theory of single chip machine, master the common instructional system, have the program reading ability, program design ability, program regulation ability, hardware design ability of the most mini system of the single chip machine. The students shall also understand the concept and application of interruption, the working mode of timer/counter and the timing method of the software or hardware, the basic method and interfacing technology of system extension, the basic knowledge of parallel communication of single chip machine and the use of parallel interface, laying a basis for the application of single chip machine system.

**Reference book:**

Application Practice of Single Chip Machine I, Chen Liping, Self-edited

**Prerequisite:** Digital Electric Technology, Single Chip Machine Theory and Application

**Practice of Installation and Commissioning of Power Electric Circuit (1.5 credits)**

**Course code**: b4011020

**Suitable majors**: Automation

**Instructor**: Song Haihui

**Brief introduction:**

Through this course, the students are required to master the installation and commissioning of three-phase semi-wave controllable rectification circuit, three-phase semi-controllable bridge type rectification circuit, three-phase controllable bridge-type rectification circuit, double anti-starb controllable rectification circuit.

**Reference book:**

Maintenance Electrician (Grade 3), Ministry of Human Resources and Social Security, China Labor and Social Security Press

**Prerequisite:** Power Electric Converter Technology

**Practice of Circuit Design and Plate Making (1 credit)**

**Course code**: b4011021

**Suitable majors**: Mechanical and Electronic Engineering

**Instructor**: He Cheng, Sun Fangfang

**Brief introduction:**

This course trains on the plate making rules of different circuit in the way of project.

**Electric CAD Drawing (1.5 credits)**

**Course code**: b4011022

**Suitable majors**: Automation

**Instructor**: Xu Jie

**Brief introduction:**

This course trains the students to show electric drawing with AUTOCAD with basic electric design knowledge and make different electric wiring drawings even engineering drawings with CAD software. Through this course, the students are required to 1. master the use of electric engineering CAD software, get familiar with the design standards of electric engineering drawings and have the basic engineering design ability of electric engineering drawing; 2. have the correct design thoughts and understand the current technical or economic policies of the country; 3. have the ability of applying standard, rules, manuals, drawings and others.

**Reference book:**

Electric CAD Cases, Zuo Fang, Posts & Telecom Press

**Practice of Electric Control and Programmable Controller (2 credits)**

**Course code**: b4011023

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Wang Sujuan, Qing Qing

**Brief introduction:**

This course helps the students master the methods or skills of robot application, taking ABB robot as research object with typical examples like robot conveying and others.

**Reference book:**

Explanation on Typical Application Case of Robots, Ye Hui, China Machine Press

**Practice of Electric Control and Programmable Controller (1.5 credits)**

**Course code**: b4011024

**Suitable majors**: Automation

**Instructor**: Gao Shunfu, Yao Rongrong, Zheng Pu and others

**Brief introduction:**

The course objective is to train the students’ practical skills based on the theoretical course of Electric Control and Programmable Controller. The course requires the students to master the structure, theory, instructional system, programming and use of related auxiliary facilities starting from the engineering practice and focusing on the Mitsubishi FX machine model. Through this course, the students are able to not only design the electric control circuit with the logic sequencing control thoughts, but also design PLC system in accordance with the technological process and controlling requirement, laying a good basis for the graduation design and the future work.

**Reference book:**

Experimental Instruction Manual for the Course Design of Programmable Controller, Wang Zhifeng, Self-edited

**Prerequisite:** Electric Control and Programmable Controller

**Practice of Electric Measurement Technology (1 credit)**

**Course code**: b4011025

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Qing Qing, Tu Zimei

**Brief introduction:**

Through this course, the students are required to understand the composition and basic theory of visual testing system, know how to select and design each composed part, master the corresponding photo processing methods. This course also improves the students’ practical programming ability by computer operation and teaches them the thought to solve related problems in the work and research in the future.

**Reference book:**

Computer Visual, Ma Songde, Science Press

**Prerequisite:** Advanced Mathematics, College Physics

**Basic Training of Electric Engineering (1 credit)**

**Course code**: b4011026

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Qing Qing, Wang Sujuan, Chen Baoyu and other

**Brief introduction:**

The purpose of this course is to help the students get familiar with the graphic programming environment, learn the graphic programming language, master the G language programming technology, apply the LabVIEW development virtual appliance, so as to meet the requirements of automation, mechanic automation, appliance control, mechanic electronics, measurement and control technology and modern measurement technology.

**Reference book:**

LabVIEW 8.20 Program Design, From Entry-level to Senior-level, Chen Xihui, Zhang Yinhong, Tsinghua University Press

**Prerequisite:** Circuit, Digital Electronics, Analog Electronics, Sensor Theory

**Factory Internship (1 credit)**

**Course code**: b4011027

**Suitable majors**: Mechanical Engineering

**Instructor**: Yuan Wenjing

**Brief introduction:**

The purpose of this course is to help the students understand the basic production knowledge, cultivate their ability to investigate and research, observe, analyze and solve problems, laying a good basis for the study of the following specialty courses. Through the internship, the students are required to understand the modern production way and advanced manufacturing technology, and have a great interest on this major.

**Prerequisite:** Introduction to Aeronautics & Astronautics

**Factory Internship (1 credit)**

**Course code**: b4011028

**Suitable majors**: Industrial Engineering

**Instructor**: Bai Yuewei, Wang Xiaogang, Nie Li and others

**Brief introduction:**

In order to let the students understand the actual production environment, production process and management mode of the factory before the study of related specialty courses, the students are required to visit and study in the workshop or administrative department of the factory, so as to know the production environment, the functions and processing way of different facilities, and the basic process of production management, laying a good basis for the following specialty course.

**Practice of Engineering Statistics (1 credit)**

**Course code**: b4011029

**Suitable majors**: Industrial Engineering

**Instructor**: Bai Yuewei, Wang Xiaogang, Nie Li

**Brief introduction:**

Taking SPSS and MiniTab as tools and focusing on the actual needs of the enterprise, this course systematically introduces the core thoughts of engineering statistical analysis and the operation of its basic methods, so as to strengthen the students’ understanding of basic statistics theory and improve their ability to solve practical problems with functions of related tools or software.

**Reference book:**

SPSS Statistical Analysis Method and Application (3rd edition), Xue Wei, Publishing House of Electronics Industry

MINITAB Based Modern Practical Statistics (2nd edition), Ma Fengshi, China Renmin University Press

**Practice of Engineering Drawing (2 credits)**

**Course code**: b4011030

**Suitable majors**: Mechanical and Electronic Engineering

**Instructor**: Yuan Qun, Zhang Weiyuan, Wu Jun and others

**Brief introduction:**

Modern Engineering Drawing and Mapping is based on Modern Engineering Drawing I( including projection method, three-view drawing, ensemble and expression) and Modern Engineering Drawing II (including mechanic standard part, common part, expression of component drawings and assembly drawings), which cultivates the engineering practical ability of the students during the process of assembling, dissembling of the true mechanic devices, the measurement and mapping of component sketches or component assembly working drawings. The main purposes of this course are as follows: 1. master the assembling and dissembling method of the mechanic devices; 2. master the mapping method of mechanic components; 3. master the expression and mapping of component sketches and working drawings; 4. master the expression of assembly working drawing of the mechanic devices; 5. draw a complete working drawing of mechanic devices (A1 Size)

**Reference book:**

Modern Engineering Drawing and Mapping, Self-edited

**Prerequisite:** Modern Engineering Drawing I and II

**Practice of Industrial Control Configuration Software (1.5 credits)**

**Course code**: b4011031

**Suitable majors**: Automation

**Instructor**: Zheng Pu, Gao Shunfu, Hu Zhihua

**Brief introduction:**

This course is a specialty practice course for the undergraduates with the major of electric technology, industrial automation, mechatronics. Through this course, the students are required to master the design of PLC and human-computer interface controlled by the computer in industrial automation control system, laying a good basis for the rapid adaptation into the work of industrial automation after graduation.

**Reference book:**

Industrial Control Configuration Software, Wang Zhifeng, Publishing House of Electronics Industry

**Prerequisite:** Movement Control Technology, Process Control Technology

**Graduation Internship and Graduation Design (Thesis) for the Major of Industrial Engineering (12 credits)**

**Course code**: b4011032

**Suitable majors**: Industrial Engineering

**Instructor**: Bai Yuewei, Wang Xiaogang, Nie Li, and others

**Brief introduction:**

This course covers the basic knowledge and specialty knowledge of the major of mechanic and electronic engineering, which is an important comprehensive instructional step of the cultivation plan. It is a deepening, supplement and test of different instructional step, an important test measure to meet the cultivation objectives of applied engineering and technical talent, a compulsory course for the students’ graduation. Through the graduation design (thesis), the students receive the trainings of application of basic theory, specialty knowledge and skills, so as to consolidate the learned knowledge system and expand their vision.

**Practice for the Major of Industrial Engineering (Production Management Domain) (1 credit)**

**Course code**: b4011033

**Suitable majors**: Industrial Engineering

**Instructor**: Bai Yuewei, Wang Xiaogang, Nie Li and others

**Brief introduction:**

Practice for the Major of Industrial Engineering (Production Management Domain) is an important comprehensive practical session after the completion of specialty courses including basic industrial engineering, operation research, system engineering, production plan and control, logistics and supply chains, production system modeling and simulations. With cases of actual engineering backgrounds, the students are able to understand the basic contents of business work like production and sales, master the basic methods of product need forecast, production plan making, workshop task regulation and warehouse management with corresponding tools or software, know how to construct production system simulated model, discover the key problems existing in production system by simulation analysis so as to provide improvement measures and prove the execution effects. Through the practice, the students’ ability of basic planning, design, evaluation and improvement of the production system according to actual conditions and their ability of raising the onsite management efficiency are improved.

**Reference book:**

Instruction of Course Design for the Major of Industrial Engineering, Jiang Zuhua, Miao Rui, Chen Youling, China Machine Press

**Practice for the Major of Industrial Engineering (Project Management Domain) (1 credit)**

**Course code**: b4011034

**Suitable majors**: Industrial Engineering

**Instructor**: Xia Yanchun

**Brief introduction:**

Practice for the Major of Industrial Engineering (Project Management Domain) strengthens the students’ understanding of nine big knowledge system of the project management, including the range management, time management, expense management, quality management, human resources management, risk management, purchasing management, contract management and communication management through detailed true cases. Through this course, the student are able to master the skills of time management and cost management and complete simple control and management of the actual projects in accordance with the China Management Project System (iPMBOK), understand the basic theory of network planning technology and the methods or skills of network drawing, the algorithm of network time parameters, and the methods of time-cost optimization of network plans. Besides, the students shall also master the using methods or technique of corresponding project management software and understand the scope, schedule and cost budget of the project, taking one true engineering project as the research object.

**Reference book:**

Instruction of Project Management (Bilingual) (5th edition), written by Eric Lakson and Clifford Gray, translated by Wang Liwen, Xu Tao and Zhang Yang, Posts & Telecom Press

**Practice for the Major of Industrial Engineering (Quality Management Domain) (1 credit)**

**Course code**: b4011035

**Suitable majors**: Industrial Engineering

**Instructor**: Bai Yuewei, Pan Fangyu and others

**Brief introduction:**

Practice for the Major of Industrial Engineering (Quality Management Domain) is a comprehensive practical session after the completion of specialty courses including engineering statistics, quality management and reliability, standardized engineering. The purpose of this course is to strengthen the students’ understanding of the basic theory or knowledge of the related specialty course, cultivate their quality management sense, and improve their understanding of the reliability of the products and the importance of the maintenance. The students are also required to master the basic methods of quality management, manage and control the whole process of quality forming with the quality management methods correctly and improve their ability to solve practical problems with common statistical tools and the application ability of corresponding software. The course provides the contents and examples of quality function, quality control, experimental design, facility fault data statistics and reliability analysis, facility protective maintenance approval and analysis for the students.

**Reference book:**

Instruction of Course Design for the Major of Industrial Engineering, Jiang Zuhua, Miao Rui, Chen Youling, China Machine Press

**Practice of Industrial Robot Application (1.5 credits)**

**Course code**: b4011036

**Suitable majors**: Automation

**Instructor**: Hu Zhihua, Zheng Pu, Wang Zhenhua

**Brief introduction:**

This course is a practical course for the major of automation, which strengthens the skill training. Through this course, the students are able to master the theory and practical skills of industrial robot application technology. The course also cultivates their ability to design and regulate the industrial robot control system, their ability to do technical revolution and upgrade of automatic production line with the use of industrial robot and the ability to analyze and solve production technical and key problems with high difficulty.

**Reference book:**

Instruction of Practice of Industrial Robot Application, Self-edited

**Prerequisite:** Movement Control System, Servo Control Technology, Installation and Commissioning of Controller

**Process Specification and Clamp Design (2 credits)**

**Course code**: b4011037

**Suitable majors**: Mechanical Engineering

**Instructor**: Wang Wenxia

Brief introduction;

After the study of courses like mechanic manufacturing technology, based on the production internship, this course arranged a practical session, requiring the students to do technical or structural design with related theory and practical knowledge and get ready for the graduation design. The students shall also master the principle, steps and methods of mechanic processing specifications, learn to search and use the manuals and document of mechanic processing technology accurately, determine the mechanic processing technology and parameters of the components., understand the structure design theory or methods of the special clamps for machine tools and have the ability to analyze ordinary technological problems. Taking the mid-level complicated components, the students are required to solve related problems with related course knowledge like mechanic drawing, tolerance and technical measurement, material and thermal processing, machine tool and cutting theory.

**Reference book:**

Instruction of Mechanical Manufacturing Technology and Special Clamp Design, Chief editor Sun Liyuan, Metallurgy Press

**Prerequisite:** Basic Mechanic Manufacturing, Mechanic Manufacturing Technology, Engineering Drawing, Engineering Mechanics, Engineering Material, Mechanic Measurement Precision and Test

**Course Design of Management Information System Development I (1 credit)**

**Course code**: b4011038

**Suitable majors**: Information Management and Information System

**Instructor**: Yang Ying, Yang Jinghui

**Brief introduction:**

Based on the study of analysis, design and development tool of management information system, the students are required to develop a small-scale management information system by themselves.

**Reference book:**

Management Information System, Huangchao, Tsinghua University Press

**Prerequisite:** Management Information System, Database Theory and Application, Basic Program Design

**Course Design of Management Information System Development II (1 credit)**

**Course code**: b4011039

**Suitable majors**: Information Management and Information System

**Instructor**: Yang Ying, Yang Jinghui

**Brief introduction:**

Based on the study of analysis, design and development tool of management information system, the students are required to develop a small-scale management information system by themselves.

**Reference book:**

Management Information System, Huangchao, Tsinghua University Press

**Prerequisite:** Management Information System, Database Theory and Application, Basic Program Design

**Course Design of Management Information System Development I (2 credit)**

**Course code**: b4011040

**Suitable majors**: Industrial Engineering

**Instructor**: Wang Xiaogang, Nie Li, Liu Kai and others

**Brief introduction:**

This course is a compulsory practical session for the major of industrial engineering after the completion of core specialty courses like management information system, production operation and algorithm A, algorithm language and database. Through this course, the students are required to strengthen their understanding and practical application of basic theory and knowledge of management information system, and learn to plan and design information management system for the manufacturing industry with related software, laying a solid basis for the management work in the future. Through the study of management information system and the practical training of course design, the students shall have the ability to analyze and design information system independently.

**Reference book:**

Management Information System, Zhu Shunquan, Tsinghua University Press

**Integration and Regulation of Process Control System (2 credits)**

**Course code**: b4011041

**Suitable majors**: Automation

**Instructor**: Hu Zhihua, Zheng Pu, Wang Zhenhua

**Brief introduction:**

This course design is a practical instruction session compulsory for all the research field of automation majors, which is also an important instructional session after the completion of courses like automatic control theory, automatic meters, computer control technology, and process control technology. The whole process is completed by the students independently with the instruction of the teachers. Through this course, the student shall be able to master the course contents flexibly and acquire the ability to integrate and regulate the single closed-loop negative feedback control system with learned knowledge. The instructional purposes are as follows:

1. Strengthen the students’ understanding of the theoretical knowledge of courses like automatic control theory, automatic meters, computer control technology, process control and others.
2. Master the working theory, programming methods, parameter engineering setting of digital PID.
3. Learn and master the basic methods of integration and regulation of single closed-loop negative feedback control system based on the B&R automatic facilities.
4. Cultivate the students’ ability to analyze and solve problems and their basic technologies of designing, integration and regulation of actual automatic control system with learned knowledge.

**Reference book:**

Integration and Regulation of Process Control System, Hu Zhihua, Slef-edited

**Prerequisite:** Automatic Control Theory, Automatic Meters, Computer Control Technology, Process Control Technology

**Welding Practice (1 credit)**

**Course code**: b4011042

**Suitable majors**: Automation

**Instructor**: Wang Wei, Wang Zhenhua, Hu Yiyan

**Brief introduction:**

This course is a practical course, introducing the basic methods, key contents and technical skills necessary for welding through detailed welding practice. Besides, the students are also required to have the practical skills of welding, have the ability to analyze and solve problems independently with good work style and sense of safety operation through practice, so that the students can rapidly adapt into the working environment in the future.

**Reference book:**

Electric Practice of Electrician, Xiao Junwu, Publishing House of Electronics Industry

**Practice of Interchangeability and Measurement Technology (2 credits)**

**Course code**: b4011043

**Suitable majors**: Material Formation and Control, Mechanical and Electronic Engineering, Mechanical Engineering

**Instructor**: Cai Chilan, Li Xuelei, Gan Liantao, Wei Shuangyu

**Brief introduction:**

This course is a practical basic specialty course for the mechanic majors, with the purpose to introduce the basic knowledge of interchangeability and standardization, the basic concept and accurate selection of tolerance and fit of holes and axles, geometric tolerance (shape and position tolerance) and surface and roughness. Through this course, the students are required to have the ability to do precision design of typical mechanic component in accordance with related national standards and functions of components, understand the basic knowledge of measurement technology, determine the measurement plan, select the measurement instrument, implement measurement and write test report with the test technologies reasonably, laying a solid basis for the future study of following courses and the design and manufacturing of mechanic products.

**Reference book:**

Basic Mechanic Precision Design and Test, Liu Jing, Li Zhe, Ha’erbin Industrial University Press

**Prerequisite:** Engineering Drawing

**Practice of Accounting (2 credits)**

**Course code**: b4011044

**Suitable majors**: Industrial Engineering

**Instructor**: Xia Yanchun, Nie Li, Pan Fangyu

**Brief introduction:**

This course helps the students to master the ability of bookkeeping, reading and compiling basic financial statements with the business ERP software and the ability of financial evaluation index computing related to financial statements.

**Reference book:**

Basic Accounting, Chen Guohui, Chi Xusheng, Northeast Financial University Press

**Practice of Machine Tool Electric Control (2 credits)**

**Course code**: b4011045

**Suitable majors**: Automation

**Instructor**: Cui Lei, Xu Jie, Hu Zhihua

**Brief introduction:**

This course is a specialty technical course for the major of automation (undergraduates). This course covers the contents of common low-voltage control facility, basic control procedures of electric control (control methods and control theory), electric control of common machine tools, and combined electric control. Through this course, the students can master the basic control methods and theory of electric control devices, and related electric protection and interlocking, have the ability to analyze the working theory of electric control circuit of machine tools independently and the ability of fault analyze and fault elimination of electric control circuit of machine tools.

**Reference book:**

Relay Control Circuit Mapping and Fault Elimination, Zhang Fan, Self-edited

**Prerequisite:** Circuit, Basic Motor and Driving Technology, Basic Electric Technology

**Practice of Machine Tool Electric and PCL Control (2 credits)**

**Course code**: b4011046

**Suitable majors**: Mechanical and Electronic Engineering

**Instructor**: Sun Fangfang, He Yu’an

**Brief introduction:**

This course helps the students master the basic theory of machine tool electric control, get familiar with the electric control circuit of actual machine tools or mechanic facility, master the design methods of control circuit, through the instruction of design of the most basic and most typical machine tool electric control circuit in production practice, laying a good basis for the electric technical work in the future.

**Practice of Mechanic Electric System (2 credits)**

**Course code**: b40110147

**Suitable majors**: Mechanical and Electronic Engineering

**Instructor**: He Yu’an, He Cheng, Sun Fangfang, Yang Shuzhen

This course helps the students to combine the mechanical and electronic engineering course contents together through project instruction.

**Practice of Hydromechantronic (Pneumechantronic) Automation (2 credits)**

**Course code**: b4011048

**Suitable majors**: Material Formation and Control

**Instructor**: Jia Lixin

**Brief introduction:**

This course cultivates the students’ ability to solve practical engineering problems with the theoretical knowledge of hydromechantronic control technology.

Through the course, the students are able to master the general methods or steps for the hydraulic and pneumatic transmission, electric control and PLC system design, laying necessary theoretical basis and practical skills for the graduation design and actual engineering design in the future.

**Reference book:**

Hydromechantronic Control Technology, Guan Jingtai, Tongji University Press

**Prerequisite:** Hydraulic and Pneumatic Transmission

**Practice of Hydromechantronic (Pneumechantronic) Automation (3 credits)**

**Course code**: b4011049

**Suitable majors**: Mechanical Engineering

**Instructor**: Liu Ping, Li Ning, Yao Guoqiang, Cai Jie

**Brief introduction:**

This course cultivates the students’ sense and method of combining theory and practice and introduces the common hydromechantronic (pneumechantronic) facility of Mechanical Engineering, including the application of modular fixture with pneumatic clamping device, demonstration of instructional robot, mechanic structure and control mode, the industrial robot and its movement programming and others. Through practical trainings, the students’ ability to solve Mechanical Engineering design and manufacturing problems with theoretical knowledge and practical knowledge is improved. Besides, the students’ learned knowledge are strengthened and their teamwork spirit, innovative sense and communication skills are improved, laying a necessary basis for the graduation design and work in the future.

**Reference book:**

Practice of Hydromechantronics (Pneumechantornics), Liu Ping, Self-edited

**Prerequisite:** Mechanic Manufacturing Technology

**Practice of Robot Control Technology (1 credit)**

**Course code**: b4011050

Suitable major: Measurement and Control Technology and Instrumentation

**Instructor**: Feng Rongda, Dou Jianfang

**Brief introduction:**

From the perspective of engineering application and instruction, the course requires the students to combine the theory and practice and master the programming and regulation of common virtual device programs and the development methods of simple virtual device application system with LabView and Measurement Studio.

**Reference book:**

Instruction of Virtual Device Graphic Programming Language LabView, Liu Junhua, Xidian University Press

**Prerequisite:** Basic Virtual Device

**Experiment of Mechanical Engineering Test Technology (2 credits)**

**Course code**: b4011052

**Suitable majors**: Mechanical and Electronic Engineering

**Instructor**: Sun Fangfang, Yang Shuzhen

**Brief introduction:**

This course has an obvious theoretical and practical feature. Through this course, the understanding of basic theory and knowledge of sensor and test technology and its combination with practice are strengthened, and the common physical values in engineering practice are tested. The students are required to analyze and process the signals so as to get the required test results by reasonably and correctly selecting the sensor, building up the test system and using correct test methods, laying a solid technical basis for the study of following courses like mechanic device electric device fault diagnose and related engineering technical work in the future.

**Practice of Basic Mechanical Engineering**

**Course code**: b4011053

**Suitable majors**: Mechanical and Electronic Engineering

**Instructor**: Fu Jianqin, Cai Chilan, Li Xuelei

**Brief introduction:**

The purpose of this course is to strengthen the theoretical knowledge of basic mechanic manufacturing and applying the theoretical knowledge into the practical production through the functional requirement analysis and manufacturing technology design of typical component of shocks, with the one-tooth-difference gear as the research object.

**Reference book:**

Self-edited textbook

**Graduation Internship and Graduation Design (Thesis) for the Major of Mechanical Engineering (12 credits)**

**Course code**: b4011054

**Suitable majors**: Mechanical Engineering

**Instructor**: Liu Ping, Cai Chilan, Yuan Wenjing, Liang Caiping

**Brief introduction:**

Graduation Design is the last specialty training session for the undergraduate cultivation. Through the graduate design, the students’ understanding of basic theory, technologies and knowledge of Mechanical Engineering and automation is strengthened so as to meet the requirements of the senior applied technical talents of Mechanical Engineering or automation majors, getting the students ready for their entry into the society.

**Practice of Basic Mechanic Design (2 credits)**

**Course code**: b4011055

**Suitable majors**: Industrial Engineering

**Instructor**: teachers from Basic Department

**Brief introduction:**

This course is the last important instructional session for the course of mechanic design. Through this course, the students shall have correct design thoughts and have the ability to analyze and solve mechanic design problems with the theoretical or practical knowledge of mechanic design courses and other prerequisite courses. The students shall learn the ordinary method of mechanical design and master the general rule of mechanic design. The course provides trainings of basic technical skills of mechanic design like computing, drawing, searching documents and manuals, applying standards and specifications, and the computer-aided design and drawing with computer and CAD software if permitting.

The purpose of this course is to deepen and strengthen the learned basic knowledge and require the students to apply the learned knowledge comprehensively. Through simple mechanic driving design, the students shall be able to master the basic design methods, acquire the independent design ability, and learn to search technical documents with correct design thoughts and strict work style.

**Reference book:**

Course Design for Basic Mechanic Design, Chen Lide, Higher Education Press

**Course Design of Mechanic Design (2 credits)**

**Course code**: b4011056

**Suitable majors**: Material Formation and Control, Mechanical Engineering, Traffic and Transportation

**Instructor**: Xie Bin, Liu Xiaohang

**Brief introduction:**

Course design provides a chance for the undergraduate of mechanic majors to receive an overall mechanic design training for the first time, which is also an important practical instructional session for the course of basic mechanic design.

The course objectives are as follows:

1. Have the ability to analyze and solve practical engineering problems with theories of prerequisite courses;
2. Learn the design theory and process of simple mechanic driving devices;
3. Receive related basic technical skill training of mechanic design (computing, drawing, searching and using technical documents and others)

**Reference book:**

Course Design of Mechanic Design, Tang Zengbao, Huazhong University of Science and Technology Press

**Prerequisite:** Mechanic Design or Basic Mechanic Design

**Practice of Mechanic Design and Numerical Control Processing (2 credits)**

**Course code**: b4011057

**Suitable majors**: Mechanical Engineering

**Instructor**: Shen An’di, Zhu Hongfeng

**Brief introduction:**

This course is a selective specialty course for the major of mechanic manufacturing. Through this course, the students are required to understand CNC machine tool and its structure or functions, know the related system needs and master the mechanism of controlling axle. Through practice, the students are able to make CNC programs for selected machine tools or numerical control system and test the correctness and completeness of the program with the help of virtual machine tool.

**Reference book:**

SIEMENS. Sinumerik 840D/840Di/810Di/810D/Description of Functions Basic Machine (Part 1) 6FC5297-5AC20-0BP0

**Practice of Basic Mechanic Manufacturing (2 credits)**

**Course code**: b4011058

**Suitable majors**: Industrial Engineering, Mechanical Engineering

**Instructor**: Liu Ping, Wang Wenxia, Cai Chilan, Fu Jianqin, Wu Zhanlei

**Brief introduction:**

The purpose of this course is to strengthen the theoretical knowledge of basic mechanic manufacturing and applying the theoretical knowledge into the practical production through the functional requirement analysis and manufacturing technology design of typical component of shocks, with the one-tooth-difference gear as the research object.

**Reference book:**

Self-edited textbook

**Prerequisite:** Basic Mechanic Manufacturing, Engineering Drawing, Practice of Interchangeability and Measurement Technology

**Practice of Computer-aided Design and Manufacturing (3 credits)**

**Course code**: b4011059

**Suitable majors**: Material Formation and Control, Mechanical Engineering

**Instructor**: Wei Tianxiang

**Brief introduction:**

The course objective is to introduce the basic knowledge of computer-aided design and cultivate their ability to do product development with computers or CAD software. The students are also required to master the basic theory and knowledge of computer numerical control automatic programming, learn to select the computer numerical control system of numerical control machine tool reasonably and have the ability of correct use of numerical control facility. The course contents include CAD introduction, three-dimensional software (UG or ProE), the basic methods to create three-dimensional entity with 3D software, NC functional module of Pro/E or UG, all kinds of milling methods of Pro/E or UG, the post-processing methods of Pro/E or UG and transferring of NC programs.

**Reference book:** UG NX6.0 CAD and Manufacturing, Zhang Liye, Peking University Press

**Prerequisite:** Modern Engineering Drawing

**Graduation Internship and Graduation Design (Thesis) for the Major of Traffic and Transportation (12 credits)**

**Course code**: b4011060

**Suitable majors**: Traffic and Transportation

**Instructor**: Zhou Ping, Zhang Xian, Yao Ling and others

**Brief introduction:**

Through graduation design, the students are able to take overall, systematical and strict technical or skillful exercises with learned theories or knowledge.

**Reference book:**

Self-edited textbook, Research and Instruction Group of Vehicle Engineering, Research and Instruction Group of Vehicle Engineering

**Practice of AC/DC Speed Adjusting (2 credits)**

**Course code**: b4011061

**Suitable majors**: Automation

**Instructor**: Xu Jie, Zheng Pu

**Brief introduction:**

This course is a practical course of DC/AC speed adjusting system. Through the study and operational practice of this course, the students can strengthen the understanding of theoretical knowledge, know the corresponding development of speed adjusting field, get familiar with different speed adjusting methods and the basic structures and working theories of speed adjusting devices, master the basic methods of configuration, type selection, installation and commissioning of common speed-adjusting devices or electric devices independently based on the understanding of electric circuit drawings, laying a good basis for the work in the future.

**Reference book:**

DC/AC Speed Adjusting System, Feng Liping, Publishing House of Electronic Industry

**Prerequisite:** Automatic Control Theory, Basic Motor and Driving Technology, Movement Control System

**Practice of Controller Hardware Design (2 credits)**

**Course code**: b4011062

**Suitable majors**: Automation

The course objective is to solve the problems of engineering practice related to course group, so that the theoretical instruction combines with practical instruction firmly and the students’ professional ability, communication ability, teamwork sprit and leadership are trained. The course pays attention to the cultivation of practical applied ability and innovative ability of the students so as to meet the purpose of “study-embedded system, use-embedded system”. With the background of embedded system applied engineering common in the field of measurement and control technology and devices, the course trains the students to solve the problems with embedded system knowledge, construct the smallest system based on micro processor, design hardware and software and realize related commonly used functions.

**Reference book:**

Design and Development of Practical Embedded System, Wang Tianmiao, Tsinghua University Press

**Prerequisite:** Application of Embedded Control System

**Controller Installation and Regulation (2 credits)**

**Course code**: b4011063

**Suitable majors**: Automation

**Instructor**: Wang Zhenhua, Hu Zhihua, Xu Tao and others

**Brief introduction:**

This course introduces the circuit theory drawing design, packaging design, plate making, installation and assembly, program design, hardware and software regulation of controllers.

**Reference book:**

Experimental Instruction of Controller Installation and Regulation, Wang Zhenhua, Self-edited

**Prerequisite:** Control Program Design and Application

**Control System CAD (1 credit)**

**Course code**: b4011064

**Suitable majors**: Automation

**Instructor**: Zhou Jing, Xu Jie, Hu Zhihua and others

**Brief introduction:**

The course introduces the application of MATLAB in control system analysis, simulation and design, requiring the students to master the basic MATLAB programming skills, basic data processing instruction sentences and drawing mode, have the ability to simulate and design the automatic control system in time domain and frequency domain with the M document and Simulink software of MATLAB, and complete the dynamic response analysis, root locus drawing, frequency feature analysis and correction.

**Reference book:**

Experimental Instruction of Control System CAD (MATLAB) (for undergraduates), Zhou Jing, Self-edited

**Prerequisite:** Automatic Control Theory

**Module CAD/CAM and Course Design (3 credits)**

**Course code**: b4011065

**Suitable majors**: Material Formation and Control

**Instructor**: Qing Mingying and Wei Tianxiang

**Brief introduction:**

This course introduces the forming component design of mid-level complicated mould with common software and the NC processing program making of the designed mould component with common software (like Pro/E). The course cultivates the students’ ability to understand and analyze the design task, the ability to apply CAD/CAM software, the ability to main forming component of the plastic mould, the ability to compile mould processing technical documents, the ability to analyze and solve problems with theoretical knowledge with strict, scientific working attitude.

**Reference book:**

Pro/E Wildfire 2.0 NC Processing (Chinese edition), Yue Guiyou, Qi Xiangjun, Zhu Xintao, Xie Chi, China Water & Power Press

**Prerequisite:** Basic Mechanic Manufacturing, Computer-aided Design and Manufacturing

**Practice of Mould Manufacturing (4 credits)**

**Course code**: b4011066

**Suitable majors**: Material Formation and Control

**Instructor**: Yang Haoquan, Jia Lixin, Wei Tianxiang

**Brief introduction:**

This course introduces the NC programming and processing of mid-level complicated plastic injection mould component or cold-punching mould component, with the purpose to cultivate the Module Design and NC processing skills of the students. The students are required to compile the processing technology documents of the mould component, program NC system and complete the processing of the mould component finally.

**Reference book:**

Punching Module Design and Manufacturing, Practical Plastic Injection Module Design and Manufacturing, Liu Jianchao, Zhang Baozhong, Chen Wanling, China Machine Press

**Prerequisite:** Basic Mechanic Manufacturing, Stamping Technology and Mould Design, Polymer Formation Technology and Mould Design

**Enterprise Internship (2 credits)**

**Course code**: b4011067

**Suitable majors**: Information Management and Information System

**Instructor**: Yang Jinghui, Luo Shoucheng, Yang Ying, Zhang Jianming

**Brief introduction:**

Since the 2nd Grade, the students are organized to take internship in enterprises with no less than 6 months of internship. The school and the enterprise assign one mentor for each student.

**Prerequisite:** Management Information System, Database Theory and Application, Basic Program Design

**Course Design of Auto CAD (1 credit)**

**Course code**: b4011068

**Suitable majors**: Traffic and Transportation

**Instructor**: Yao Ling

**Brief introduction:**

This course introduces the application of auto design software in auto design, moudling and analysis together with the course of auto CAD/CAM.

**Practice of Auto Structure (4 credits)**

**Course code**: b4011069

**Suitable majors**: Traffic and Transportation

**Instructor**: Zhou Ping, Zhang Xian, Yao Ling and others

**Brief introduction:**

The course introduces the auto structure, including the engine structure, chassis structure, auto appliance and others.

**Reference book:**

Self-edited textbook, Research and Instruction Group of Vehicle, Research and Instruction Group of Vehicle

**Course Design of Auto Theory (1 credit)**

**Course code**: b4011070

**Suitable majors**: Traffic and Transportation

**Instructor**: Lin Qingzhi

**Brief introduction:**

The course introduces the computing of auto dynamic performance and economy.

**Reference book:**

Self-edited textbook, Research and Instruction Group of Vehicle, Research and Instruction Group of Vehicle

**Course Design of Auto Design (1 credit)**

**Course code**: b4011071

**Suitable majors**: Traffic and Transportation

**Instructor**: Jiang Miaofan

**Brief introduction:**

This course introduces the design of auto chassis system like clutch, transmission, steering system and braking system.

**Reference book:**

Self-edited textbook, Research and Instruction Group of Vehicle, Research and Instruction Group of Vehicle

**Practice of Auto Manufacturing Technology (4 credits)**

**Course code**: b4011072

**Suitable majors**: Traffic and Transportation

**Instructor**: Zhou Ping, Zhang Xian, Yao Ling and others

**Brief introduction:**

This course introduces the practice of advanced auto manufacturing technology, like the operation of industrial robot, operational management of automatic production line and others.

**Reference book:**

Self-edited textbook, Research and Instruction Group of Vehicle, Research and Instruction Group of Vehicle

**Practice of Auto Assembly Technology (4 credits)**

**Course code**: b4011073

**Suitable majors**: Traffic and Transportation

**Instructor**: Zhou Ping, Zhang Xian, Yao Ling and others

**Brief introduction:**

This course introduces the practice of typical auto assembly like transmission, clutch, driving axle and others.

**Reference book:**

Self-edited textbook, Research and Instruction Group of Vehicle, Research and Instruction Group of Vehicle

**National Undergraduate ERP Sand Table Contest (3 credits)**

**Course code**: b4011074

**Suitable majors**: Information Management and Information System

**Instructor**: Yang Jinghui, Luo Shoucheng, Yang Ying, Zhang Jianming

**Brief introduction:**

This course introduces the business process of enterprises through the interesting way of sand table.

**Reference book:**

Practice of UFIDA ERP Supply Chain Management, Zhao Jianxin, Tsinghua University Press

**Prerequisite:**

ERP Theory and Application

**National Undergraduates E-commerce Contest (3 credits)**

**Course code**: b4011075

**Suitable majors**: Information Management and Information System

**Instructor**: Yang Jinghui, Luo Shoucheng, Yang Ying, Zhang Jianming

**Brief introduction:**

This project improves the students’ innovation ability and business thoughts, explores their horizon and strengthens their teamwork spirit.

**Prerequisite:** Specialty Practice

**Elementary Internship (1 credit)**

**Course code**: b4011076

**Suitable majors**: Mechanical and Electronic Engineering

**Instructor**: Wang Zhenhua

**Brief introduction:**

This course provides a chance for the students to have a sensible idea of the major of mechanic and electric engineering before the study of basic specialty courses through the observation in enterprises and the lecturing of the enterprise engineers.

**Business Intelligent Method and Big Data Visualization (1 credit)**

**Course code**: b4011077

**Suitable majors**: Information Management and Information System

**Instructor**: Luo Shoucheng

**Brief introduction:**

This course introduces the concept, methods and application of business intelligence for the undergraduates with the major of information management and information system and cultivates the students’ ability to analyze information and acquire knowledge with big data in informationalized society so as to support the management decision.

**Reference book:**

Business Intelligent Methods and Application, Chen Guoqing, Tsinghua University Press

**Prerequisite:** Information Resource Management

**Course Design of Production Plan and Control (2 credits)**

**Course code**: b4011078

**Suitable majors**: Industrial Engineering

**Instructor**: Wang Xiaogang, Nie Li, Xia Yanchun

Brief introduction

This course strengthens the students’ understanding of production management theory and methods, cultivates the students’ ability of factory layout and production site optimization design in accordance with the operational status of the enterprise. The students are also required to compile the material need plan and capacity plan with application software, know the main functional modules of business ERP system and master the basic operation of RP system.

**Reference book:**

Instruction for Course Design of the Major of Industrial Engineering, Jiang Zuhua, Miao Rui, Chen Youling, China Machine Press

**Practice of Visual Testing Technology (1 credit)**

**Course code**: b4011079

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Feng Rongda, Dou Jianfang

**Brief introduction:**

This course takes 80C51 series single chip machine as the object, takes the improvement of students’ application ability as the course objective, and tries to improve the students’ practical skills and application level of single chip machine based on the single chip machine 3000TB experiment/simulation system. The course contents are divided into three parts: the first is the function introduction and module analysis of single chip machine 3000TB experiment/simulation system; the 2nd part is the most basic and ordinary experiments of single chip machine, including the software experiment, MCS-51 input/output interface experiment, breaking experiment, timer/counter experiment, common interface circuit experiment and serial communication interface extension experiment of the single chip machine, so as to cultivate the experimental ability of the students and strengthen their understanding of the single chip machine; the 3rd part introduces the comprehensive and extensive experiment of the functional module of the single chip machine, so as to improve the application ability and programming skills of the students. It is a practical training, and it is also a basis for the future development of the engineering project.

**Reference book:**

Instruction for Experimental Practice of Single Chip Machine Technology, Zhou Yue, China Water and Power Press

**Practice of NC Programming and Processing (2 credits)**

**Course code**: b4011080

**Suitable majors**: Mechanical Engineering

**Instructor**: Shen Xindi, Zhu Hongfeng

**Brief introduction:**

This course is a specialty core course for the major of NC technology, a course focusing on the ability cultivation and combining theory and practice. The course focuses on the NC machine tool and programming, takes the training of NC machine tool component processing skills as the goal, embedding the knowledge of machine tool, knifeware, clamp, measurement tool, processing technology, programming and others into different processing case studies, so as to cultivate the students’ ability to select the NC machine tool processing method and program or operate the NC lathe and milling machine tool.

**Reference book:**

NC Processing and Practice, Zhou Xiaohong, China Electric Power Press

**Prerequisite:** Mechanic Manufacturing Technology, NC Machine Tool and Programming

**Practice of NC Technology and Skills (3 credits)**

**Course code**: b4011081

**Suitable majors**: Mechanical and Electronic Engineering

**Instructor**: He Yu’an, Yang Shuzhen

**Brief introduction:**

Based on the understanding of related NC system knowledge and mastering of the composition and working theory of NC system the students are required to get familiar with the operation and programming of NC system, especially the connection, starting, regulation, parameter adjusting, PLC program modification of NC machine tool system (SIEMENS 802S system and FANUCOi system).

**Practice of NC Processing (1 credit)**

**Course code**: b4011082

**Suitable majors**: Mechanical and Electronic Engineering

**Instructor**:

**Brief introduction:**

This course introduces the compiling of the NC processing technology documents and the technological analysis of mid-level complicated typical component (NC machine tool, NC boring milling machine).

The students are required to understand the basic knowledge of NC processing technology documents compiling, select and determine the rough cast, facility, knifeware, clamp, measurement instrument and cutting amount, have the ability of NC processing design and sequence design, have the ability of process design and sequence design of NC processing and compile the NC processing technological cards.

**Reference book:**

Self-edited textbook

**Practice of NC Facility Fault Analysis and Maintenance Skills (2 credits)**

**Course code**: b4011083

**Suitable majors**: Mechanical and Electronic Engineering

**Instructor**: An Shuangli, Cai Zhiyong

**Brief introduction:**

Through the analysis, diagnosis, positioning and elimination of typical faults of NC machine tools, this course introduces the basic thoughts, judging principles, basic methods and detailed execution steps of NC machine tool fault diagnosis and maintenance.

**Practice of Digital Applied Electric Circuit (1 credit)**

**Course code**: b4011084

**Suitable majors**: Automation

**Instructor**: Song Haihui, Hu Zhihua, Xu Jie and others

**Brief introduction:**

Through this course, the students are required to master the installation and regulation of sinusoid, square-wave, triangle-wave generator, digital timer, single shoot control shift register, loop counter of shift register.

**Reference book:**

Installation and Maintenance of Applied Electric Circuit, Song Haihui, Self-edited

**Prerequisite:** Digital Electric Technology

**Course Design of Plastic Formation (2 credits)**

**Course code**: b4011085

**Suitable majors**: Material Formation and Control

**Instructor**: Qing Mingying

**Brief introduction:**

This course introduces the plastic mould Design of mid-level complicated plastic component, cultivates the students’ ability to understand and analyze the design tasks, the ability to compile plastic formation technology processing documents, the ability to design plastic moulds, the ability to compile mould processing technological documents, the ability to analyze and solve problems using theories with strict and scientific work attitude.

**Reference book:**

Instruction of Plastic Mould Design, Wu Xianming, Defense Industry Press

**Prerequisite:** Polymer Moulding Technology and Mould Design

**Course Design of System Modeling and Simulation (2 credits)**

**Course code**: b4011086

**Suitable majors**: Industrial Engineering

**Instructor**: Bai Yuewei, Wang Xiaogang, Nie Li and others

**Brief introduction:**

This course cultivates the students’ ability to build up the abstract simulation model of actual production system, simulate with related simulation software, analyze the simulation results and problems existing in production system, with a high requirements on the students’ practical ability. It is also a compulsory specialty course for the major of industrial engineering. This course stresses the basic theory, knowledge and methods from the perspective of instructional contents. From the perspective of practical ability cultivation, it stresses the training of basic skills to build up and apply simulation models. The experiment on production system modeling and simulation is the essential important instructional contents as one of the practical steps of the course. Through PC experiments, the students’ understanding of the instructional contents, theories, basic methods of modeling and simulation, related software is improved.

**Reference book:**

Promodel-based System Simulation Cases, Wang Hao, Tsinghua University Press

**Modern Measurement Technology Practice (2 credits)**

**Course code**: b4011087

**Suitable majors**: Industrial Engineering

**Instructor**: Bai Yuewei, Pan Fangyu

**Brief introduction:**

Modern Measurement Technology Practice is an important instructional step after the completion of related theoretical courses, which is completed by the students under the instruction of teachers. The students are required to master and apply the learned contents flexibly through practice. Through course design, the students’ understanding of the learned theoretical knowledge of measurement technology is improved and the students are able to master the general methods or steps of system design, get familiar with the theory and selection of sensors, analyze the signals with simulation device software and get the testing results.

**Reference book:**

Basic Test Technology of Mechanical Engineering, Huang Changyi, Yan Puqiang, China Machine Press

**Modern Engineering Drawing Design (2 credits)**

**Course code**: b4011088

**Suitable majors**: Material Formation and Control, Industrial Engineering, Mechanical Engineering, Traffic and Transportation

**Instructor**: Yuan Qun, Zhang Weiyuan, Wu Jun and others

**Brief introduction:**

Modern Engineering Drawing Design cultivates the students’ engineering practical ability through the practice of dissembling, test, rough drawing design of components, assembly drawing design of component, based on the completion of courses of modern engineering drawing I (including projection method, three-view drawing, ensemble and expression) and modern engineering drawing II (including the expression of mechanic standard component, common component, component drawing and assembly drawing). The main purposes of this course include: 1. Master the dissembly of the mechanic facility; 2. Master the drawing of mechanic components; 3. Master the expression and drawing of component rough drawing and work drawing; 4. Master the expression of assembly drawing of mechanic facility; 5. Draw a complete working drawing of mechanic facility (A1 size)

**Reference book:**

Modern Engineering Drawing Design, Self-edited

**Prerequisite:** Modern Engineering Frawing I and Modern Engineering Drawing II

**Basic Modern Engineering Drawing Practice (1 credit)**

**Course code**: b4011089

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Feng Rongda, Dou Jianfang

**Brief introduction:**

This course introduces the basic composition, functional feature, development trends of intelligent meter devices, emphasizes on the design of intelligent meter devices and the common hardware interfacing technology for the design of intelligent meter device (keyboard, LED/LCD, paralleled and serial connected micro-printer, communication interface and others) and the design of intelligent meter device based on the introduction of common microprocessors of intelligent meter devices. Besides, the course also introduces data processing technology (key floating point value computing program), common measurement and control computing methods (digital filtering wave, linear correction, range switching and scale conversion, PID control computing methods and others) and knowledge of anti-interference and self-diagnosis, different design flows and the comprehensive application of different technologies with the design examples of intelligent meter devices.

The course objective is to help the students understand the functional features, compositional modes and developments of intelligent meter device, master the common software and hardware technology commonly used in the design of intelligent meter devices and know the latest development of technologies based on the understanding of theory or basic applications of traditional meter device.

**Reference book:**

Design Basis of Intelligent Device, Zhao Xinmin, Ha’erbin Industrial University Press

**Prerequisite**: Computer Theory, Electric Circuit Design, Automatic Control Theory, Computer Communications

**Comprehensive Training of New Energy Power Generation System (2 credits)**

**Course code**: b4011090

**Suitable majors**: Automation

**Instructor**: Chen Jin, Xu Tao, Song Haihui

Brief instruction:

Through this course, the students receive basic experimental training of power generation technology of fuel cell and renewable energy like solar energy and wind energy, learn the operational process of double-feed wind turbine and FFIB, learn the solar energy power generation process, its loading features and monitoring system design, and learn the composition and monitoring technology of micro-grid.

**Reference book:**

Comprehensive Training of New Energy Power Generation System, Chen Jing, Self-edited

**Prerequisite:** Motor and Driving Technology, Electric Technology, Wind Power Generation Technology, Wind Turbine Monitoring and Control

**Graduation Internship and Graduation Design (Thesis) for the Major of Information Management and Information System (12 credits)**

**Course code**: b4011091

**Suitable majors**: Information Management and Information System

**Brief introduction:**

After the completion of compulsory courses and meeting the internship requirements, the students are required to finish the graduation design or thesis based on the internship experiences.

**Course Design of Information Statistics and Analysis Technology (1 credit)**

**Course code**: b4011092

**Suitable majors**: Information Management and Information System

**Instructor**: Yang Ying

**Brief introduction:**

The main tasks of this course include: do technical processing and analysis of the statistical documents with the statistical data processing analysis methods and computer applying technology. The course introduces the application of statistical data processing analysis software- the statistical products and service solution (the original social science statistical software) SPSS.

**Reference book:**

SPSS Statistical Analysis—From Basis to Practice, Luo Yingting and others, Publishing House of Electronics Industry

**Prerequisite:** Applied Statistics, Probability and Mathematical Statistics

**Internship of Virtual Instrument and Data Collection Technology (3 credits)**

**Course code**: b4011093

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Qing Qing, Tu Zimei

**Brief introduction:**

This course is one of the selective practical courses for the major of Measurement and Control Technology and Instrumentation. Through this course, the students are required to master the basic theory of DC and AC speed adjusting system, the systematical analysis and engineering design methods, apply the theory and methods of automatic control into the AC/DC speed adjusting system, and have the ability to solve practical problems with learned knowledge.

**Reference book:**

Movement Control Technology and Application, Li Weiping, Huazhong University of Science and Technology Press

**Prerequisite:** Circuit, Digital Circuit, Analog Circuit, Sensor Theory

**Practice of Instrument Control Technology (1 credit)**

**Course code**: b4011094

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Wang Sujuan, Dou Jianfang

**Brief introduction:**

This course mainly introduces the structural model and development of modern ATS, the GPIB and VXI bus interface technology and the design of its circuit, the information exchange control agreement, coding, common instruction and special standard instruction of device message of program control electric test instrument, working theory and design technology of GPIB test control, VXI embedded controller and VIX 0-slot model, the hardware platform of modern ATS and systematic integrated technology of test software platform.

**Reference book:**

Automatic Test and Interface Technology, Chen Changling, China Machine Press

**Prerequisite:** Industrial Bus Technology, Electric Measurement Technology

**Practice of Instrument Communication Technology (1 credit)**

**Course code**: b4011095

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Feng Rongda, Dou Jianfang

**Brief introduction:**

This course introduces the development and application of typical communication software in the field of measurement and control instrument application. The development software includes object-oriented language Visual Basic, monitoring group software KingView and virtual instrument software LabView. This course also covers the typical application of serial interface communication measurement and control system including the communication between PC machine and PC machine, PC machine and single chip machine, PC machine and intelligent instrument, PC machine and PLC, PC machine and GSM short message model, PC machine and distance I/O model, and the typical application of board card-based measurement and control system, including the input and output of analog values, input and output of switching value, pulse output and others. This course stresses the practical application and function realization and explains the detailed operational steps of each case with VisualBasic, KingView and LabView.

**Reference book:**

Computer Typical Measurement and control and Serial Interface Communication Development Software Application, Li Jiangquan, Publishing House of Electronics Industry

**Prerequisite:**

C Program Design, Microcomputer Theory and Application

**Internship of Instrument and Meter Application (1 credit)**

**Course code**: b4011096

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Jiang Xiaojun, Chen Baoyu

**Brief introduction:**

This course takes LabView as the development platform and NI PCI-6112 DAQ card as the data collection hardware, corresponds the front panel of virtual instrument to panel of traditional instrument, virtual instrument flowchart to traditional instrument’s internal circuit, and realizes the typical test instrument’s design of time domain, frequency domain and data domain with one data collection card on one common computer. This course practices the new model to build up the electric lab, so that the students can design and build up their personal electric measurement labs.

**Reference book:**

Building of Personal Labs Based on Virtual Instrument Technology, Lu Qirong, Publishing House of Electronics Industry

**Prerequisite:** Electric Measurement Technology

**Course Design of Operational Science (1 credit)**

**Course code**: b4011097

**Suitable majors**: Industrial Engineering

**Instructor**: Bai Yuewei, Wang Xiaogang, Nie Li

**Brief introduction:**

This course helps the students to master the basic methods of modeling and solution of linear programming, integer programming, dynamic programming with the Lingo software, through the explanation on typical enterprise production management problems like production plan, warehouse management, path optimization and others.

**Reference book:**

Optimized Modeling Software LINDO/LONGO, Xie Jinxing, Xue Yi, Tsinghua University Press

**Practice of Movement Control Technology (1 credit)**

**Course code**: b4011098

**Suitable majors**: Measurement and Control Technology and Instrumentation

**Instructor**: Qing Qing, Tu Zimei

**Brief introduction:**

This course covers the development and features of movement control technology, the basic knowledge of movement control technology in the filed of mechanics, electronics, controlling and computer, the hardware development technology of movement control system and movement control algorithm, the typical application examples of movement control system including the movement control design of parallel machine tools, cutting machine, industrial robot and graving machine.

**Reference book:**

Movement Control Technology and Engineering Practice, Zheng Kuijing, China Electronics Press

**Prerequisite:** Electronic Driving and Automatic Control System, Electronic Technology

**Integration and Commissioning of Movement Control System (2 credits)**

**Course code**: b4011099

**Suitable majors**: Automation

**Instructor**: Wang Zhenghua, Hu Zhihua, Xu Tao and others

**Brief introduction:**

This course is a core specialty practical course for the major of automation, which requires the students to master the basic concepts of servo movement system through a 2-axle servo platform including servo motor, servo-driven coder, servo driver and movement driver.

**Reference book:**

Instruction of Movement Control System Integration and Commissioning Experiment, Wang Zhenghua, Self-edited

**Prerequisite:** PLC Practice, AC/DC Commissioning Practice and Servo Control Technology

**Course Design of Quality Management and Reliability (2 credits)**

**Course code**: b4011100

**Suitable majors**: Industrial Engineering

**Instructor**: Pan Fangyu

**Brief introduction:**

This course explores the thoughts of students, stresses their understanding of the learned knowledge, and cultivates their application ability, laying a basis for the quality control of production and service system. Through the experiments, the students are able to better understand and master: 1. Category, principle, basic steps and basic methods of customer satisfaction test; 2. The statistical theory of controlling drawings and the methods of observation and analysis with the quantity control chart and numerical control chart.

**Reference book:**

Quality Management and Reliability, Su Qing, China Machine Press

**Prerequisite:**

**Specialty Practice (1 credit)**

**Course code**: b4011101

**Suitable majors**: Information Management and Information System

**Instructor**: Yang Jinghui

**Brief introduction:**

This course provides a chance for the students to have a basic idea of the major and necessary tools, visit the specialty practical instruction basis and listen to the report of related experts.

**Reference book:**

Practical Instruction for the Major of Information Management and Information System, Zhang Jianming, Self-edited

**Prerequisite:** Basic Computer Culture

**Practice of Automatic Production Line Controlling Technology (2 credits)**

**Course code**: b4011102

**Suitable majors**: Automation

**Instructor**: Zheng Pu, Hu Zhihua

**Brief introduction:**

This course is the main experimental and training course for the major of electric technology, industrial automation and others. The course stresses the training of comprehensive practical skills of the students, to meet the society’s needs of the senior special talents. Thus, the training of the engineering application ability and onsite actual problem solution is the main purpose and task of the course.

Through experiments, the students are able to better understand the ordinary automatic production line system and master the basic theories of pneumatic and hydraulic technology, sensor technology, electric control and PLC technology, so as to improve the students’ practical operational ability.

**Reference book:**

Experimental Instruction of Automatic Production Line Practice, Zheng Pu, Self-edited

**Prerequisite:**

Movement Control System, Servo Control Technology, Assembly and Commissioning of Controller

**Graduation Internship and Graduation Design (Thesis) for the Major of Automation (12 credits)**

**Course code**: b4011103

**Suitable majors**: Automation

**Brief introduction:**

Graduation Design is an important step for the cultivation of students’ ability to analyze and solve practical problems and improve their innovative ability with their learned knowledge for the major of automation (new energy). It is also an overall test of comprehensive quality education and the cultivation results of the engineering practical ability. Through graduation design, the students are required to have the basic engineering practical ability of design.

**Specialty Internship for the Major of Automation (1 credit)**

**Course code**: b4011104

**Suitable majors**: Automation

**Instructor**: Hu Zhihua, Chen Jing, Song Haihui and others

**Brief introduction:**

It is a specialty introductory course for the freshman of automation majors. Through lectures, enterprise visit and industrial expo visit, the course introduces the concept of automation, specialty setting, talent cultivation objectives, the development history, structural composition, basic controlling methods, basic controlling system, application range, development forecast and learning methods of automation, laying a basis for the following specialty courses and helping the students have an initial understanding of the automation majors.

**Reference book:**

Introduction to Automation, Zhao Di, China Machine Press

**Factory Internship (1 credit)**

**Course code**: b4011105

**Suitable majors**: Traffic and Transportation

**Instructor**: Zhou Ping, Zhang Xian, Yao Ling and others

**Brief introduction:**

This course provides a chance for the students to visit the automobile or its component manufacturing company and learn.

**Reference book:**

Self-edited, Instruction and Research Group of Vehicle Engineering, Instruction and Research Group of Vehicle Engineering

*Specialty Course*

**College of Engineering**

School of Computer and Informational Engineering

**4G Mobile Communication Technology (2 credits)**

**Course code**: b2012001

**Suitable majors**: Communications Engineering

**Instructor**: Wang Liandong, Zhang Hua

**Brief introduction:**

Through this course, the students are able to master basic theories of 4G TD-LTE mobile communication network, the development history of 4G mobile communication, the structure and development of 4G network system, the system structure of 4G wireless network, 4G core network and basic signaling procedures and mobile broadband high-speed internet surfing. The students are required to understand the TD-LTE system theory and standards, master the TD-LTE network structure and interface agreement, signaling, process and the computing of wireless resource management and commissioning.

**Reference book:**

Theory and System Design of TD-LTE Technology, Wang Yingmin, Posts & Telecom Press

**DSP Theory and Application (English) (2 credits)**

**Course code**: b2012002

**Suitable majors**: Electronic Information Engineering

**Instructor**: Hu Jinyan, Gong Yumei, Yang Wenbo

**Brief introduction:**

This course is an extension of the theoretical course of digital signal processing, discussing the basic theory and common algorithm of DSP technology, general structural features, software system, programming methods and basic development or commissioning skills of DSP instruments or components. Through this course, the students’ understanding of the digital signal processing theory is improved further and the students are able to master the hardware structure, instructional system, development process and basic digital signal theoretical algorithm of DSP components with the representative of TMS320C6x and have the basic application ability of DSP component. The course is to cultivate the applied engineering technical talents for the digital signal processing in the related field of Electronic Information Engineering.

Course contents include TMS320C6x hardware structure, on-chip peripherals, interface and application of TMS320C6x, hardware design and instructional system of TMS320C6x, integrated development environment of DSP program, C language program design of TMS3206x.

**Reference book:**

DSP Application Using C and the TMS320C6x DSK, Chassasing, R, Publishing House of Electronics Industry

**Prerequisite:** Digital Signal Processing

**DSP Theory and Application (2 credits)**

**Course code**: b2012003

**Suitable majors**: Communications Engineering

**Instructor**: Dai Hong, Gui Ling

**Brief introduction:**

DSP Theory and Application is an important Specialty course for the major of Communications Engineering, Electronic Information Engineering, Measurement and Control Technology and Instrumentation. Digital Signal Processor, DSP is a kind of micro processor with special structure for the need of digital signal processing. The realization of digital signal processing system with DSP chips is the development trend nowadays. The purpose of this course includes the introduction of the system structure and basic theory of TMS320C55x series DSP chips manufactured by Texas Instruments, so that the students can get familiar with the development tool of DSP and its applications through the practice of DSP instructional tool box. The course contents include the digital signal processing and DSP system, hardware structure of TMS320C55x, instructional system of TMS320C550x, DSP integrated development environment CCS, development and test of on-chip integrated peripherals of TMS320C55x, software design of TMS320C55x.

**Reference book:**

TMS320C55XDSP Theory and Application (4th edition), Wang Chunmei, Publishing House of Electronics Industry

**Prerequisite:** Digital Signal Processing, C Language Program Design

**EDA Technology (3 credits)**

**Course code**: b2012004

**Suitable majors**: Computer Science and Technology

**Instructor**: Li Bin, Wang Zhenxing, Hou Dongliang

**Brief introduction:**

EDA Technology aims to help the students master the basic knowledge, structure and working theory of programmable logic components, design process of programmable logic components, using methods of basic EDA tool software and the method of digital electric system description with VHDL, laying a basis for the design and research of digital electric system.

The course stresses the instruction of the following contents: the structure and working theory of components, using methods of EDA tool software and method of digital electric system description with VHDL.

**EDA Technology and Application (2 credits)**

**Course code**: b2012005

**Suitable majors**: Communications Engineering

**Instructor**: Feng Yu

**Brief introduction:**

Through this course, the students are able to master the method of schematic diagram and PCB design with the software Altium Designer 10.0 which is the first choice for the common circuit panel design. The main contents of the course include the introduction of schematic diagram development environment, drawing of circuit schematic diagram, schematic diagram design, PCB design environment, PCB drawing, PCB design, component group operation, simulation and others. Through this course, the students’ sensible understanding of the circuit related courses and their practical operational ability are improved, getting them ready for the related work in the future.

**Reference book:**

Altium Designer Schematic Diagram, PCB Design and Simulation, Xie Longhan, Lu Li, Zhang Guidong, Publishing House of Electronics Industry

**Prerequisite:** Circuit, Analog Electric Technology, Digital Electric Technology

**Java Program Design (2 credits)**

**Course code**: b2012006

**Suitable majors**: Software Engineering, Communications Engineering, Information and Computing Science

**Instructor**: Tang Shan, Wang An’bao, Zhang Shiming, Zhu Bin

**Brief introduction:**

This course is a basic course for the computer program design language, with the purpose to instruct the basic program design senses and object-oriented thoughts and improve the students’ computer application ability. Through this course, the students are able to master the basic knowledge of program design language, basic concept of object orientation and the basic methods or thoughts of program design. The students are also required to solve simple practical problems with the knowledge.

**Reference book:**

Basic Instruction of Java Object-oriented Program Design, Feng Honghai, Tsinghua University Press

**Java Program Design (3 credits)**

**Course code**: b2012007

**Suitable majors**: Computer Science and Technology

**Instructor**: Shi Lingxiang and Chen Ling

**Brief introduction:**

1. This course takes Java language as the descriptive language of the program, requiring the students to understand the basic concepts of the program design and learn to process the world data and electric data with the program design language, stressing the necessary of industrial standardized programming practice.
2. This course requires the students to build up Java programs with Java language, get familiar with one development platform, describe and use the objective-oriented features of Java language, realize the input, output and document operation of program, develop graphic user interface with AWT and Swing, and control the program execution and define the abnormal operation of users with the abnormal processing system of Java language.

**Linux Operation System (2 credits)**

**Course code**: b2012008

**Suitable majors**: Information and Computing Science

**Instructor**: Jiang Cunli, Wang An’bao, Liu Min

**Brief introduction:**

This course introduces the basic operation and use of common instruction of Linux operation system, the function and using methods of programs in the graphic interface. The students are required to use open source big data analysis engine in the Linux operation system, understand the technological background, installation and configuration, structure, operational methods, performance optimization and related application design principles and cases of open source big data.

**Reference book:**

Open Source Big Data Analysis Engine Impala, Jia Chuanqing, Tsinghua University Press

**Prerequisite:** Operation System, Data Structure, Introduction to Database System

**Metlab Simulation and Application (2 credits)**

**Course code**: b2012009

**Suitable majors**: Optical Information Science and Engineering

**Instructor**: Shao Yufeng, Wang Liandong

**Brief introduction:**

The purpose of this course is to help the students master the basic theories, experimental skills and Specialty technologies of MATLAB simulation and cultivate applied senior engineering technical talents of software development, design and programming for the field of Optical Information Science and Engineering. The course contents include some key technologies of simulation signal and linear system, random process, analog modulation, analog-digit transformation, baseband digital transmission, digital transmission of band-limit signal channel, digital transmission of carrier modulation, spread spectrum communication system and digital modulation.

**Reference book:**

Modern Communication System: MATLAB, (US) Proxmire, Publishing House of Electronics Industry

**Prerequisite:** Data Structure and Algorithm

**MudBox Digital Graving (2 credits)**

**Course code**: b2012010

**Suitable majors**: Digital Media Technology

**Instructor**: Zheng Lei

**Brief introduction:**

This course introduces the methods, process and key points of Mudbox graving model, mapping and export normal mapping, so that the students can understand the application process of digital graving in 3D automation design and the skills of coordination with other software.

**Reference book:**

Self-edited textbook (electric version), Zheng Lei

**Prerequisite:** 3D Automation Design

**Web Program Design (3 credits)**

**Course code**: b2012011

**Suitable majors**: Software Engineering

**Instructor**: Wen Wen

**Brief introduction:**

Through this course, the students are able to master the application of network programming language, design Web application programs with ASP. NET and understand the generation theory and editing methods of dynamic webpages, laying a basis for the website construction and maintenance. The students are also required to know the basic concepts and knowledge of ASP.NET, understand the generation theory of dynamic webpage and the methods of dynamic webpage’s visit to Web database. The students shall also master the basic using theory and programming methods of C# language, the C# based ASP.NET program development technology, the production of interactive webpage based on database visit, and the programming technology in the ASP.NET based network environment.

**Reference book:**

Web Program Design Cases, Guo Wenyi, China Machine Press

**Prerequisite:** HTML, Introduction to Database System

**Web Development Technology (3 credits)**

**Course code**: b2012012

**Suitable majors**: Intelligent Science and Technology

**Instructor**: Du Yi, Wang Shuai, Yang Wenjing

**Brief introduction:**

The course objective is to help the students master basic JavaWeb development technologies after the learning of object-oriented technology and program design. The course contents include the development of web development technology, basic knowledge of web system development technology of HTTP, HTML and others, other related development technologies like Servlet and JSP, MVC design mode. Through the whole process of instruction, the course, progressively leads the students to learn different knowledge by explaining one complete practical Java Web development project.

**Reference book:**

Instruction of Java Web Development, edited by Sun Xia, Tsinghua University Press

**Prerequisite:** Basic Program Design, Data Structure and Algorithm

**XML and its Application (2 credits)**

**Course code**: b2012013

**Suitable majors**: Software Engineering

**Instructor**: Wen Wen

**Brief introduction:**

Through this course, the students are required to understand the development, constraint rules, storing and accessing methods of XML files, the basic grammar of XML language, know the effectiveness verification of XML files with DTD, XSD and the differences between each other, acquire the method of showing XML files with XSL language, the basic grammar and simple application of XQuery, the programming thoughts, common property and methods of DOM, the basic concept of data interchange and SQL Server 2005’s support to XML.

**Reference book:**

Self-edited Textbook of XML and Its Application, Wen Wen, Shanghai Polytechnic University Press

**Prerequisite:** HTML, WEB Development Technology

**Compilation Technology (2 credits)**

**Course code**: b2012014

**Suitable majors**: Software Engineering

**Instructor**: Wang Na

**Brief introduction:**

Compilation Technology is an important compulsory Specialty course for the major of computer, which is also an important branch of computer system software. The realization of any computer language can’t complete without the compilation technology. Thus, the study of basic composition theory and realization technology of compilation procedures is very necessary for the future study, research and work.

The course contents include 4 main compilation stages: lexical analysis, grammar analysis, semantic analysis and target code generation, emphasizing on the first 3 stages’ software technologies and methods. Through this course, the students are able to build up a complete compilation system model, master the working theory of compilation program and the main algorithm of lexical analysis, grammar analysis and semantic analysis.

**Reference book:**

Practical Instruction of Compilation Theory, Wen Jinghe, Tsinghua University Press

**Prerequisite:** Basic Program Design, Data Structure and Algorithm

**Compilation Theory (3 credits)**

**Course code**: b2012015

**Suitable majors**: Computer Science and Technology

**Instructor**: Wang Na

**Brief introduction:**

The course contents include 4 main compilation stages: lexical analysis, grammar analysis, semantic analysis and target code generation, emphasizing on the first 3 stages’ software technologies and methods. Due to the limited course hours, the course simplifies the theoretical part of the compilation theory and deletes the unpractical compilation methods. Through this course, the students can build up a relatively complete compilation system model, master the working theory of compilation procedures and main algorithm of lexical analysis, grammar analysis and semantic analysis.

**Operation System (2 credits)**

**Course code**: b2012016

**Suitable majors**: Computer Science and Technology, Software Engineering, Network Engineering, Intelligent Science and Technology

**Instructor**: Zhang Shiming, Zhu Bin, Cao Xiaoxia, Wang Na, Sha Limin

**Brief introduction:**

Operation System is an important core course for the major of computer science and technology, software engineering and network engineering. Operation system is the most basic interface for the users to use computers. Through this course, the students are able to understand the basic theories of operation system and explain how to realize some basic theories in the main stream operation system with examples, laying a good basis for the computer application.

**Reference book:**

Computer Operation System, Tang Ziying, Xidian University Press

**Measurement and Control Technology and Instrumentation (3 credits)**

**Course code**: b2012017

**Suitable majors**: Computer Science and Technology

**Instructor**: Hou Dongliang, Li Bin

**Brief introduction:**

The purpose of this course is to cultivate the students’ measurement ability. The course mainly introduces the basic theory and methods of measurement technology, common voltage measurement instrument, frequency domain measurement instrument, component parameter measurement meter, intelligent instrument, the automatic test technology, virtual instrument test technology, electric signal test and theory, performance and use of common signal generator and other measurement instruments.

**Basic Program Design (4 credits)**

**Course code**: b2012018

**Suitable majors**: Electronic Information Engineering, Optical Information Science and Engineering, Computer Science and Technology, Software Engineering, Digital Media Technology, Communications Engineering, Network Engineering, Information and Computing Science, Intelligent Science and Technology

**Instructor**: Lin Shiwei, Cui Lili, Zhou Hanping, Shi Hong, Xia Tian, Lu Hong, Zhang Shiming, Yang Wenjing

**Brief introduction:**

This course mainly introduces the thoughts and methods of program design and the skills to realize it. The course contents include the basic program design thoughts, concept, skills, good program design style and procedural program design, including data types, controlling structure and all kinds of common algorithm. Through the VC++ 6.0 IDE practice, the students are required to master the most common and most basic data type, expression, sentences, function, data groups, pointer and documents, and understand the programming and commissioning skills of process program, to realize the purpose of computing thoughts to program realization. Besides, as the first programming course and due to the cooperative development features of programming, it is also an import course to cultivate the good learning methods and teamwork spirit of the students.

**Reference book:**

C Language Program Design (2nd edition), He Qinming, Higher Education Press

**Sensor and Computer Interface Technology (3 credits)**

**Course code**: b2012019

**Suitable majors**: Computer Science and Technology

**Instructor**: Huang Lijia, Hou Dongliang

**Brief introduction:**

This course mainly introduces the basic knowledge of automatic test technology, working theory, basic structure, main performance, test circuit and application methods of common sensors, the signal processing, interference suppression technology of test system and some new sensors. This course tries to reflect the new technologies and development trends of modern automatic technology, helping the students have an overall understanding of the computer controlling system and intelligent test system on the basis of learning the knowledge of automatic test technology and common sensors.

**Single Chip Machine Theory and Application (2 credits)**

**Course code**: b2012020

**Suitable majors**: Communications Engineering

**Instructor**: Gu Yang, Xu Guanjie, Chai Yu

**Brief introduction:**

Single Chip Machine Theory and Application is an important basic Specialty course for the major of Electronic Information Engineering, automation, Measurement and Control Technology and Instrumentation.

This course systematically introduces the composition theory of MCS-51 single chip machine, instructional system, assembly language program design, system extension, interrupt system, parallel and serial connection interface technology and bus, discusses the design, development, commissioning and fault diagnosis of single chip machine application system with examples, and explains the C language and assembly language programming technology.

Through the study of composition theory and interface application technology of micro single chip computer, this course lays a basis for the study of embedded application technology in the future.

**Reference book:**

Theory and Interface Technology of Single Chip Machine (3rd edition), Li Chaoqing, Beihang University Press

**Prerequisite:** Circuit, Digital Electric Technology

**Single Chip Machine Theory and Application (3 credits)**

**Course code**: b2012021

**Suitable majors**: Electronic Information Engineering, Automation

**Instructor**: Gu Yang, Xu Guanjie, Chai Yu

**Brief introduction:**

Single Chip Machine Theory and Application is an important basic Specialty course for the major of Electronic Information Engineering, automation, Measurement and Control Technology and Instrumentation. This course systematically introduces the composition theory of MCS-51 single chip machine, instructional system, assembly language program design, system extension, interrupt system, parallel and serial connection interface technology and bus, discusses the design, development, commissioning and fault diagnosis of single chip machine application system with examples, and explains the C language and assembly language programming technology. Through the study of composition theory and interface application technology of micro single chip computer, this course lays a basis for the study of embedded application technology in the future.

Theory and Interface Technology of Single Chip Machine (3rd edition), Li Chaoqing, Beihang University Press

**Prerequisite:** Circuit, Digital Electric Technology

**Electromagnetic Field and Electromagnetic Wave (2 credits)**

**Course code**: b2012022

**Suitable majors**: Electronic Information Engineering

**Instructor**: Gui Ling, Yang Wenbo

**Brief introduction:**

Course objective: help the students master the related theory, law of electromagnetic field and the physical meaning and mathematical expression of Maxwell equations, get familiar with the constructing process and analysis methods of math model of some important electromagnetic field (like wave equation and Laplace equation and others), and have the correct thinking methods and ability to analyze problems. The students shall have the view of “field” to observe, analyze and compute some simple typical field problems.

Course content: this course introduces the definition and express of [gradient of Scalar field](http://www.baidu.com/link?url=MhBd3vV6RkZA3AZFHWqUblIYftg9GRuMKzmQN8PHmWtRne2Sf2xbd_eef-iAyWTYhTPwAcP5cUfKQtdBg6lPee6lac_wLDmMkJB-rZfp_m_h5infdtkDoamFIMfU7ooh0RXoIt6xYkswXPI0-fMCH_), [divergence and curl of vector field](http://www.baidu.com/link?url=gwjDe_vIFUcOsQS0_Xi_4zjTBfcYSGP6NaI_J_Od5PAltiXqExQ-aIbTcELzPENAuRow_Q2j06-43qXwPNxaCi3JFWKWLq9gZj3NZS4_k0aGEQdLlsXyOtCvP4oKxfdbPf8svznkn4-ngrq-B6leBa), the basic equation and boundary conditions of static electromagnetic field, the Maxwell equation and boundary conditions of time-varying electromagnetic filed, the definition and its applications of [electric scalar potential](https://www.baidu.com/link?url=AsKsvrLCHBwj4ZyulJ9ZK1DW_ifg3E-P2jDovSo6f_m8kKxmmvCvB0uZ_EFp6vm6ehNRz75tNBO476dY-n6C61PyN9yg8a3ykWZD7b6vTC8WZbMlEL79HiybcR4ubFsb&wd=&eqid=db509a8400005f5a00000003577e2474) and [magnetic vector potential](http://www.baidu.com/link?url=sgc0NsoaQCXzwuRLu-0kFc2T1CdoLvDtIcmGpWfApOEWA9HDaEGkqXLz6FMKtWO6WlYs1-CnCyvdOVXSZqqQd2W415g0eYvRZ7BTmO62eE4ZUs4lTABus4NPzeQaP7JB), the physical meaning of electromagnetic power density, pointing vector and energy theorem; the expression of complex vector of sinusoidal electromagnetic field, the transmission features of plain electromagnetic wave in perfect media and conducting media, the radiation features of current source, dipole aerial and paraboloidal aerial and the working theory of aerial.

**Reference book:**

Electromagnetic Field and Electromagnetic Wave (2nd edition), Jiao Qixiang, Science Press

**Prerequisite:** Basic Circuit Analysis, Analog Electric Technology, Digital Electric Technology

**Electromagnetic Field and Electromagnetic Wave (3 credits)**

**Course code**: b2012023

**Suitable majors**: Optical Information Science and Engineering

**Instructor**: Fang Anle, Shao Yufeng

**Brief introduction:**

This course starts from the introduction of electromagnetic model, systematically and detailedly introduces the basic theory of electromagnetic field and electromagnetic wave with different design examples, including electrostatic field, magetostatic field, steady flow field, boundary value problem, time-varying electromagnetic filed and Maxwell Equation, plain electromagnetic wave and its transmission, transmission wire, impedance chart, micro strip line, waveguide and resonant cavity, aerial and electromagnetic radiation, electromagnetic screening. Meanwhile, the course provides a large amount of exercises so that the learner can rapidly master the core contents of each chapter. At the end of the textbook, there’re answers to the exercises and bilingual glossary for the convenience of searching. Besides, the course contents can also flexibly used for the instruction of electromagnetic field and wave of undergraduates or graduates majored in science or engineering.

**Reference book:**

Electromagnetic Field and Electromagnetic Wave, (US) Chen Zhu, He Yejun, interpreted by Gui Liangqi, Tsinghua University Press

**Electromagnetic Field and Aerial (2 credits)**

**Course code**: b2012024

**Suitable majors**: Communications Engineering

**Instructor**: Gui Ling, Li Beibei

**Brief introduction:**

Electromagnetic Field and Aerial is an important basic Specialty course for the major of Electronic Information Engineering, the contents of which is the necessary composition of the knowledge structure of the undergraduates of Electronic Information Engineering majors. Through this course, the students shall have a basic understanding of the electromagnetic field theory and aerial technology, laying necessary basis for the study of Specialty courses like photoelectric technology, microwave technology, optical fiber communication, mobile communication and the research on electromagnetic engineering. In the filed of communication, no matter the wire communication or the wireless communication, the transmission and processing of signals in signal channels can’t be completed without the theoretical knowledge of electromagnetic field for the high frequency or signal speed. The research on electromagnetic field includes the generation, transformation, communication, transmission, emission, receiving and scattering of electromagnetic signals (high frequency, microwave and optical wave), the acquisition, processing and transmission of information (graphics, audio, position and transmission media performance).

**Reference book:**

Electromagnetic Field and Microwave, Wu Chunming and others, Peking University Press

**Prerequisite:** Advanced Mathematics, College Physics

**Basic Circuit Analysis (2 credits)**

**Course code**: b2012025

**Suitable majors**: Electronic Information Engineering, Optical Information Science and Engineering, Computer Science and Technology, Software Engineering, Digital Media Technology, Communications Engineering, Network Engineering, Intelligent Science and Technology

**Instructor**:

**Brief introduction:**

This course introduces the basic theory of DC and AC circuit, the application of Kirchhoff Law, superposition theorem, Thevenin’s theorem, and the knowledge about the transformer and transient process circuit.

**Reference book:**

Basic Circuit Analysis, Li Hansun, Higher Education Press

**Electric Measurement and Test (2 credits)**

**Course code**: b2012026

**Suitable majors**: Electronic Information Engineering

**Instructor**: Wang Jianjun, Yang Wenbo

**Brief introduction:**

Course objective: help the students know the most basic theory and measurement methods of electric measurement, have the ability of measurement deviation analysis and data processing, improve their practical ability and innovative ability, laying a basis for the measurement and experiment in the field of Electronic Information Engineering.

Course content: basic theory of electric measurement, measurement deviation and practical application; the basic concept, technical methods and system composition of measurement, the deviation theory and data processing, the basic electric parameter measurement, including frequency, voltage, impedance, time domain measurement, frequency domain measurement, the basic testing theory and methods of digital system, including typical examples of generation, logic analysis, testability design and digital system test of digital signals, the integration technology of test system including the hardware platform, software platform, bus standard, communication technology of the test system.

**Reference book:**

Electric Measurement Theory, Gu Tianxiang, Wang Houjun and others, China Machine Press

**Prerequisite:** Analog Electric Technology, Digital Electric Technology

**Humanoid Robot (3 credits)**

**Course code**: b2012027

**Suitable majors**: Intelligent Science and Technology

**Instructor**: Cao Xiaoling, Du Yi, Xue Jianxin

**Brief introduction:**

As an introductory course, through the introduction of humanoid robots, the course helps the students understand the related technologies, research and application of humanoid robot. The course contents include: the brief introduction of humanoid robot, NAO humanoid robot explanation, humanoid robot movement, humanoid robot sensing system, the application of visual sensors in humanoid robot and human-machine interactive system of humanoid robot.

**Reference book:**

Robot Program Design, Zhong Qiubo, Xidian University Press

**Prerequisite:** Basic Program Design, Data Structure and Algorithm

**Distributed Computation (2 credits)**

**Course code**: b2012028

**Suitable majors**: Information and Computing Science

**Instructor**: Wang Anbao and Wang Shuai

**Brief introduction:**

This course introduces the features, examples and challenges of distributed system, the system structure model and basic model, the interconnection of networks, inter-process communication, external data expression and compilation, customer-server communication and group communication, the communication between distributed objects, remote procedural call, event and notice, the operation system support, distributed document system, naming service and domain name system, index service and discovery service, time, event and process state, synchronous physical clock, logical time and logical clock, global state.

**Reference book:**

Distributed System: Concept and Design (5th edition), (UK) Cluris, China Machine Press

**Prerequisite:** Basic Program Design, Data Structure and Algorithm, Object-oriented Analysis and Design

**Function of Complex Variables Theory (2 credits)**

**Course code**: b2012029

**Suitable majors**: Information and Computing Science

**Instructor**: Xia Zhengwei, Shao Wenting

**Brief introduction:**

Function of Complex Variables is a basic course for the major of mathematics, which is an extension of real function theories of continuity, differential coefficient, integral, series and others for the complex. The course contents include:

1. Concept and C-R condition of analytic function, including the analytic conditions, elementary analytic function and its property.
2. Cauchy integral theory, including Cauchy integral law, Cauchy integral formula and infinite differentiability of the analytic function, Liouvill law, maximum modulus principle, Schwarz lemma and others.
3. Wierstrass Series Theory, including Talor law, Lanrent law, sole existence theorem, singularity analysis and others.

**Reference book:**

Complex Function, Instruction and Research Group of Advanced Mathematics of Xi’an Jiaotong University, Higher Education Press

**Prerequisite:** Mathematical Analysis

**Personal Software Process (2 credits)**

**Course code**: b2012030

**Suitable majors**: Software Engineering

**Instructor**: Tan Wen’an

**Brief introduction:**

Personal Software Process is a basic course with high practicability for the major of software engineering or computer application. With the outline of software process management, the main course contents include the software process standardization, software process standard system, software process maturity and related concepts or theories, the organizational management, need management, project management, quality management, technology management, integration management of software process and other procedures, methods or practice, and the framework, model and execution details of software process evaluation and improvement.

Through this course, the students are able to know the whole process of software development and maintenance, understand the framework, standard and meaning of software process, flexibly apply the software process model and master all kinds of management methods in the process of software development and maintenance to solve the problems in the software process and continuously improve the software process.

**Reference book:**

Software Process Management, Zhu Shaomin, Zuo Zhi, Tsinghua University Press

**Prerequisite:** Introduction to Software Engineering, Introduction to Management

**Optical Transmission System (3 credits)**

**Course code**: b2012031

**Suitable majors**: Optical Information Science and Engineering

**Instructor**: Shao Yufeng, Wang Liandong

**Brief introduction:**

The course objective: help the students master the basic theory, experimental ability and Specialty technology in the field of optical transmission system, cultivate the applied senior engineering technical talents for the optical transmission system design and development, photoelectric transmission test and maintenance in the field of Optical Information Science and Engineering. The course contents: introduce the identification of optical cable line instrument, connection of passive optical device and adjusting of link electrical level, electrical terminal functional test, optical terminal functional test, composition and test of typical optical transmission system, opening of optical transmission network, maintenance and management of optical transmission network, upgrading of optical transmission network and others.

**Reference book:**

Modern Optical Transmission System, Shao Yufeng, Self-edited textbook

**Prerequisite:** Communication Theory, Optical Network

**Photoelectric Test Technology (3 credits)**

**Course code**: b2012032

**Suitable majors**: Optical Information Science and Engineering

**Brief introduction:**

The course introduces the basic concept, knowledge of photoelectric test technology, structure, theory, feature parameter and application of all kinds of testing components, design of photoelectric test circuit, data collection of photoelectric signals and computer interfaces, the transformation and test technology of photoelectric signals, transformation mode and testing methods of photoelectric signals and typical application of photoelectric testing technologies.

**Reference book:**

Photoelectric Test Technology, Lei Yutang, China Measurement Press

**Prerequisite:** Basic Photoelectric Component

**Basic Photoelectric Component (3 credits)**

**Course code**: b2012033

**Suitable majors**: Optical Information Science and Engineering

**Instructor**: Fang Anle and Shao Yufeng

**Brief introduction:**

This course introduces the basic knowledge and latest application of semiconductor photoelectric components. The contents are made up of two parts. The first part introduces the basic knowledge of all kinds of semi-conductor luminous and light-absorbing component and its application in sensing technology and testing technology; the second part introduces the combined application of luminous and light-absorbing components with the representative of OPIC, like optical coupler, optical chopper, solid relay, IrDA and others.

This course can be used as the reference for the instruction of undergraduates or graduates majored in semi-conductor component, photoelectricity, sensing technology or for the reference of engineering technical persons in related field.

**Reference book:**

Basic Photoelectric Component and Application, Peng Jun, Science Press

**Prerequisite:** Communication Theory, Optical Network, Electromagnetic Field and Electromagnetic Wave

**Basic Optical Communication (2 credits)**

**Course code**: b2012034

**Suitable majors**: Communications Engineering

**Instructor**: Gui Ling, Shao Yufeng

**Brief introduction:**

Basic Optical Communication is a compulsory Specialty course for the major of Communications Engineering, the contents of which are important part of the knowledge structure necessary for the undergraduates majored in Communications Engineering, electric information science and technology.

Through this course, the students are required to master the optical transmission theory and features, basic composition, working theory, design consideration and algorithm of optical fiber communication system, the theory, structure, basic performance and main application of EDFA and OWDM system, understand the types, structure, theory and features of passive or active optical component, the structure and basic composition of optical network, the function and using method of optical fiber communication meters. The students shall also have the ability of analyzing and solving problems, the practical ability and basic experimental skills, laying a solid theoretical basis for the Specialty technical work in the field of optical fiber communication after graduation.

**Reference book:**

Optical Fiber Communication Technology, Qiang Shijing and others, Tsinghua University Press

**Prerequisite:** Electromagnetic Field and Aerial, Communication Theory

**Optical Communication Technology and Application (2 credits)**

**Course code**: b2012035

**Suitable majors**: Electronic Information Engineering

**Instructor**: Shao Yufeng, Fang Anle

**Brief introduction:**

Course objective: help the students master the basic theory of optical fiber communication and the composition of optical fiber digital communication system, understand the future and development of optical fiber communication, laying a solid basis for the future study of modern optical fiber communication technology. This course plays an active role in the improvement of application of the basic knowledge of optical and communication system, analog and digital communication.

Course contents: brief introduction of optical fiber communication, optical fiber transmission theory, optical source and optical emission machine, optical test machine and optical receiver, optical communication passive component, optical communication network and the development trend of optical communication.

**Reference book:**

Optical Communication Theory and Technology (2nd edition), Zhu Yong, Wang Jiangping, Lu Ling, Science Press

**Prerequisite:** Signal and System

**Optical Network (3 credits)**

**Course code**: b2012036

**Suitable majors**: Optical Information Science and Engineering

**Instructor**: Wang Liandong, Fang Anle

**Brief introduction:**

Considering the latest development of optical fiber communication and optical network technology, this course introduces the related knowledge and technologies of optical network technology. It first introduces the function of optical network technology in information network, the concept and composition of optical fiber communication network technology and its new technology, key technology, application and development trends. Then, it simply introduces the optical fiber, optical component and optical system in the optical network, high-speed optical transmission technology and the main optical network technologies, including optical transmission network technology, optical fiber access network technology, metro optical network technology, optical switch and intelligent optical network technology, all optical network technology and others. The course also provides some introduction on the application of all kinds of technologies, the network management theory and technology of optical network.

**Reference book:**

Optical Network Technology, Zhang Xinshe, Xidian University Press

**Prerequisite:** Communication Theory, Optical Network, Electromagnetic Field and Electromagnetic Wave

**Optical Fiber Communication System (2 credits)**

**Course code**: b2012037

**Suitable majors**: Optical Information Science and Engineering

**Instructor**: Shao Yufeng, Fang Anle

**Brief introduction:**

The course objective: help the students master the basic theory, experimental ability and Specialty technology in the field of optical fiber communication system, cultivate the applied senior engineering technical talents for the optical fiber communication system design and development, test and maintenance in the field of Optical Information Science and Engineering. The course contents: introduce the composition, development, features and development trend of optical fiber communication, the transmission theory and features of optical fiber, non-linear effect of optical fiber, composition and design of optical emission machine, structure and theory of optical test component, theory and application of optical amplifier, concept and general methods of dispersion compensation, theory, design and component of WDM system, new optical fiber communication technology and its application like coherent light communication, optical soliton communication, optical switching technology, all optical communication network and others.

**Reference book:**

Optical Fiber Communication (5th edition), Joseph C. Palais, Publishing House of Electronics Industry

**Prerequisite:** Communication Theory, Information Optics, Electromagnetic Field and Electromagnetic Wave

**WAN Access Technology (2 credits)**

**Course code**: b2012038

**Suitable majors**: Communications Engineering

**Instructor**: Zuo Jiancun

**Brief introduction:**

This course introduces WAN access technology, including the connection of all kinds of WAN connection like special wire connection, circuit switch connection, block-switch connection, PPT concept, PPT layered architecture, PPT configuration, PPT identify verification agreement CHAP and PAP, frame relay encapsulation, topology and mapping and how to configure frame relay in sub-interface, the network attacks and threats, how to make safeguarding strategy to protect network and facility, how to manage Cisco IOS image and configuration, ACL working theory and wildcard mask, dynamic ACL, reflexive ACL and time-based ACL, remote access methods, VPN and IPSec, DHCP, NAT and IPv6, the tools and methods to remove network errors.

**Reference book:**

CCNA Exploration: WAN Access, Bob, Posts & Telecom Press

**Prerequisite:** Basic Data Communication, LAN Switching Technology, Routing Protocol and Concept

**Millimeter Wave Communication Technology (2 credits)**

**Course code**: b2012039

**Suitable majors**: Optical Information Science and Engineering

**Instructor**: Shao Yufeng, Wang Liandong

**Brief introduction:**

Course objective: help the students master basic theory, experimental ability and Specialty technology in the filed of millimeter wave communication system and cultivate applied senior engineering technical talents for the optical fiber communication system design, development, test and maintenance in the field of Optical Information Science and Engineering. Course contents: introduce the basic concept, theory, system composition and communication protocol, engineering application and development of millimeter wave technology, transmission lines and components used for millimeter wave communication system devices, millimeter wave communication and channel features, code modulation and equalization in broadband digital optical communication, wireless broadband switching technology, millimeter wave satellite communication and ground communication system.

**Reference book:**

Millimeter Wave Communication Technology, Shao Yufeng, Self-edited textbook

**Prerequisite:** Communication Theory, Information Optics, Electromagnetic Field and Electromagnetic Wave

**Internet Protocol and System (3 credits)**

**Course code**: b2012040

**Suitable majors**: Network Engineering

**Instructor**: Ma Chuang

**Brief introduction:**

Course objective: understand the data transmission system of TCP/IP and master the TCP/IP based network application program development. Course contents: the basic concept, theory and methods of TCP/IP protocols, systematic introduction of TCP/IP network application program development, including socket programming, MFC network programming, multicast programming, Winlnet and MAPI and other application layer protocol development.

**Reference book:**

TCP/IP—Protocol Analysis and Application Programming, Li Feng, Chen Xiangyi, Posts & Telecom Press

**Prerequisite:** Data Structure, Basic Program Design, Computer Network

**Basic Drawing (3 credits)**

**Course code**: b2012041

**Suitable majors**: Digital Media Technology

**Instructor**: Li Kefeng

**Brief introduction:**

This course trains the sketch skills and provides chances for sketch practice.

**Reference book:**

Pencil Drawing: Elementary Courses of Pencil Drawing, Andrew Lumis, New World Press

**Laser Theory and Application (2 credits)**

**Course code**: b2012042

**Suitable majors**: Optical Information Science and Engineering

**Instructor**: Fang Anle and Shao Yufeng

**Brief introduction:**

This course is made up of two parts. The first part (from chapter 1 to chapter 5) introduces the basic theory of lasers, explains the physical concept of lasers, the relationship between output features of lasers and parameters of laser machines, trying to avoid too much theoretical computation and taking the selection and use of laser machine as the main objective; the second part (from chapter 6 to chapter 10) introduces the applications of lasers in metering, processing, medicine, information technology and frontier problems of modern technologies, emphasizing on the application thoughts and methods.

**Reference book:**

Laser Theory and Application (3rd edition), Chen Jiabi, Peng Runling, Publishing House of Electronics Industry

**Prerequisite:** Communication Theory, Optical Network, Electromagnetic Field and Electromagnetic Wave

**Computer System Structure (3 credits)**

**Course code**: b2012043

**Suitable majors**: Computer Science and Technology

**Instructor**: Kong Liangliang, Chen Ling

**Brief introduction:**

This course cultivates students’ ability of research and analysis of computer system from the perspective of overall structure and systematic analysis and helps the students build up the concept of whole machine. The course stresses the basic concept, theory, design principle and quantitative analysis methods of computer system structure.

The course objective is to help the students understand and master the basic thoughts of computer system structural technology from an overall perspective, build up the quantitative analysis thoughts and have the ability to design and evaluate computer system.

**Computer Graphics (2 credits)**

**Course code**: b2012044

**Suitable majors**: Digital Media Technology, Information and Computing Science

**Instructor**: Shi Qingping, Zhang Shiming

**Brief introduction:**

Computer Graphics researches on the theory, methods and technology of graph generation, processing and showing with digital computer.

**Reference book:**

Computer Graphics, Yin Hongxia, China Water & Power Press

**Prerequisite:** Basic Computer Application, Basic Program Design, Data Structure and Algorithm

**Computer Network (3 credits)**

**Course code**: b2012045

**Suitable majors**: Computer Science and Technology, Software Engineering, Network Engineering, Information and Computing Science, Intelligent Science and Technology

**Instructor**: Wang Jian, Si Taozhi, Wu Xiumei and others

**Brief introduction:**

Course objective: systematically master the basic theory and technology of computer network.

Course contents: concept, protocol, technology of system structure, physical layer, data link layer (including LAN), network layer, Traffic and Transportation layer, application layer.

**Reference book:**

Computer Network (6th edition), Xie Xireng, Publishing House of Electronics Industry

**Computer Composition Theory (3 credits)**

**Course code**: b2012046

**Suitable majors**: Computer Science and Technology, Software Engineering, Communications Engineering, Network Engineering, Intelligent Science and Technology

**Instructor**: Liu Zhongyuan, Yang Jie, Huang Lijia

**Brief introduction:**

Computer Composition Theory is a basic Specialty course for the undergraduates majored in computer.

The course objective is to help the students master the basic composition, theory, analysis method and design thoughts of different computer components and the interconnected overall unit composition technology, so as to master the organizational structure of computer and basic working theory of whole machine, laying a basis for the design and application of computer system.

**Interactive Digital Media Design (2 credits)**

**Course code**: b2012047

**Suitable majors**: Digital Media Technology

**Instructor**: Shi Hong

**Brief introduction:**

This course introduces the object-oriented features of ActionScript 3.0 from higher perspective.

**Reference book:**

Flash Action Script 3.0 From Elementary to Expert Level, Zhang Jingshe, Hu Dengtao, Tsinghua University Press

**LAN Switching Technology (2 credits)**

**Course code**: b2012048

**Suitable majors**: Communications Engineering

**Instructor**: Zuo Jiancun

**Brief introduction:**

This course introduces the LAN switching technology, including LAN design, basic concept and configuration of switcher, virtual LAN, VTP, STP, VLAN route, basic concept and configuration of wireless LAN and others.

**Reference book:**

CCNA Exploration: LAN Switching and Wireless, Wayne, Posts & Telecom Press

**Prerequisite:** Basic Data Communication

**Open Source Software Program Design (3 credits)**

**Course code**: b2012049

**Suitable majors**: Information and Computing Science

**Instructor**: Lin Shiwei, Zhou Hanping, Liu Min

**Brief introduction:**

Open source software is a kind of software published with the authentication certificate of open source coding software, so as to safeguard the user’s right to use and touch source codes freely. The course objective is to help the students master basic concept of open source software and the analysis of open source software’s source codes through theoretical instruction and experimental operation. Taking the typical open source software PHP program design language and MySQL database application as the main stream, the course requires the students to design dynamic interactive webpages for further design and development of dynamic website, making development of cheap dynamic website on the server terminal possible and laying a basis for the website development of graduation design.

**Reference book:**

PHP Application Development and Practice, Ma Jun, Posts & Telecom Press

**Prerequisite:** Basic Program Design, Introduction to Database System, Database Foundation and Application

**Application of Programmable Logic Component (English) (2 credits)**

**Course code**: b2012050

**Suitable majors**: Electronic Information Engineering

**Instructor**: Gong Yumei, Hu Jinyan, Yang Wenbo

**Brief introduction:**

Course objective: through this course, let the students understand the theory and features of FPGA/CPLD component and master the using methods of Quartus II/MAX PLUS development platform and program design procedures based on that platform and the methods of digital system design, simulation and verification with VHDL.

Course contents: this course introduces the basic theory of logical design, basic knowledge and senior themes of VHDL, design cases like combined logical circuit, sequential logical circuit, state machine, discusses the hardware test and testable design with senior design examples.

**Reference book:**

Digital Systems Design with VHDL, Charles, H. Roth. Jr. Publishing House of Electronics Industry

**Prerequisite:** Analog Electric Technology, Digital Electric Technology

**Visible Optical Communication (2 credits)**

**Course code**: b2012051

**Suitable majors**: Optical Information Science and Engineering

**Instructor**: Wang Liandong, Fang Anle

**Brief introduction:**

This course systematically introduces the basic theory, system structure, upper layer protocol and development trend of the visible optical communication. The course is divided into 9 chapters. The 1st chapter introduces the basic concept of visible optical communication, traces the development history and forecast the development trend; chapter 2-6 detailedly introduces the advanced technology used by visible optical communication, including the visible optical emission technology, signal channel modeling, receiving technology, modulation technology and balancing technology; chapter 7 is the content of high-speed VLC communication system experiment, giving the experimental results based on the technical theories covered in chapter 2-6; chapter 8 introduces the upper-layer protocol realized by visible optical communication; chapter 9 forecasts the future of visible optical communication technology.

**Reference book:**

LED Visible Optical Communication Technology, Chi Nan, Tsinghua University Press

**Prerequisite:** Communication Theory, Optical Network, Electromagnetic Field and Electromagnetic Wave

**Visible Program Design (3 credits)**

**Course code**: b2012052

**Suitable majors**: Software Engineering

**Instructor**: Zhang Shiming

**Brief introduction:**

Visible Program Design is a basic Specialty course for the major of computer. Through this course, the students are able to master the basic grammar of mother language C# of MS.NET framework, the theory and realization of object-oriented program design, the basic theory and methods of event driving procedures with visible development tools. The students shall master the related knowledge or skills to design Windows Form based .NET application program with C# language in VS development environment.

**Reference book:**

C# Programming Language Basis and Application, Zhang Shiming, Zhu Bin, China Railway Press

**Prerequisite:** Basic Program Design, Data Structure and Algorithm

**Broadband Optical Access Technology (3 credits)**

**Course code**: b2012053

**Suitable majors**: Optical Information Science and Engineering

**Instructor**: Wang Liandong, Shao Yufeng

**Brief introduction:**

This course is divided into 9 chapters. The first chapter introduces the function of access network in network construction and its development trend, network structure and common modulation technology, the uplink access method of access network, bidirectional access technology and PON technologies. Chapter 2 introduces the optical fiber and optical cable used in network access, passive and active device, and optical transceiver. Chapter 3 introduces the Ethernet, xDSL, SDH access, HFC access technology and triple-play concept, 3G access technology and development trend promoted by the operation enterprises and . Chapter 4-7 introduces the passive optical network access technology of APON, EPON, GPON and WDM-PON, like physical layer, frame structure and encapsulation, media access control and dynamic band broad distribution, operational maintenance and management and its industrialization process. Chapter 8 introduces the synchronization of PON especially 10 Gb/sPON and clock extraction, uplink sudden receiving and emission and distance measurement. Chapter 9 introduces the dynamic band broad distribution, business flow management and controlling technology.

**Reference book:**

Broadband Optical Access Technology, Yuan Rong, Publishing House of Electronics Industry

**Prerequisite:** Communication Theory, Optical Network, Electromagnetic Field and Electromagnetic Wave

**Broadband Access Technology and Application (2 credits)**

**Course code**: b2012054

**Suitable majors**: Communications Engineering

**Instructor**: Shao Yufeng

Course objective: help the students master the basic theories, experimental skills and Specialty technologies of broadband access and cultivate applied senior engineering technical talents of development, test and operation of product design and application technology for the field of broadband access system and network. The course contents include the concepts of traditional communication access network, IP access network and their differences, the interface and protocol of common access networks, detailed analysis of copper wire access technology, Ethernet access technology, Cable Modem access technology, wireless access technology, optical fiber access technology, wireless optical fusion access technology and the common transmission media and structural wiring of actual access network.

**Reference book:**

Broadband Access Technology, Tao Zhiyong, Peking University Press of Post and Telecommunication

**Prerequisite:** Communication Theory

**Routing Protocol and Concept (2 credits)**

**Course code**: b2012055

**Suitable majors**: Communications Engineering

**Instructor**: Zuo Jiancun

**Brief introduction:**

The main contents include the basic concept of communication and network, OSI and TCP/IP model, application layer and transmission layer protocol and service, IP address searching, network address editing and routing basis, data link layer and physical layer, Ethernet technology and its theory, network design and wiring, basic configuration of Cisco router and switcher.

**Reference book:**

CCNA Exploration: Routing Protocol and Concept, Rick, Posts & Telecom Press

**Prerequisite:** Basic Data Communication

**Routing and Switching Technology (2 credits)**

**Course code**: b2012056

**Suitable majors**: Network Engineering

**Instructor**: Yao Taozhi, Yang Ying

**Brief introduction:**

Course objective: understand and master the routing protocol and switching technology, get familiar with the configuration of routers and switchers. The course contents: basic network knowledge, system structure and basic configuration of routers, basic configuration of switchers, configuration of routing and static routing between VLANs, basic theory and configuration of RIP/OSPF/EIGRP protocol, basic theory and configuration of NAT/ACL, basic theory and configuration of WAN protocol, basic theory and configuration of spanning tree protocol, VOIP technology and its application, WLAN technology and its application.

**Reference book:**

Routing and Switching, Si Taozhi, China Railway Press

**Prerequisite:** Computer Network

**Object-oriented Program Design (2 credits)**

**Course code**: b2012057

**Suitable majors**: Computer Science and Technology

**Instructor**: Shi Linxiang, Chen Ling, He Haihui

**Brief introduction:**

Course objective: understand the basic thought of object-oriented program design, master the basic features of object orientation like encapsulation, inheritance and polymorph, master the function and application methods of one object-oriented program design language. The course mainly introduces the methods of object-oriented program design and basic concept of C++ language.

**Object-oriented Analysis and Design (2 credits)**

**Course code**: b2012058

**Suitable majors**: Software Engineering, Information and Computing Science

**Instructor**: He Haihui, Tang Shan, Cao Xiaoxia

**Brief introduction:**

Object Orientation Methodology is a comprehensive basic specialty course for the major of computers (computer science and technology, software engineering, network engineering and others) and the major of electric information, information management and information system, information and computing science. The course objective is to help the students understand the main concepts and features of object-orientation, master the basic framework of object-orientation analysis and the object-orientation analysis methods commonly used for the definition of problems, and master the framework of object-orientation design and the design methods commonly used for the system design. The course lays a basis for the development of effective and reliable large-scale system and the cultivation of reasonable system modeling and design thoughts. The course requires the students to master the analysis stage of object orientation, the basic strategy of identification of the relationship between object, property, operations, and the process of constructing need model and assistant model. Through the understanding of basic composition and usages of UML graphs, the students have a basic understanding of the object orientation analysis modeling and the importance of modeling in the whole software engineering.

**Reference book:**

Object-oriented Analysis and Design, Shao Weizhong, Yang Fuqing, Tsinghua University Press

**Prerequisite:** Introduction to Computer

**Object Orientation Technology (3 credits)**

**Course code**: b2012059

**Suitable majors**: Intelligent Science and Technology

**Instructor**: Du Yi, Xue Jianxin, Yang Wenjing

**Brief introduction:**

The course objective: understand the basic thoughts and concepts of object orientation technology and master Java program design. Course contents: basic data types, enumeration and array, operational character, expression and sentence, category, object and interface, some basic object-oriented principle, important design mode, common practical category, Java Swing graphic user interface, dialogue box, Java input and output flow, generic and collection framework, JDBC database operation, Java multi wire system, Java Network basis and Java Applet.

**Reference book:**

Java Object-oriented Program Design, (3rd edition), Geng Xiangyi, Zhang Yueping, Tsinghua University Press

**Analog Electric Technology (3 credits)**

**Course code**: b2012060

**Suitable majors**: Electronic Information Engineering, Optical Information Science and Engineering, Automation

**Instructor**:

**Brief introduction:**

Course objective: master the basic knowledge of semi-conductor, single pipe, analysis and computing of integrated amplified circuit and feedback circuit, application of oscillating circuit and DC voltage stabilizing circuit.

**Reference book:**

Basic Electric Technology—Analog Circuit, Kang Huaguang, Higher Education Press

**Analog Electric Technology (4 credits)**

**Course code**: b2012061

**Suitable majors**: Communications Engineering, Measurement and Control Technology and Instrumentation

**Instructor**:

**Brief introduction:**

Course objective: master the basic knowledge of semi-conductor, single pipe, analysis and computing of integrated amplified circuit and feedback circuit, application of oscillating circuit and DC voltage stabilizing circuit.

**Reference book:**

Basic Electric Technology—Analog Circuit, Kang Huaguang, Higher Education Press

**Pattern Recognition (2 credits)**

**Course code**: b2012062

**Suitable majors**: Intelligent Science and Technology

**Instructor**: Wang Tong

**Brief introduction:**

Course objective: through the instruction of basic theory and methods of pattern recognition and case analysis, cultivate the students’ ability to solve practical problems with the methods or skills of pattern recognition. Course contents: this course introduces the concept of pattern recognition, the estimation methods of probability density function, the linear and nonlinear classifier, extraction and selection of pattern recognition, unsupervised pattern recognition and others.

**Reference book:** Pattern Recognition, Zhang Xuegong, Tsinghua University Press

**Prerequisite:** Artificial Intelligence

**Application and Development of Embedded Operation System (4 credits)**

**Course code**: b2012063

**Suitable majors**: Computer Science and Technology

**Instructor**: Cui Lili, Yang Jie

**Brief introduction:**

The course objective: introduce the mainstream embedded operation system, Linux operation system and Linux-based embedded operation system, taking Linux operation system as the core prototype of the embedded operation system. Through this course, the students are able to master the core and application of Linux operation system, the key technology and skills to develop embedded system with Linux. This course lays a solid basis for the research and development of embedded system.

**Development Technology of Embedded Software (4 credits)**

**Course code**: b2012064

**Suitable majors**: Computer Science and Technology

**Instructor**: Shi Lingxiang

**Brief introduction:**

Course objective: help the students master the basic concepts of embedded system application program, the methods and technology of embedded system application program design, laying a solid basis for the further study of development and design of embedded system. The students are required to master the basic development methods of WinCE and VS2005 embedded application software and the embedded graphic programming skills with VS2005. the students are also required to understand the basic concepts of process and thread and master the thread synchronous technology of multi-thread software, the methods of document management under WinCE and the document operation programming methods under Win CE, the database system and basic database programming technology of WinCE, the basic theory of communication programming under WinCE and the network or communication programming technology with VS2005 under WinCE.

**Application of Embedded System (3 credits)**

**Course code**: b2012066

**Suitable majors**: Electronic Information Engineering

**Instructor**: Ma Wenxin, Wang Jianjun, Song Shaojing and others

**Brief introduction:**

Course objective: understand the basic theory of embedded system and related microprocessor, memorizer, peripherals and interfaces, get familiar with the embedded operation system, know the general process of embedded system development, get familiar with some common embedded system’s development tools or methods, get familiar with the typical application of embedded system and steps of product design and development.

Course contents: introduce the basic concept of embedded system, the embedded microprocessor structure based on ARM structure, instructional system and peripheral interface; introduce the ARM assembly language program design, embedded C language program design, embedded C language program design skills, mixed programming of C language and assembly language; emphasize on the understanding of basic knowledge and cultivation of application ability and engineering sensibility.

**Reference book:**

Embedded System and its Application, Chen Qijun and others, Tongji University Press

**Prerequisite:** Single Chip Machine Theory and Application

**Artificial Intelligence (2 credits)**

**Course code**: b2012067

**Suitable majors**: Intelligent Science and Technology

**Instructor**: Wang Tong

**Brief introduction:**

Objective: through this course, the students are able to understand the concept, research area and main applications of artificial intelligence. Contents: history of artificial intelligence, searching strategy, reasoning methods, methods of machine study, neural network methods, structure and system of intelligent science and technology, the relationship between intelligent science and other sciences, the development frontier and opportunities of intelligent science and technology.

**Reference book:**

Artificial Intelligence Technology, Cao Chengzhi, Tsinghua University Press

**Human-machine Interaction Technology (2 credits)**

**Course code**: b2012068

**Suitable majors**: Software Engineering

**Instructor**: Zhang Shiming

**Brief introduction:**

Human-machine Interaction Technology is a selective Specialty course for the major of software engineering and digital media technology. The course objective is to help the students understand the concept of human-machine interaction, the features of user’s interface of different stages, the basic principles and methods of user’s interface design, and master the main process and practical evaluation methods of software system’s user interface design taking the design of web-based software and intelligent mobile phone software as examples, in accordance with the development trend of software technology. At last, the course forecasts the future of user interface technology, letting the students know that the human-machine interface is the media for human and machine to transfer and exchange information.

**Reference book:**

Basic Instruction of Human-machine Interaction, Meng Xiangxu, Tsinghua University Press

**Converged Communications (2 credits)**

**Course code**: b2012069

**Suitable majors**: Communications Engineering

**Instructor**: Wang Liandong

**Brief introduction:**

The course introduces the new communication mode converging the computer technology and traditional communication technology into a network platform, so as to realize the applied service of telephone, fax, data transmission, video/audio conference, call center, instant message. The main contents include soft switching theory, VoIP technology, No.7 signaling, H323 protocol theory, SIP protocol theory and converting communication technology and others.

**Reference book:**

IBX1000 Converging Communication Technology, Self-edited

**Prerequisite:** Modern Switching Technology

**Introduction to Software Engineering (2 credits)**

**Course code**: b2012070

**Suitable majors**: Computer Science and Technology, Software Engineering, Network Engineering, Information and Computing Science, Intelligent Science and Technology

**Instructor**: Tan Wen’an, Cao Xiaoxia, Wang Shuai

**Brief introduction:**

This course is a basic Specialty course for the major of software engineering, which is also an engineering specialty researching on the general theory and technology of software development and maintenance. Through this course, the students are able to understand the general process of software development and maintenance, the basic theory, concept and methods of software engineering, the structural software development methods and object-oriented software development, the theory and methods of software engineering, laying a basis for the learning of following courses.

The students are required to master the practical design and system development technology of software engineering. The course contents include software engineering, feasibility analysis, need analysis, conceptual design, detailed design, coding, test, maintenance, object-oriented analysis and design, UML and UML drawing.

**Reference book:**

Introduction to Software Engineering, Zhang Haifan, Tsinghua University Press

**Prerequisite:** Data Structure and Algorithm, Basic Program Design, Introduction to Database System and others

**Software Modeling Technology (2 credits)**

**Course code**: b2012071

**Suitable majors**: Software Engineering, Information and Computing Science

**Instructor**: Tang Shan, Cao Xiaoxia, Li Liping, Wen Wen

**Brief introduction:**

This course focuses on the introduction of object-oriented unified modeling language UML, with the purpose to help the students understand the basic concept of object-oriented technology, master the analysis and design methods of object orientation and some software development technology related to object orientation. Meanwhile, the students are required to analyze and design with UML under Rose environment. The students are able to learn the modeling tool of UML (Unified Modeling Language), and master the necessary description and processing methods for the object orientation modeling, laying a good basis for the software development in scientific research. Meanwhile, the course cultivates the students’ analysis ability, design ability and engineering thoughts, so as to improve the quality of scientific research of the students.

**Reference book:**

Practical Instruction of UML Basis and Rose Modeling, Xie Xingxing, Tsinghua University Press

**Prerequisite:** Introduction to Software Engineering

**New Technology of Software Design (2 credits)**

**Course code**: b2012072

**Suitable majors**: Software Engineering

**Instructor**: Xue Jianxin

**Brief introduction:**

The course objective: master the new technology of mainstream enterprise software design and development. Course contents: Java EE platform and development basis, Java Web development basis, Struts 2 basis, Hibernate basis, MVC framework development basis, Spring basis and application, Java EE multi-framework integration development, Ajax elementary instruction.

**Reference book:**

Practical Instruction of Java EE (2nd edition), ISBN: 9787121254574, Zheng A’qi, Publishing House of Electronics Industry

**Prerequisite:** Java Program Design, Object Orientation Technology (Object-oriented Design and Analysis), Introduction to Database System

**Software Document Writing (2 credits)**

**Course code**: b2012073

**Suitable majors**: Software Engineering

**Instructor**: Shi Qingping

**Brief introduction:**

This course is an important Specialty course for the major of software with high practicability, which is also an important step for the software engineering series courses. Based on the basic theory of software engineering specialty, the course focuses on writing of software document products in the different stages of the software lifetime, with the purpose to cultivate the students’ thoughts of software engineering development and writing ability of different software documents.

**Reference book:**

Software Document, Xiao Gang, Tsinghua University Press

**Prerequisite:** Introduction to Software Engineering

**Software Project Management (2 credits)**

**Course code**: b2012074

**Suitable majors**: Software Engineering

**Instructor**: Li Liping

**Brief introduction:**

Course objective: understand the basic theory, technology and methods of software project management, 9 areas of PMBOK, the basic theory and operational methods of initial, planning, execution control and other stages of software project, and the management of range, schedule, cost and quality of software project.

**Reference book:**

Software Project Management Cases (2nd edition), Han Wanjiang, Jiang Lixin, China Machine Press

**Prerequisite:** Introduction to Software Engineering, Software Modeling Technology, Data Structure and Algorithm

**Software Quality Guarantee and Test (2 credits)**

**Course code**: b2012075

**Suitable majors**: Software Engineering

**Instructor**: Zhu Bin

**Brief introduction:**

Software Test is an important Specialty course for the major of software engineering. The course mainly introduces the basic knowledge and methods of software test. The students are able to master the theoretical knowledge and technology of software test, basic concept and theory of software test, application of basic test technology and methods into practice, and software test with technical strategy and methods introduced in this course. The students are required to correctly understand the basic concept, knowledge of software test, and the important function of software test in software development (engineering) process, master the process and principle of software test, the basic and senior software test technology, the professional obligations and working contents of software tester, and have the ability to solve practical test problems with software test technology.

**Reference book:**

Software Test Method and Technology, Zhu Shaomin, Tsinghua University Press

**Prerequisite:** Program Design

**3D Animation Design (4 credits)**

**Course code**: b2012076

**Suitable majors**: Digital Media Technology

**Instructor**: Zheng Lei

**Brief introduction:**

Course objective: master the design and production of 3D animation, understand the design process of 3D animation and games, learn to use 3Dsmax to build up models, collect UV, draw maps, adjust animation, scene illumination and rendering.

**Reference book:**

Autodesk 3dx Max 2015 Standard Instruction, Wang Qi, Posts & Telecom Press

**Prerequisite:** Digital Graphic Processing

**Radio Frequency Electric Circuit (3 credits)**

**Course code**: b2012077

**Suitable majors**: Electronic Information Engineering

**Instructor**: Sun Qiudong, Yang Wenbo

**Brief introduction:**

Course objective: have the basic understanding of the RF system and master the basic theory of RF system composition and related circuit.

Course content: introduce the frequency loop and IMN, noise and small signal amplifier, radio resonant power amplifier, sinusoidal oscillator, modem theory and circuit, amplitude modulation and demodulation, mixed frequency, angle modulation and demodulation, digital modulation and demodulation, feedback and control, digital frequency synthesis, function and application technology of cell circuit.

**Reference book:**

Radio Frequency Circuit Theory and Design (2nd edition), Huang Yulan, Posts & Telecom Press

**Prerequisite:** Analog Electric Technology, Digital Electric Technology

**Basic Photographing and Videoing (2 credits)**

**Course code**: b2012078

**Suitable majors**: Digital Media Technology

**Instructor**: Wang Tong

**Brief introduction:**

Course objective: through the study of basic theory, methods and technology of photographing and videoing, the students have an overall understanding of the photographing and videoing, master the general rules and design skills of photographing and videoing, and the creation principles. Course contents: the students are able to understand the basic theory, knowledge and skills of photographing and videoing, get familiar with the thoughts and methods of image expression and image creation.

**Reference book:**

Digital Photographing and Videoing, Zhan Qinglong, Tsinghua University Press

**Prerequisite:**

**Audio-visual Language (2 credits)**

**Course code**: b2012079

**Suitable majors**: Digital Media Technology

**Instructor**: Wang Tong

**Brief introduction:**

Course objective: help the students understand the general rule of audio-visual language, learn how to narrate and express feelings in audio-visual way. The course contents: understand the theory and skills of shot connection and audio-visual structure, basic knowledge and general rules of audio-visual language, have correct movie thoughts and cultivate the ability of enjoying and analyzing movies.

**Reference book:**

Audio-visual Language of Media, Chen Jide, Defense Industry Press University

**Mobile Phone Game Development (2 credits)**

**Course code**: b2012080

**Suitable majors**: Digital Media Technology

**Instructor**: Wu Jiaqi, Pang Yanxia

**Brief introduction:**

Game integrates new technology, entertainment, competition, simulation and other entertainment key elements and becomes one of the new entertainment modes most welcomed by the world. The course contents focuses on the software engineering theory of mobile phone game development and the basic knowledge or technology like graphics, artificial intelligence, human-machine interaction, network in games. Through the project-based study, the students shall have the basic skills of mobile phone game development and master the method of how to transplant the games into webpages, IOS and Android platform.

**Reference book:**

Unity 3D Mobile Phone Game Development, Jin Xizeng, Tsinghua University Press

**Data Analysis (2 credits)**

**Course code**: b2012081

**Suitable majors**: Information and Computing Science

**Instructor**: Fang Hong, Liu Xiaomei

**Brief introduction:**

This course is a selective course for the undergraduates majored in information and computing science. Through this course, the students are required to master the basic theory and methods of data analysis, including descriptive analysis, linear regression, principal component, factor analysis, judging analysis and cluster analysis, and have the ability to solve practical problems with SPSS software, laying a solid basis for the further study or research.

**Reference book:**

Data Analysis, Fan Jincheng, Mei Changling, Science Press

**Prerequisite:** Probability and Mathematical Statistics

**Theory and Technology of Data Engineering (3 credits)**

**Course code**: b2012082

**Suitable majors**: Information and Computing Science

**Instructor**: Wang Anbao

**Brief introduction:**

This course focuses on the introduction of data modeling, data standardization, data management, data application, database safety, taking the life cycle of the data as the research object. The data modeling part introduces the theory, methods and tools of data modeling; the data standardization part researches on the contents and methods of data standardization; the data management introduces the data storage, backup and disaster recover and the methods of data quality management; the data application researches the basic methods or technologies of data integration, data mining, data service, data visualization and information index; the database safety introduces the safety threat and safety system of the database.

**Reference book:**

Theory and Technology of Data Engineering, Dai Jianwei and others, Defense Industry Press

**Prerequisite:** Database Foundation and Application, Database Technology Practice

**Data Structure and Algorithm (3 credits)**

**Course code**: b2012083

**Suitable majors**: Communications Engineering

**Instructor**: Yang Wenjing, He Haihui, Du Yi, Li Liping, Zhang Shiming, Xue Jianxin

**Brief introduction:**

The course mainly introduces the composition methods of data and the algorithm of operating the data structure. The key contents cover all kinds of typical data structure, storage structure, related algorithm and basic time or space analysis, including linear table and its derivative structure (stack, queue, cluster, multi-dimensional array), tree diagram, typical computing of searching and internal sequencing. The students are required to master the standard computing design skills and improve their thinking ability based on the original program design ability.

**Reference book:**

Data Structure (C Language), Yan Weimin, Wu Weimin, Tsinghua University Press

**Prerequisite:** Basic Program Design

**Data Structure and Algorithm (3 credits)**

**Course code**: b2012084

**Suitable majors**: Electronic Information Engineering, Optical Information Science and Engineering, Computer Science and Technology, Software Engineering, Digital Media Technology, Network Engineering, Information and Computing Science and Intelligent Science and Technology

**Instructor**: Yang Wenjing, He Haihui, Du Yi, Li Liping, Zhang Shiming, Xue Jianming

**Brief introduction:**

The course mainly introduces the composition methods of data and the algorithm of operating the data structure. The key contents cover all kinds of typical data structure, storage structure, related algorithm and basic time or space analysis, including linear table and its derivative structure (stack, queue, cluster, multi-dimensional array), tree diagram, typical computing of searching and internal sequencing. The students are required to master the standard computing design skills and improve their thinking ability based on the original program design ability.

**Reference book:**

Data Structure (C Language), Yan Weimin, Wu Weimin, Tsinghua University Press

**Prerequisite:** Basic Program Design

**Data Visualization (2 credits)**

**Course code**: b2012085

**Suitable majors**: Information and Computing Science

**Instructor**: Lin Shiwei, Zhou Hanping, Liu Min

**Brief introduction:**

This course mainly introduces basic theory and concept of data visualization, data model and visualization basis starting from the sense and perception of human. The course also introduces the visualization methods of data with space coordinate and time information, visualization of non-structural and non-geometric abstract data and the methods, technologies and tools commonly needed for the application of visualization of all kinds of data.

**Reference book:**

Data Visualization, Ma Kuangliu, Publishing House of Electronics Industry

**Database Foundation and Application (2 credits)**

**Course code**: b2012086

**Suitable majors**: Information and Computing Science

**Instructor**: Zhou Hanping, Wang Shuai, Liu Min

**Brief introduction:**

Through this course, the students are able to understand the basic concept of database system, the basic skills of database technology, and have the ability to solve practical problems of data management with database technology.

**Reference book:**

Database Foundation and Application, Chen Xianhai, China Machine Press

**Database Design and its Application Program’s Development (2 credits)**

**Course code**: b2012087

**Suitable majors**: Software Engineering

**Instructor**: Zhou Hanping

**Brief introduction:**

This course is a Specialty course for the major of software engineering, which introduces the practical technology and method of database application program’s design and development from the perspective of data model design, program design and interface design of database terminal, focusing on the flexible application of theory in practice. The course chooses power designer as the database modeling tool, SQL server as the database, C# as the front terminal development tool of database application system. Through this course, the students are able to understand the design and development technology of database application program and improve their ability o solve practical problems with database technology.

**Reference book:**

Database Design and its Application Program’s Development, Tsinghua University Press

**Introduction to Database System (2 credits)**

**Course code**: b2012088

**Suitable majors**: Computer Science and Technology, Software Engineering, Digital Media Technology, Network Engineering, Intelligent Science and Technology

**Instructor**: Yan Yu, Zhou Hanping, Yang Wenjing, He Haihui, Wang Na

**Brief introduction:**

Introduction to database system is a basic Specialty course for the major of computer. Database technology has become the core technology and important basis of computer information system and application system. Through this course, the students are able to systematically master the basic theory and technology of database system. The course contents include the basic concept of database system, SQL language and its application in some database management system, database design methods and steps and the basic methods of database management.

**Reference book:**

Introduction to Database System, Wang Shan, Sa Shixuan, Higher Education Press

**Prerequisite:** Data Structure and Algorithm

**Database Theory and Application (2 credits)**

**Course code**: b2012089

**Suitable majors:** Communications Engineering

**Instructor**: Sun Qiudong

**Brief introduction:**

This course introduces the basic theory and knowledge of database, creation of database, operation of tables, data searching and other detailed practical skills, and explains the database technology and its detailed application methods with examples and the program development of customer terminal together with Power Builder.

**Reference book:**

Application Technology of Database (2nd edition) (SQL Server 2005), Shen Shikai and others, China Railway Press

**Prerequisite:** Computer Application Basis, C Language

**Basic Data Communication (2 credits)**

**Course code**: b2012090

**Suitable majors**: Communications Engineering

**Instructor**: Zuo Jiancun

**Brief introduction:**

This course introduces the basic theory and methods of data communication network, including the basic concept of communication and network, OSI and TCP/IP model, application layer and transmission layer protocol and service, IP address searching, network addressing and routing basis, data link layer and physical layer, Ethernet technology and its theory, network design and wiring, basic configuration of Cisco router and switchers.

**Reference book:**

CCNA Exploration: Basic Network Knowledge, Mark, Posts & Telecom Press

**Data Communication and Computer Network (2 credits)**

**Course code**: b2012091

**Suitable majors**: Electronic Information Engineering

**Instructor**: Song Shaoliang, Ma Wenxin

**Brief introduction:**

Course objective: help the students master the concept of computer network system organization, data communication, working theory of computer network, and the application or development of computer network technology.

Course contents: including the computer network system organization and related standards, data communication basis, TCP/IP system structure analysis, Internet application protocol, IPv6, LAN system structure and wireless LAN, computer network safety and others.

**Reference book:**

Data Communication and Computer Network (2nd edition), Ji Fukun, China Water and Power Press

**Prerequisite:** Analog Electric Technology, Digital Electric Technology

**Data Mining Technology (2 credits)**

**Course code**: b2012092

**Suitable majors:** Intelligent Science and Technology

**Instructor**: Xue Jianxin, Wang Tong, Du Yi

**Brief introduction:**

Objective: understand the data mining procedures and master the theoretical knowledge and applied technology of data mining algorithm. Contents: 1) introduce the data mining classic procedures; 2) data preprocessing technology; 3) data warehouse technology; 4) data mining algorithm (connection method, classification method, clustering method)

**Reference book:**

Data Mining Concept and Technology, Jiawei Han, translated by Fan Ming and Meng Xiaofeng, China Machine Press

**Prerequisite:** Intelligent Mathematical Foundation and Application

**Data Mining Technology (3 credits)**

**Course code**: b2012093

**Suitable majors:** Intelligent Science and Technology

**Instructor**: Wang An’bao and Zhou Hanping

**Brief introduction:**

Objective: understand the data mining procedures and master the theoretical knowledge and applied technology of data mining algorithm. Contents: 1) introduce the data mining classic procedures; 2) data preprocessing technology; 3) data warehouse technology; 4) data mining algorithm (connection method, classification method, clustering method)

**Reference book:**

Data Mining Concept and Technology, Jiawei Han, translated by Fan Ming and Meng Xiaofeng, China Machine Press

**Prerequisite:** Data Engineering Theory and Technology

**Mathematical Analysis I (6 credits)**

**Course code**: b2012094

**Suitable majors**: Information and Computing Science

**Instructor**: Dou Wenqin, Gao Meina

**Brief introduction:**

Mathematical Analysis I is an important basic Specialty course for the major of mathematics, applied statistics and information computing science. Through this course, the students are able to master the basic thoughts of problem solution with mathematical analysis, understand the basic knowledge and methods of mathematical analysis, and cultivate their thinking ability, reasoning ability and ability of analyzing and solving problems, laying a good basis for the study of other Specialty courses.

Mathematical Analysis I is divided into several parts of limit theory, single variable function differential calculus and single variable function integral calculus. Through the course, the students are able to understand the basic theory of completeness of real number, the concept, basic theory and methods of numerical arrays and function limit, theory and algorithm of single variable function differential calculus, differential mid-value law, concept and all kinds of indefinite integral, definite integral and improper integral.

**Reference book:**

Mathematical Analysis I, Department of Mathematics of Fudan University, Higher Education Press

**Mathematical Analysis II (6 credits)**

**Course code**: b2012094

**Suitable majors**: Information and Computing Science

**Instructor**: Dou Wenqin, Gao Meina

Mathematical Analysis II is one of the most important basic courses for the major of computing mathematics and applied statistics, providing necessary basic knowledge for the study of following courses and necessary training for the cultivation of the ability to work indecently. The course contents and methods are key to the following study. Through this course, the students are required to master the basic concepts, theory, and computation of calculus and have the ability to think, prove, compute, analyze and solve problems independently, laying a basis for the future study of other Specialty courses. The course contents include the numerical series, series of functions, power series, limit and continuity of multi-variable function, derivative and perfect differential of multi-variable function, limit and conditional limit, multiple integral and its application.

**Reference book:**

Mathematical Analysis II, Ouyang Guangzhong, Zhu Guangyan, Jin Fulin, Chen Chuanzhang, Higher Education Press

**Prerequisite:** Mathematical Analysis I

**Mathematical Modeling (2 credits)**

**Course code**: b2012096

**Suitable majors**: Information and Computing Science

**Instructor**: Gui Shenghua Wang Ruiping

**Brief introduction:**

Mathematical Modeling is a selective Specialty course for the major of information and computing science. Through this course, the students are required to master the basic theory and methods of mathematical modeling and build up mathematical models in accordance with practical problems and analyze or research on the problems with mathematical concepts and methods.

Through the study of Mathematical Modeling, the students are required to understand the basic concept, basic theory and basic methods of mathematical modeling, and the development history of mathematical modeling. The students are required to master the contents of elementary model, differential equation model, optimization model, probability model, statistic model and others.

**Reference book:**

Mathematical Model, Jiang Qiyuan and others, Higher Education Press

**Prerequisite:** Mathematical Analysis, Linear Algebra, Probability and Mathematical Statistics, Differential Equation and Operational Research

**Numerical Approximation (2 credits)**

**Course code**: b2012097

**Suitable majors**: Information and Computing Science

**Instructor**: Shao Li, Shao Wenting, Gui Shenghua

**Brief introduction:**

This course trains the students to solve practical computing problems with learned theoretical knowledge. The objective of course design is to cultivate the students’ elementary ability of computing. Numerical approximation is the basis for the approximate mathematical computation. Through this course, the students are able to learn the basic theory and computation methods of numerical approximation and realize it through computer language. The students are able to understand the methods of whole approximate algorithm design through typical representative algorithm design, and master the keys of algorithm design.

**Reference book:**

Numerical Approximation, Wang Renhogn, Higher Education Press

**Prerequisite:** Calculus, Linear Algebra, Ordinary Differential Equations, Computer Language

**Numerical Computation (2 credits)**

**Course code**: b2012098

**Suitable majors**: Information and Computing Science

**Instructor**: Shao LI, Shao Wenting, Gui Shenghua

**Brief introduction:**

Numerical Computation is the Specialty course for the major of information and computing science. Through this course, the students are able to master the common numerical algorithm and theory of computers, make correct choices for actual problems, use accurate numerical algorithm and do necessary analysis of the numerical results. The students are also required to master the techniques to solve mathematical problems with all kinds of numerical methods, laying a good basis for the improvement of students’ scientific computing ability. The course requires the students to master the common numerical algorithm of computers, know the processing of actual numbers with computer through actual application programs and the function of computer in numerical processing. The students are also required to solve numerical processing problems with common numerical algorithm of computers.

**Reference book:**

Numerical Method (Matlab Edition), US, John H. Mathews, Kurtis D. Fink, Publishing House of Electronics Industry

**Prerequisite:** Calculus, Linear Algebra, Ordinary Differential Equations, Computer Language

**Digital Electric Technology (3 credits)**

**Course code**: b2012099

**Suitable majors**: Electronic Information Engineering, Optical Information Science and Engineering, Communications Engineering, Automation

**Instructor**: Mao Liancheng, Kang Liang, Xie Wei

**Brief introduction:**

The students are required to understand the numerical system and code system, master the basic components of combined logic and digital logic, learn to analyze and design simple digital system and understand the generation of pulse and basic circuit.

**Reference book:**

Basic Electric Technology—Digital Part, Kang Huaguang, Higher Education Press

**Prerequisite:** Basic Circuit, Analog Electronics

**Digital Logic (3 credits)**

**Course code**: b2012100

**Suitable majors:** Computer Science and Technology

**Instructor**: Yang Jie, Cui Lili, and Huang Lijia

**Brief introduction:**

The course objective: help the students mater the basic concept, composition, analysis methods, and design methods of computer technology related circuit, analog electric technology and digital logic. This course lays a solid basis for the further learning of digital computer system structure, compositional function of different hardware and working theory.

**Digital Graphic Processing (2 credits)**

**Course code**: b2012101

**Suitable majors**: Electronic Information Engineering, Communications Engineering

**Instructor**: Sun QIudong

**Brief introduction:**

This course mainly introduces the basic concept, theory and methods of digital graphic processing, helping the students build up a complete theoretical system of graphic processing and analysis and master the common graphic processing and analysis technology.

**Reference book:**

Digital Graphic Processing and Analysis, Gong Shengrong, Tsinghua University Press

**Prerequisite:** Signal and System, Digital Signal Processing

**Digital Graphic Processing (3 credits)**

**Course code**: b2012102

**Suitable majors**: Digital Media Technology

**Instructor**: Pang Yanxia

**Brief introduction:**

Course objective: cultivate the UI design sense and method; analyze the execution strategy and process of design production with all kinds of tools and methods commonly used in Photoshop, so as to improve the students’ UI interface design ability.

**Reference book:**

UI Interface Design, Zhang Xiaoling, Zhang Li, Publishing House of Electronics Industry

**Digital Signal Processing (3 credits)**

**Course code**: b2012103

**Suitable majors**: Electronic Information Engineering, Communications Engineering

**Instructor**: Dai Hong, Zhang Hua

**Brief introduction:**

Digital Signal Processing is an important Specialty basic course for the major of Communications Engineering, Electronic Information Engineering, Measurement and Control Technology and Instrumentation, which is widely used in all fields of engineering technology like biomedical engineering, radar, earthquake and communications. The digital signal processing technology processes the digital signal with numerical algorithm like filtering wave, switching, enhancement, estimation and identification, so as to extract useful information. The course objective: introduce the basic theory and methods of digital signal processing with detailed applications, help the students master the basic theory of digital signal processing and have the ability to analyze or process the actual digital signal with matlab program on computers. The course contents: time domain’s discrete signal and system, frequency domain analysis of time domain’s discrete signal and system, DFT, FFT, time domain discrete system’s basic network structure, unlimited IIR digital filter design, limited IIR digital filter design.

**Reference book:**

Digital Signal Processing (3rd edition), Gao Xiquan, Ding Yumei, Xidian University Press

**Digital Audio Making (3 credits)**

**Course code**: b2012104

**Suitable majors**: Digital Media Technology

**Instructor**: Xia Tian

**Brief introduction:**

This course is a vocational technical course for the major of multimedia. Through the study of Audition and Digital Design of Adobe Company, the students are required to master the processing procedures and technical skills of audio projects, get familiar with the technology of audio processing, audio document editing, adding audio special effects to video documents and improve bad audio documents.

**Reference book:**

Adobe Audition CC Classic Instruction, Adobe Company, Posts & Telecom Press

**Algorithm Design and Analysis (2 credits)**

**Course code**: b2012105

**Suitable majors**: Software Engineering, Network Engineering, Information and Computing Science

**Instructor**: Xue Jianxin, Yang Wenjing, Zhu Bin, Cao Xiaoxia

**Brief introduction:**

Course objective: master the design and analysis of classic algorithm and the relationship or difference between different methods. Course contents: 1. the basic concept of algorithm analysis 2. inductive algorithm; 3. divide and conquer algorithm 4. dynamic planning algorithm 5. greedy algorithm 6. graph visiting 7. backtracking algorithm 8. branch and bound algorithm.

**Reference book:**

Techniques and Analysis of Algorithm Analysis, M. H. Alsuwaiyel, translated by Wu Weiyong and Fang Shichang, Publishing House of Electronics Industry

**Prerequisite:** Discrete Mathematics, Data Structure and Algorithm, Basic Program Design

**Algorithm Design and Analysis (3 credits)**

**Course code**: b2012106

**Suitable majors**: Computer Science and Technology, Intelligent Science and Technology

**Instructor**: Xue Jianxin, Yang Wenjing, Zhu Bin, Cao Xiaoxia

**Brief introduction:**

Course objective: master classic algorithm design and analysis methods and application, understand the elementary knowledge of algorithm complex and part of the senior algorithm. Course contents: 1. the basic concept of algorithm analysis 2. inductive algorithm; 3. divide and conquer algorithm 4. dynamic planning algorithm 5. greedy algorithm 6. graph visiting 7. backtracking algorithm 8. branch and bound algorithm 9. P and NP problem 10. Random algorithm 11. approximation algorithm

**Reference book:**

Techniques and Analysis of Algorithm Analysis, M. H. Alsuwaiyel, translated by Wu Weiyong and Fang Shichang, Publishing House of Electronics Industry

**Prerequisite:** Discrete Mathematics, Data Structure and Algorithm, Basic Program Design

**Communication Circuit (2 credits)**

**Course code**: b2012107

**Suitable majors**: Communications Engineering

**Instructor**: Sun Qiudong

**Brief introduction:**

The course introduces the basic concept, theory, analysis methods and application of communication circuit. Through the lectures and experiments, the students are able to progressively understand the function, structure, performance parameters, working theory of circuit, basic analysis and design methods of all kinds of communication circuit, laying a theoretical basis for the following study and the students’ accommodation into the rapid development of systematic science in the future.

**Reference book:**

Communication Circuit, Hou Limin, Tsinghua University Press

**Prerequisite:** Analog Circuit, Digital Circuit

**Communications Engineering Execution (2 credits)**

**Course code**: b2012108

**Suitable majors**: Communications Engineering

**Instructor**: Wang Liandong, Zhang Hua

**Brief introduction:**

The course mainly introduces the design, construction, acceptance and supervision of the main steps of communication network construction including communication machinery room, cabling, communication aerial, aerial feeder, earth wire and earthing, lightning protection, communication wires, communication electric source and power distribution.

**Reference book:**

Communications Engineering Design and Cases, Du Sishen, Publishing House of Electronics Industry

**Communication Theory (3 credits)**

**Course code**: b2012109

**Suitable majors**: Optical Information Science and Engineering, Communications Engineering

**Instructor**: Gui Ling

**Brief introduction:**

Communication Theory is an important basic Specialty course for the major of Communications Engineering, electric information. With the development of communication technology, especially in the recent 30 years, the main theoretical system of communication theory comes into shape, which includes basic information theory, modulation and demodulation theory, simulation and channel reuse and others. The emphasis of this course is the introduction of different modulation methods and performance analysis of analog communication system, the basic theory and methods of generation, transmission and modulation or demodulation of baseband signal and frequency band signal of digital communication system and the preliminary theory of signal reception, laying a good basis for the study of following Specialty courses.

**Reference book:**

Communication Theory, Fan Changxin, Defense Industry Press

**Prerequisite:** Probability, Random Signal Analysis

**Application and Development of Statistic Software (2 credits)**

**Course code**: b2012110

**Suitable majors**: Information and Computing Science

**Instructor**: Zhou Hanping, Jiang Cunli, Wang Shuai

**Brief introduction:**

As a theoretical course, this course analyzes and solves practical problems with SAS software, laying a good basis for the improvement of students’ practical ability and comprehensive quality. Through this course, the students are required to master the basic operational methods, basic sentences and common SAS process of SAS system, understand and explain the statistic meaning of output contents of SAS process, do related statistic analysis of given data, transform a practical problem into a statistic problem and solve it by programming with SAS software.

**Reference book:**

SPSS.11\_0 Statistic Analysis Instruction (Elementary), Zhang Wentong, Beijing Hope Electrics Press

**Graphic Processing and Machine Vision (2 credits)**

**Course code**: b2012111

**Suitable majors**: Intelligent Science and Technology

**Instructor**: Wang Tong

**Brief introduction:**

Course objective: help the students firmly master the basic theory and analysis methods of digital graphic processing and solve practical problems by programming with python graphic processing tool box. Course contents: master the basic concept of digital graphic processing, graphic sampling and quantization, relationship between pixels, coordinate transformation; master the basic concept of graphic cutting, classic methods of edge detection; master the basic theory and methods of graphic identification.

**Reference book:**

Python Computer Vision, US, Jan, Erik, Solem, Posts & Telecom Press

**Prerequisite:** Artificial Intelligence

**Network Safety (3 credits)**

**Course code**: b2012112

**Suitable majors**: Network Engineering

**Instructor**: Hu Xiaoming

**Brief introduction:**

Course objective: master the basic theory and key technology of computer network safety and qualify the work of general network safety management and design. Course contents: basic network safety, network safety threat, password technology, safety technology of computer and network system, network attack technology, firewall and invasion test technology, database safety, operational system safety, Internet safety technology, wireless LAN safety technology, virus and Trojan horse technology and others.

**Reference book:**

Network Safety Theory and Practice, Chen Wei, Li Pin, Tsinghua University Press

**Prerequisite:** Computer Network

**Basic Network Programming (3 credits)**

**Course code**: b2012113

**Suitable majors**: Network Engineering

**Instructor**: He Xiaofeng

**Brief introduction:**

Course objective: master the basic knowledge of Internet application development, get familiar with key technologies and skillfully master the basic methods of network application development. Course contents: development process of application layer software, HTML, JavaScript, CSS and JQuery of front terminal development.

**Reference book:**

Elementary to Web Programming: HTML, XHTML and CSS, Jon Duckett, Tsinghua University Press

**Prerequisite:** Computer Network, Data Structure

**Network Storage and Virtual Technology (2 credits)**

**Course code**: b2012114

**Suitable majors**: Network Engineering

**Instructor**: Wang Jian

**Brief introduction:**

Course objective: cultivate the students’ theoretical knowledge and practical ability of network storage technology. Course contents: the structural features, performance, installation of different components of network storage, the hardware structure, interrelationship and function of main components of network storage, the assembly, configuration, daily maintenance and management system installation of network storage. As for the part of virtual technology, the course combines the theoretical and practical instruction with real virtual software based on the introduction of typical theoretical knowledge.

**Reference book:**

Network Storage and Virtual Technology, Sun Lili, Beihang University Press

**Prerequisite:** Computer Network

**Network Attack and Defense Technology (2 credits)**

**Course code**: b2012115

**Suitable majors**: Network Engineering

**Instructor**: Wu Xiumei

**Brief introduction:**

Course objective: master the basic theory and technology of network attack and defense.

Course contents: information collection technology, exploit application technology, password cracking technology, network sniffing technology, web application safety technology, invasion test and protection technology, windows operational system safety technology, Linux operational system safety technology and others.

**Reference book:**

Network Attack and Defense Technology, Zhuge Jianwei, Publishing House of Electronics Industry

**Prerequisite:** Network Safety

**Network Error Test and Removal (2 credits)**

**Course code**: b2012116

**Suitable majors**: Network Engineering

**Instructor**: Wu Xiumei

**Brief introduction:**

Course objective: master the technology of typical network error diagnosis and removal. Course contents: network error and network diagnosis test tool, physical layer error diagnosis and removal, data link layer error diagnosis and removal, network layer error diagnosis and removal, Ethernet error diagnosis and removal, WAN error diagnosis and removal, TCP/IP error diagnosis and removal, server error diagnosis and removal, other business error diagnosis and removal, network error management and data backup, wireless network error diagnosis and removal.

**Reference book:**

Computer Network Error Diagnosis and Removal, Luo Yong, Li Lianye, Pan Chaoyang, Zhao Kenong, Tsinghua University Press

**Prerequisite:** Computer Network

**Network Management (2 credits)**

**Course code**: b2012117

**Suitable majors**: Network Engineering

**Instructor**: Hu Xiaoming

**Brief introduction:**

Course objective: master the theory of common network management protocols, understand the current network management standards, and get familiar with the application of some practical network management tools.

Course contents: network management introduction, network management system structure, OSI system management model, network management function, SNMP network management model, remote network management and monitoring (RMON), new network management model, practical network management system and others.

**Reference book:**

Practical Instruction of Computer Network Management, Zhang Huying, Wuhan University Press

**Prerequisite:** Routing and Switching Technology

**Network Planning and Optimization (2 credits)**

**Course code**: b2012118

**Suitable majors**: Communications Engineering

**Instructor**: Wang Liandong, Zhang Hua

**Brief introduction:**

This course introduces the optimization theory and methods of TD-SCDMA wireless network. The students are required to master 3G mobile communication’s development and theory, TD-SCDMA network planning, TD-SCDMA network optimization, TD-SCDMA optimization data collection, MAPINFOR software application, TD-SCDMA single station verification, TD-SCDMA RF optimization and TD-SCDMA optimization methods and cases.

**Reference book:**

TD-SCDMA Wireless Network Optimization Theory and Method, Xu Hongmin, Posts & Telecom Press

**Network Computing Technology (2 credits)**

**Course code**: b2012119

**Suitable majors**: Network Engineering

**Instructor**: Ma Chuang

**Brief introduction:**

Course objective: master the basic theory and mainstream technology of network computing. Course contents: network computing mode, distributed object computing, web computing, XML, WebServices, wireless and mobile computing.

**Reference book:**

Network Computation, Huang Jianbin, Xidian University Press

**Prerequisite:** Data Structure, Basic Program Design, Computer Network

**Theory and Application of Micro-processor (4 credits)**

**Course code**: b2012120

**Suitable majors**: Computer Science and Technology

**Instructor**: Hou Dongliang, Li Bin

**Brief introduction:**

This course introduces the internal structural theory of embedded micro-processor, assembly language and C language program design technology, interrupt system and internal/peripheral application technology, interface extension and programming technology, embedded system design and engineering realization technology. With STM32 microprocessor as the carrier, this course shows the design and realization of intelligent electric system and cultivates the engineering design thoughts an practical ability of the students.

**Differential Equation (3 credits)**

**Course code**: b2012121

**Suitable majors**: Information and Computing Science

**Instructor**: Shao Wenting, Ma Zhiyong

**Brief introduction:**

This course is a compulsory basic Specialty course for the undergraduates majored in computer science and technology. This course combines theoretical knowledge and practical problems together, beneficial to the improvement of students’ ability to analyze and solve problems. The course objective is to require the students to master the solutions of some kinds of basic ordinary differential equation, understand the modeling processing from the abstract perspective to theoretical perspective and show the objective realities and laws from the perspective of equation.

**Reference book:**

Ordinary Differential Equation, Wang Gaoxiong, Higher Education Press

**Prerequisite:** Advanced Mathematics (Mathematical Analysis), Linear Algebra (Advanced Algebra)

**Numerical Solution of Differential Equation (2 credits)**

**Course code**: b2012122

**Suitable majors**: Information and Computing Science

**Instructor**: Shao Wenting, Ma Zhiyong

**Brief introduction:**

The course objective is to try to explain the basic thoughts of numerical methods and necessary basic concepts accurately through some typical effective methods from elementary basis. The course contents include initial value of ordinary differential equation and the numerical solution of elliptic equation. The course mainly introduces Eulerian Method, the iteration and stability of display format and implicit format, convergence analysis, Runge-Kutta format, numerical methods of ordinary differential equation (group), Jacobi iteration and Gauss-Seidel iteration, parabolic equation’s difference, Crank-Nicolson implicit format, alternating direction implicit difference format, and the basic thoughts of multigrid method and finite element methods.

**Reference book:**

Numerical Solution of Differential Equation, Hu Jianwei, Tang Huaimin, Science Press

**Prerequisite:** Differential Equation

**Theory and Application of Wireless Sensor Network (2 credits)**

**Course code**: b2012123

**Suitable majors**: Electronic Information Engineering

**Instructor**: Song Shaojing, Ma Wenxin

**Brief introduction:**

Course objective: help the students understand the overall information of the hot wireless sensor technology currently, the dynamic development trend of the field, the basic theory of short-distance wireless communication, the basic theory of wireless network and network protocol analysis.

Course contents: introduces the brief information of wireless sensor network, network structure, coverage and connection, network communication, network supportive technology, network MAC layer, network protocol’s technological standard, network’s routing protocol, network safety, network application development, the WSN under the environment of Internet of things.

**Reference book:**

Theory and Application of Wireless Sensor Network, Peng Li, Xidian University Press

**Prerequisite:** Analog Electric Technology, Digital Electric Technology

**Modern Optical Switching Theory (2 credits)**

**Course code**: b2012124

**Suitable majors**: Optical Information Science and Engineering

**Instructor**: Shao Yufeng, Wang Liandong

**Brief introduction:**

The students are required to master the basic knowledge of communication, including communication network structure, common switching technology, circuit switching theory, signaling system and others. The Chapter 2 introduces the basic functional structure and hardware structure of program-controlled switching system, which help the students deeply understand the hardware structure of switchers with simulation software. The Chapter 3 simulates the onsite operation with the learned theory and knowledge of hardware structure in the first 2 chapters, including the data opening and data connection.

**Reference book:**

Modern Optical Switching Theory, Shao Yufeng, Self-edited textbook

**Modern Switching Technology (2 credits)**

**Course code**: b2012125

**Suitable majors**: Communications Engineering

**Instructor**: Shao Yufeng

**Brief introduction:**

The purpose of this course is to help the students master the basic theories, experimental skills and Specialty technologies of modern switching technology and cultivate applied senior engineering technical talents of product design and application technological development, test and operation in the field of modern switching system and network. The course contents include the relationship between communication network and switching, the basic technology and its classification of switching, the basic theory of switching network, basic knowledge of signaling and No.7 signaling system, the concept and theory of circuit, the theory and related main technology of digital programming control switch, the basic theory and main related technologies of optical grouping switch, the brief introduction of next generation of network, the basic theory, main related technologies of soft switch and the services or applications provided by it.

**Reference book:**

Modern Switching Technology, Mao Zhengchong, Yao Jun, Peking University Press

**Prerequisite:** Communication Theory

**Linear Algebra (4 credits)**

**Course code**: b2012126

**Suitable majors**: Information and Computing Science

**Instructor**: Zhang Feng, Liu Lili

**Brief introduction:**

This course is a compulsory basic Specialty course for the major of applied statistics. Through this course, the students are required to master the basic knowledge and basic theory of linear algebra, the abstract and strict algebra system and methods, the dialectical relationship between the detailed and the abstract, the special and the ordinary, the limited and the unlimited, and improve their thoughts of abstractness and the ability of logic reasoning and computation. The course contents include the basic concepts and theories of determinant, array, linear equation group, quadratic form, linear space and linear transformation.

**Reference book:**

Higher Algebra, Wang E’fang, Shi Shengming, Higher Education Press

**Signal Collection Technology and Application (2 credits)**

**Course code**: b2012127

**Suitable majors**: Electronic Information Engineering

**Instructor**: Gong Yumei, Hu Jinyan, Ma Wenxin

**Brief introduction:**

Course objective: help the students master the basic theory of signal modulation, data collection and processing, Labview virtual device’s development process and have some practical ability.

Course contents: introduces the LabVIEW based data collection and processing technology completely and systematically around the virtual device technology, with the related basic models of test technologies as the main stream, including the virtual device technology, data collection system design, analog signal collection, signal modulation, graphic controller and graphic expression, numerical value input/output and counter, LabView’s signal analysis and processing, virtual device control and application examples, SQL and database visit, LabVIEW and simulation technology.

**Reference book:**

LabVIEW based Data Collection and Processing Technology, Bai Yun, Gao Yupeng, Hu Xiaojiang, Xidian University Press

**Prerequisite:** Analog Electric Technology, Digital Electric Technology

**Signal and System (2 credits)**

**Course code**: b2012128

**Suitable majors**: Optical Information Science and Engineering

**Instructor**: Fang Anle, Wang Liandong

**Brief introduction:**

This course is easy to understand, which focuses on the detailed application of programmable switching technology, helping the students master the theory of programmable switching technology and maintenance of the network.

**Reference book:**

Signal and System (2nd edition), US Oppenheim, translated by Liu Shutang, Publishing House of Electronics Industry

**Information Optics (2 credits)**

**Course code**: b2012130

**Suitable majors**: Optical Information Science and Engineering

**Instructor**: Fang Anle and Shao Yufeng

**Brief introduction:**

This course is divided into 14 chapters. Chapter 1 to 4 introduces the basic theory of information optics; Chapter 5-12 introduces the optical holography, computing holography, moiré phenomenon and its application, special filtering wave, wavefront modulation, optical coherent/incoherent processing, which is also the important application area of the information optics; Chapter 13-14 introduces the digital optical computer and 3D shape measurement developing recently. The course not only introduces the basic theory of information optics, but also the latest development of this specialty, with a strict theoretical system and clear physical concept. Some exercises are designed for each chapter so as to cultivate the students’ innovative thoughts and ability to solve practical problems.

**Reference book:**

Information Optics (2nd edition), Su Xianyu, Science Press

**Prerequisite:** Communication Theory, Optical Network, Electromagnetic Field and Electromagnetic Wave

**Basic Information Theory (2 credits)**

**Course code**: b2012131

**Suitable majors**: Electronic Information Engineering, Communications Engineering

**Instructor**: Gui Ling

**Brief introduction:**

This course is an important compulsory basic Specialty course for the major of Communications Engineering and electric information, which includes the basic information of Shannon’s information theory, the signal source and channel encoding or decoding methods of communication system. The contents of Shannon’s information theory include the information and information’s measurement, channel and its volume, undistorted source encoding and rate distortion theory. The source and channel encoding and decoding includes the distorted source encoding, channel encoding and channel encoding law, linear grouping code, circulation code, convolution code and turbo code. Through this course, the students are able to master and get familiar with the basic information theory and practical source and channel encoding or decoding methods, laying a good basis for the following Specialty course.

**Reference book:**

Information Theory and Encoding Technology, Feng Gui and others, Tsinghua University Press

**Prerequisite:** Advanced Mathematics, Probability

**Form Composition (2 credits)**

**Course code**: b2012132

**Suitable majors**: Digital Media Technology

**Instructor**: Li Kefeng

**Brief introduction:**

Form composition design is a kind of training, analysis and experiment of form composition, so as to cultivate innovative thoughts. The course introduces the rules and techniques of form composition and cultivates the students’ recognition and ability of layout and form.

**Reference book:**

Form Composition Design, Liu Sirong, Tang Liya, Zheng Cuixian, Li Ting, Wuhan University Press

**Virtual Reality (4 credits)**

**Course code**: b2012133

**Suitable majors**: Digital Media Technology

**Instructor**: Wu Jiaqi

**Brief introduction:**

Virtual Reality is a Specialty course for the major of digital media technology, a core course for the cultivation of virtual reality production technological talents. Based on the features of virtual reality and the introduction of virtual reality technological theory, around the practical application, this course stresses on the introduction of the popular virtual reality software. The course contents include; model induction, particle effect, collision detection, virtual tour and video camera configuration. The students are required to complete 3D virtual realization development, product demonstrational design, and architectural tour design based on the understanding of the virtual reality technology.

**Reference book:**

3D Game Design, Fu Zhiyong, Tsinghua University Press

**Prerequisite:** 3D Animation Design, Course Practice of Virtual Reality

**Need Engineering (2 credits)**

**Course code**: b2012134

**Suitable majors**: Software Engineering

**Instructor**: Cao Xiaoxia

**Brief introduction:**

Need Engineering is a basic Specialty course for the major of software engineering, with the purpose to help the students master the main process, basic methods and main concepts of software need analysis. The contents include need acquisition, need analysis, need standardization, need confirmation, need change management, need management and the method or process of need modeling with UML. The students are required to master the object-oriented software need analysis and related technology, the software tools for the software need analysis and improve their knowledge system of software engineering.

The course objective is to help the students understand the importance of need analysis and good design in software development through the description of software need analysis and design. The contents include the software engineering introduction, need analysis basis, need confirmation and standard explanation, system analysis methods, system design basis, test and change management.

**Reference book:**

Software Need Engineering, Wu Guoqing, China Machine Press

**Prerequisite:** Software Engineering, Software Quality Guarantee and Test, Object-oriented Analysis and design

**Mobile Internet Technology (2 credits)**

**Course code**: b2012135

**Suitable majors**: Information and Computing Science

**Instructor**: Wang Anbao

**Brief introduction:**

Mobile Internet Technology introduces the working theory of mobile subnetwork, structure and terms of mobile subnetwork, basic working theory of mobile subnetwork, data structure of mobile subnetwork, working process of mobile router, the working process of home agents, design and realization of mobile subnetwork, the general design plan of mobile subnetwork.

**Reference book:**

Mobile Internet Technology, Zhang Hongke, Posts & Telecom Press

**Prerequisite:** Computer Network

**Mobile Internet Technology (2 credits)**

**Course code**: b2012136

**Suitable majors**: Network Engineering

**Instructor**: Wu Xiumei

**Brief introduction:**

Course objective: master the communication and computing technology in the construction and development of mobile Internet. Course contents: mobile Internet terminal technology, network technology, application technology, business need of typical application scene and the suitability of related communication technology, the mobile Internet technology standard at home and abroad.

**Reference book:**

Key Mobile Internet Technology and Application, Wu Dapeng, Publishing House of Electronics Industry

**Prerequisite:** Computer Network

**Basic Mobile Communication (2 credits)**

**Course code**: b2012137

**Suitable majors**: Communications Engineering

**Instructor**: Wang Liandong, Zhang Hua

**Brief introduction:**

Through this course, the students are required to master the application of GSM digital mobile communication system, understand the development history of GSM, GSM cellular system and GSM systematic structure, the management of transmission of GSM key technologies, wireless interface, signaling transmission, wireless transmission and mobile communication, including the wireless resources management, mobility and safety management, communication management and network management.

**Reference book:**

GSM Digital Mobile Communication System, Michel Mouly, Publishing House of Electronics Industry

**Mobile Communication and Wireless Network (2 credits)**

**Course code**: b2012138

**Suitable majors**: Network Engineering

**Instructor**: Wang Bao’an

**Brief introduction:**

Course objective: skillfully master the working theory of 802.11 series protocol, and understand the working process and composition of other mainstream wireless network and mobile communication protocol. Course contents: 802.11a/b/g/n/I, UWB, Zigbee, Bluetooth, WiMAX, 3G, 4G and other wireless and mobile communication protocol.

**Reference book:**

Theory and Application of Wireless Network Technology, Rackley, translated by Wu Yi, Publishing House of Electronics Industry

**Prerequisite:** Computer Network

**Mobile Terminal Software Development (2 credits)**

**Course code**: b2012139

**Suitable majors**: Software Engineering, Information and Computing Science

**Instructor**: Zhang Shiming and Zhu Bin

**Brief introduction:**

Through the design practice of this course,

1. the students are required to combine the theory with practice and complete innovative design with feasibility through new technologies and methods; improve their ability of planning, design, realization, coordination and problem solution.
2. strengthen their understanding of the basic concept, theory and realization technology of the Android mobile application program design;
3. master the main environment and tools of Android application software development and the use of common controller of Android Application software;
4. master the basic methods and steps of mobile application software’s system analysis and design, and complete preliminary analysis and design of simple practical application problems;
5. master the Java programming language and realize the mobile application software development through programming.

**Reference book:**

Android Application Program Development, Wang Xianghui, Tsinghua University Press

**Prerequisite:** Basic Program Design, Java Program Design

**Mobile Terminal Software Development (3 credits)**

**Course code**: b2012140

**Suitable majors**: Computer Science and Technology, Intelligent Science and Technology

**Instructor**: Xue Jianxin, Wang Tong, and Du Yi

**Brief introduction:**

Objective: learn and master the programming thoughts and development skills of intelligent mobile terminal application programs. The contents include: Android development environment, user interface development, life cycle, component communication and broadcasting message, backstage service, data storage, positioning service and map application.

**Reference book:**

Development of Android Application Program, Wang Xianghui, Zhang Guoyin, Lai Mingzhu, Publisher

**Prerequisite:** Basic Program Design, Data Structure and Algorithm

**Applied Cryptography (2 credits)**

**Course code**: b2012141

**Suitable majors**: Network Engineering

**Instructor**: Hu Xiaoming

**Brief introduction:**

Course objective: master the basic theory and application of cryptography and be able to complete the safety management and maintenance of the computer information system with cryptography. Course contents: cryptography basis, classic password, modern password, digital signature, password management, identify authentication, visit control, IPSec, ebusiness payment safety (SET protocol), PGP and others.

**Reference book:**

Applied Cryptography, Hu Xiangdong, Publishing House of Electronics Industry

**Prerequisite:** Basic Program Design, Data Structure

**Movie Editing and Synthesis (4 credits)**

**Course code**: b2012142

**Suitable majors**: Digital Media Technology

**Instructor**: Xia Tian

**Brief introduction:**

This is a Specialty course for the major of multimedia. The course objective is to help the students get familiar with the basic thoughts of movie special effect and editing, master the basic contents and use of movie editing and synthesis software After Effects, and master the basic synthesis and special effect thoughts and technologies, laying a solid basis for the application of practical work in the future.

**Reference book:**

ADOBE AFTER EFFECTS CC Standard Training Textbook, ACAA Expert Council, DDC Media, Posts & Telecom Press

**Movie Cutting Technology (2 credits)**

**Course code**: b2012143

**Suitable majors**: Digital media Technology

**Instructor**: Xia Tian

**Brief introduction:**

This course is a Specialty course for the major of multimedia. The course is to help the students get familiar with the basic thoughts of movie cutting, master the basic contents and use of movie cutting software Premiere, and master the basic cutting skills, laying a solid basis for the application in practical work in the future.

**Reference book:**

ADOBE AFTER EFFECTS CC Standard Training Textbook, ACAA Expert Council, DDC Media, Posts & Telecom Press

**Game Art Design (3 credits)**

**Course code**: b2012144

**Suitable majors**: Digital Media technology

**Instructor**: Zheng Lei

**Brief introduction:**

Learn the art design of 3D games, master the processing skills of model creation, UV collection and role bonding, understand the interface between game art design and programs and create the scene and role model necessary for the need of game program and environment.

**Reference book:**

**Prerequisite:** 3D Animation Design, Digital Engraving, 3D Animation Design Practice

**Game Design and Development (2 credits)**

**Course code**: b2012145

**Suitable majors**: Software Engineering

**Instructor**: Wang Shuai

**Brief introduction:**

Game Design and Development is a comprehensive course with the objective to help the students master the game development theory and the basic knowledge or technology of graphics, human-machine interaction and network in the games, and have the basic game development skills.

Through the course, the students are able to understand the game development theory, programming basis of 2D and 3D games, and the simple game development skills with general game engines. The students are also required to understand WINDOWS programming model and GDI graphic database, DirectX and 2D game programming basis, the application of related knowledge like algorithm, data structure and basic graphics, 3D programming basis and Open GL, and the game development engine of Orge.

**Reference book:**

Computer Game Program Design, Geng Weidong, Chen Wei, Publishing House of Electronic Industry

**Prerequisite**: Object-oriented Program Design, Data Structure, Computer Graphics

**Game Design and Development (3 credits)**

**Course code**: b2012164

**Suitable majors**: Digital Media Technology

**Instructor**: Pang Yanxia

**Brief introduction:**

The course objective is to help the students have a correct understanding of the game industry through systematical study of basic knowledge of game design and development. This course lays a solid theoretical basis for the work in the game industry in the future.

Through different instructional steps of this course, the students are required to master the types of games, understand the game development procedures and key technologies from the perspective of development history of game design and game platform, know the basic composition of game development software and game engine, and understand the basic computing methods of 2D and 3D games. The students are also required to understand the design thoughts of games and its relationship with design and development, and master the basic theory or concepts of game design.

**Reference book:**

Unity Game Development Skills, Cheng Mingzhi, Wang Yifu, Defense Industry Press

**Prerequisite**: 3D Animation Design

Voice Recognition and Natural Language Processing (2 credits)

**Course code**: b2012147

**Suitable majors**: Intelligent Science and Technology

**Instructor**: Du Yi, Wang Tong

**Brief introduction:**

Course objective: through the course, the students are able to understand and master the basic knowledge of speech synthesis, voice dictation, grammar identification and semantic comprehension and complete program design or function realization with the learned voice recognition and natural language processing technology. The course contents include the speech synthesis (transfer a sentence of words into voice and make the machine speak like human-beings through synthesis of different voices, speed and tones), voice dictation (transfer a sentence of voice into words and recognize the common vocabulary, sentences and tones and punctuate automatically), grammar recognition (judge whether the spoken contents match with the predefined grammar for the use of judging whether the users make some instructions) and semantic understanding (analyze the intentions of the voices or words of the users and give corresponding response).

**Reference book:**

Computer Natural Language Processing, Wang Xiaolong, Guan Yi and others, Tsinghua University Press

**Prerequisite**: Object-orientation Technology, Mode Identification

**Voice Signal Processing (2 credits)**

**Course code**: b2012148

**Suitable majors**: Electronic Information Engineering

**Instructor**: Hu Jinyan, Gong Yumei

**Brief introduction:**

Course objective: help the students understand the basic math models of voice signals and master the common methods of voice signal analysis, theory and common methods of voice encoding and voice recognition.

Course contents: introduces the voice signal processing and its development process, the system of voice generation and human beings’ sense of hearing, the time/frequency domain feature analysis of voice signal, the linear prediction theory of voice signal, related knowledge of voice encoding and the contents of voice recognitions.

**Reference book:**

Voice Signal Processing (2nd edition), Han Jiqing, Tsinghua University Press

**Prerequisite**: Digital Signal Processing

**Cloud Computing and Cloud Safety (3 credits)**

**Course code**: b2012149

**Suitable majors**: Network Engineering

**Instructor**: Yang Yingchun

**Brief introduction:**

Course objective: understand the composition methods of cloud computing and cloud service, and provide basic solutions for common cloud computing problems. Course contents: the core concept of cloud computing and basic knowledge of cloud safety, structure, arrangement and service mode of cloud computing, cloud application scene of real word, the safety problems, legal risks and supervision of cloud computing and risk evaluation, the safety problems, cloud data safety, key strategy and practice of cloud computing safety protection of cloud computing structure design, construction of personal cloud and selection of safety standards of external cloud service provider, methods and tools of cloud safety evaluation, the safety problems and solutions in the operational process.

**Reference book:**

Cloud Computing Safety: Structure, Strategy, Standard and Operation, (US) Winkler, translated by Liu Gezhou, China Machines Press

**Prerequisite**: Network Safety

**Movement Rules (2 credits)**

**Course code**: b2012150

**Suitable majors**: Digital Media Technology

**Instructor**: Zheng Lei

**Brief introduction:**

Understand and master the rules of animation design, features of animation show and 12 animation laws of Disney, use the framework design of roles and make natural and smooth role action according to the animation movement rules.

**Prerequisite**:

Animation Movement Rules, Jia Jingpeng, China Youth Press

**OFDM Optical Communication (3 credits)**

**Course code**: b2012151

**Suitable majors**: Optical Information Science and Engineering

**Instructor**: Shao Yufeng, Fang Anle

**Brief introduction:**

This course introduces the OFDM and related technology, standards or system as the core technology of B3G/4G, explains the synchronization problems in the broadband wireless mobile communication OFDM system, including the symbol timing synchronization, carrier frequency synchronization and sampling clock synchronization technology in the two transmission mode of continuous and burst grouping. Besides, the course also analyzes the synchronization of OFDMA, TDS-OFDM of the current hot wireless communication technologies and provides new synchronization plans and algorithm.

**Reference book:**

OFDM Optical Communication, Shao Yufeng, Self-edited textbook

**Prerequisite**: Communication Theory, Optical Network, Electromagnetic Field and Electromagnetic Wave

**Intelligent Mathematical Foundation and Application (2 credits)**

**Course code**: b2012152

**Suitable majors**: Intelligent Science and Technology

**Instructor**: Du Yi, Yang Wenjing

**Brief introduction:**

Course objective: based on the study of basic program design and data structure, help the students understand the common data analysis methods and program realization through case study. The course contents include the use of data analysis tools, acquisition, cleaning, classification, clustering, regression and feature reduction of real data, and the application of the above methods in text analysis, emotional analysis, recommendation, computer visual sense and big data.

**Reference book:**

Machine Learning System Design, Willi, Richert Luis, Pedro, Coelho, translated by Liu Feng, Posts & Telecom Press

**Prerequisite**: Data Mining Technology, Intelligent Mathematical Foundation and Application, Mode Identification, Artificial Intelligence

**Intelligent Information Acquisition Technology (2 credits)**

**Course code**: b2012154

**Suitable majors**: Intelligent Science and Technology

**Instructor**: Xue Jianxin, Wang Tong, Du Yi

**Brief introduction:**

Course objective: based on the study of basic program design and data analysis, help the students understand the key contents and technology of search engine and information acquisition technology. The course contents include the basic theory and technology of information acquisition, the research and technology in the field of search engine and information acquisition, specially the related technology realizing the user’s personal searching, the common user-oriented application need, and the discussion on how to improve the ranking of webpage in the search engine and how to improve the search precision from the perspective of Web station maintenance or the common users of search engine.

**Reference book:**

Search Engine and Information Acquisition Technology, Xu Baowen, Zhang Weifeng, Tsinghua University Press

**Prerequisite**: Object-oriented Technology, Data Mining Technology

**Introduction to Specialty B (1 credit)**

**Course code**: b2012155

**Suitable majors**: Electronic Information Engineering, Optical Information Science and Engineering, Computer Science and Technology, Software Engineering, Digital Media Technology, Communications Engineering, Network Engineering, Computer and Computing Science, Intelligent Science and Technology

**Instructor**: Wang Zhifeng, Zhang Shiming, Shi Lingxiang, Ma Wenxin

**Brief introduction:**

Understand the brief introduction and frontiers of related specialty, improve the students’ understanding of the related specialty, include the study of knowledge, related ability cultivation, employment field, specialty construction and market need, help the students to determine the research field.

**Reference book:**

Introduction to Specialty (Self-edited), Wang Zhifeng, Zhang Shiming, Shi Lingxiang, Ma Wenxin, self-edited

**Free Space Optical Communication (2 credits)**

**Course code**: b2012156

**Suitable majors**: Optical Information Science and Engineering

**Instructor**: Wang Liandong, Shao Yufeng

**Brief introduction:**

Free Space Optical Network is a next generation communication network which uses optical waves instead of microwaves potentially offering faster communication with ultra band width, meaning more complex communication services can be simultaneously offered. The technology has been discussed for quite some time, and has shown continuous development; however, some obstacles have been creating bottle neck in order to materialize the technology, such as hardware and security issues. This book describes the network concepts in simple language starting with point-to-point free space optics basics and develops the discussion into networking, interoperability with existing communication network, and security using simple language suitable for both communication professionals who are just getting into free space optical communication field and graduate students who majors optical communications. The book will serve as a road-map to implement free space optical networks, and the author plans to review and update the contents in three year interval.

**Reference book:**

Free Space Optical Networks for Ultra-Broad Band Services, Stamatios V. Kartalopoulos, Wiley

**Prerequisite**: Communication Theory, Optical Network, Electromagnetic Field and Electromagnetic Wave

**Generic Cabling Engineering (2 credits)**

**Course code**: b2012157

**Suitable majors**: Network Engineering

**Instructor**: Zheng Jian

**Brief introduction:**

Course objective: mast theory, technology and practice of generic cabling engineering. Course contents: the basic theory and methods of generic cabling, features of different communication media and connection component, design need analysis of generic cabling, principle and steps of subsystem design, the construction and acceptance of generic cabling system.

**Reference book:**

Generic Cabling Engineering, Zheng Jian, Tsinghua University Press

**Prerequisite**: Computer Network

**Optimization Methods (2 credits)**

**Course code**: b2012158

**Suitable majors**: Information and Computing Science

**Instructor**: Wang Weixiang, Gui Shenghua

**Brief introduction:**

Convex optimization concept and theory, different methods and convergence of precise linear search, imprecise linear search and trust region, unrestraint optimization problem algorithm of steepest descent algorithm, Newton and quasi-Newton method, non-linear least square problems of practical problems of Gauss-Newton methods (including improved damping Gauss-Newton methods) and the trust region methods, the solution of equality constrained quadratic programming and the active set methods of convex quadratic programming, the theory and methods of constrained optimization, quadratic penalty function terms and interior point penalty function terms and SQP methods.

**Reference book:**

Optimization Methods and Application, Guo Ke, Higher Education Press

**Prerequisite**: Advanced Mathematics, Liner Algebra

**Operational Research (2 credits)**

**Course code**: b2012159

**Suitable majors**: Information and Computing Science

**Instructor**: Fan Jing, Gui Shenghua

**Brief introduction:**

Through this course, the students are required to master the most basic modeling technology, quantitative analysis and optimization method, solve basic operational research problems, get familiar with the modeling conditions, steps and techniques, abstract accurate models from practical backgrounds, and have the elementary ability to solve practical problems with quantitative methods, laying a good basis for the study of specialty courses and providing necessary tools or methods.

The course contents include linear planning, simplex methods, artificial variable method, dual problem, precision analysis, and economic explanation of dual variable, Traffic and Transportation problem, assignment problem, dynamic planning problem, smallest supportive tree problem, shortest path problem, largest flow problems and others.

**Reference book:**

Operational Research, Operational Research Textbook Editing Group, Tsinghua University Press

**Prerequisite**: Mathematical Analysis, Linear Algebra

**Probability and Mathematical Statistics (2 credits)**

**Course code**: b2012160

**Suitable majors**: Information and Computing Science

**Instructor**: Zhan Xiaoling, Zhang Xuanhao

**Brief introduction:**

Probability is a mathematical discipline researching on the statistical regularity of random phenomenon in quantitative way, while the mathematical statistics researches on how to effectively collect and analyze the data affected by random phenomena based on the probability, and make statistical forecast or decision. Through this course, the students are required to master the basic knowledge of random event and its probability, random variable and its distribution, multi random variable and its distribution, digital features of random variable and mathematical statistics, the basic concepts and theory of parameter estimation, hypothetic test, and the basic computing ability and basic ability of analysis and decision.

**Reference book:**

Probability and Mathematical Statistics, Wu Hanchang, China Renmin University Press

**Prerequisite**: Mathematical Analysis

**Discrete Mathematics (2 credits)**

**Course code**: b2012161

**Suitable majors**: Information and Computing Science

**Instructor**: Wang Shuai, Jiang Cunli, Zhou Hanping

**Brief introduction:**

This course is a core basic course for the major of information and computing science. The mastering of basic discrete mathematical knowledge is important to the study of following courses, laying a solid mathematical basis for the following courses. The course contents introduces the basic knowledge of set theory (set, set of natural numbers, binary relationship), combinatorial theory (discrete function, counting and generation), algebra system, mathematical logic (propositional logic and predicate logic) and graph theory (graph, tree), group theory (group, ring and region), which is closely related to computing science.

**Reference book:**

Discrete Mathematics: Basic Instruction of Computer Mathematics, Jin Yiqing, Zhejiang University Press

**Practice of DSP Engineering (2 credits)**

**Course code**: b4012001

**Suitable majors**: Electronic Information Engineering

**Instructor**: Hu Jinyan, Gong Yumei

**Brief introduction:**

Course objective: help the students master the DSP hardware structure, development environment and tools represented by TMS320C6x, the realization, computing of DSP plan engineering, computing method design and optimization and have certain engineering practical ability.

Course contents: DSP system scheme design and development procedure, TMS320C6x processor hardware structure, development environment and tools, DSP smallest system design, DSP computing method design of basic digital signal processing, optimization and engineering realization.

**Reference book:**

Practice of DSP Engineering, Hu Jinyan, Gong Yumei, Self-edited textbook

**Prerequisite**: DSP Theory and Application

**Senior Management of Linux Network Server (3 credits)**

**Course code**: b4012002

**Suitable majors**: Network Engineering

**Instructor**: Wang Jian

**Brief introduction:**

Course objective: master the performance analysis principle and optimization method of Linux server. Course contents: the installation, configuration, management, use, working theory and performance tuning techniques of common web application software like Nginx, Varnish and Memcached, use and management techniques of open source backup software Bacula and open source data mirroring backup tools Rsync and Unison, restore data documents and MySQL database deleted by error with Ext3grep tools, construct high-available load balance cluster with LVS+Heartbeat, Piranha, LVS+Keepalived and the configuration, management, maintenance and supervision of red hat cluster suit.

**Reference book:**

Construction Practice of High-performance Linux Server—Supervision of Operation and Maintenance, Performance Tuning and Cluster Application, Gao Junfeng, China Machines Press

**Prerequisite**: Computer Network

**Course Design of Course Project (2 credit)**

**Course code**: b4012003

**Suitable majors**: Software Engineering

**Instructor**: Wen Wen

**Brief introduction:**

Skillfully master the use of VS.NET 2005 Development C# for .NET Web Form and content output to the browser, acquire the user’s data from the terminal of browser, master the use of server’s controlling components and user’s controlling components, application program level variables, the connection of different databases and operation of database, the construction and reference of web service. Through this practice, the students are required to create web-based database related applications with personal style, creative ideas with learned knowledge.

**Reference book:**

Practice of ASP.NET Webpage Design and Website Development, Ma Jun, Posts & Telecom Press

**Prerequisite**: HTML, WEB Development Technology, Introduction to Database System, Practice of Database Technology

**Program Design and Practice (1 credit)**

**Course code**: b4012004

**Suitable majors**: Optical Information Science and Engineering, Communications Engineering

**Instructor**: Lin Shiwei

**Brief introduction:**

This course is a practice course of Basic Program Design, preparing for the Shanghai Computer Grading Examination (2nd Grade) (C Program Design). Through this course, the students are required to improve their programming ability, modeling program design ability, generic algorithm’s programming ability and comprehensive commissioning ability through a large amount of programming practice (over 50-100 sentences for each program) based on the learned knowledge of C language of program design, so that the students are able to read and edit the computer program meeting the requirements of Shanghai Computer Grading Examination (2nd Grade) (C Program Design).

**Reference book:**

Program Design and Practice (Electric Version), Self-edited

**Prerequisite**: selective course: Basic Program Design

**Program Design and Practice (2 credits)**

**Course code**: b4012005

**Suitable majors**: Electronic Information Engineering, Computer Science and Technology, Software Engineering, Digital Media Technology, Network Engineering, Information and Computing Science, Intelligent Science and Technology

**Instructor**: Lin Shiwei

**Brief introduction:**

This course is a practice course of Basic Program Design, preparing for the Shanghai Computer Grading Examination (2nd Grade) (C Program Design). Through this course, the students are required to improve their programming ability, modeling program design ability, generic algorithm’s programming ability and comprehensive commissioning ability through a large amount of programming practice (over 50-100 sentences for each program) based on the learned knowledge of C language of program design, so that the students are able to read and edit the computer program meeting the requirements of Shanghai Computer Grading Examination (2nd Grade) (C Program Design).

**Reference book:**

Program Design and Practice (Electric Version), Self-edited

**Prerequisite**: selective course: Basic Program Design

**Big Data Technology and Practice (3 credits)**

**Course code**: b4012006

**Suitable majors**: Network Engineering

**Instructor**: Ma Chuang

**Brief introduction:**

Course objective: master the basic knowledge and supportive technology of big data technology, cluster-technology-based source integrated cloud computing, and virtual-technology-based source cutting cloud computing. Course contents: introduction to big data, related technology, virtual technology, clustered system basis, MPI, Hadoop, HPCC, Storm, data center technology and cloud computing big data simulation technology and others.

**Reference book:**

Cloud Computing and Big Data Technology, Wang Peng, Posts & Telecom Press

**Prerequisite**: Data Structure, Basic Program Design

**Course Design of Single Chip Machine (2 credits)**

**Course code**: b4012007

**Suitable majors**: Electronic Information Engineering, Communications Engineering

**Instructor**: Gu Yang, Xu Guanjie, Chai Yu

**Brief introduction:**

This course is a practical course for the cultivation of application and practical ability and improvement of students’ comprehensive quality. Through this course, the students are able to understand the current status and development trends of single chip machine and master the design of single chip machine application system.

The course contents include the A/D transformer in forward path, D/A transformer in backward path, the power switching components and interfacing technology, data collection and simple controlling procedures, data processing procedures and other practical program design. With the feature of high practicability and a large amount of contents, the course emphasizes the instruction of basic knowledge and cultivation of practical ability, stresses the generation of using sense and recommends the instructional methods of lecturing, class discussion, self-study after class and machine debugging and others.

**Reference book:**

Practice of Single Chip Machine Application I, Ma Wenxin, Self-edited

**Prerequisite**: Digital Electric Technology, Single Chip Machine Theory and Application

**Low-voltage Appliance Internship (1 credit)**

**Course code**: b4012008

**Suitable majors**: Optical Information Science and Engineering, Automation

**Instructor**: Zheng Pu, Yao Rongrong, Gao Shunfu and others

**Brief introduction:**

Low-voltage appliance internship is a practical step for the undergraduate education of mechanic or electric engineering majors, which is also a basic course for the study of basic electric knowledge and techniques. Through the course, the students are able to understand their theoretical knowledge and corresponding electrician standards at home and abroad (like low-voltage electric operational standards) and get familiar with the basic structure and working theory of different appliance components and electric facilities, master the configuration, type selection, installation and commissioning of common electric components and appliances, have the independent design ability and the ability of reading electric circuit drawings, laying a good basis for the study of following courses.

**Reference book:**

Instruction of Low-voltage Appliance Internship, self-edited textbook,

**Practice of Circuit Design Simulation (1 credit)**

**Course code**: b4012009

**Suitable majors**: Communications Engineering, Measurement and Control Technology and Instrumentation:

**Instructor**: Liu Yiping, Feng Tao

**Brief introduction:**

Understand the basic operation of circuit simulation software, learn DC/AC analysis, transient analysis, and parameter scanning analysis and learn how to construct an analog simulated circuit and the fault setting and analysis methods, and master the use of simulation of common meters or instruments.

**Reference book:**

Application of NI Multisim 11 Circuit Simulation, Lei Yue, Publishing House of Electronics Industry

**Prerequisite**: Basic Circuit

**Practice of Circuit Design Simulation (2 credit)**

**Course code**: b4012010

**Suitable majors**: Electronic Information Engineering, Optical Information Science and Engineering

**Instructor**: Mao Liancheng, Kang Liang, Xie Wei

**Brief introduction:**

Understand the basic operation of circuit simulation software, learn DC/AC analysis, transient analysis, parameter scanning analysis and learn how to construct an analog simulated circuit and the fault setting and analysis methods, and master the use of simulation of common meters or instruments.

**Reference book:**

Application of NI Multisim 11 Circuit Simulation, Lei Yue, Publishing House of Electronics Industry

**Prerequisite**: Basic Circuit

**Practice of Basic Electric Engineering (2 credits)**

**Course code**: b4012011

**Suitable majors**: Electronic Information Engineering

**Instructor**: Wang Jianjun, Yu Haihua, Song Shaojing

**Brief introduction:**

Course objective: the students are required to understand the basic methods and key points of component identification and selection, and the welding techniques of components, have the ability to make electric products and analyze or solve problems independently.

Course contents: the classification and type naming of electric components, performance data and value methods, basic measurement methods and common sense of using. Through the welding of electric circuit board, help the students understand the component test, layout design of component, installation and assembly of component, conductor layout and welding and other basic skills.

**Reference book:**

Practice of Electric Engineering Basis (self-edited), Wang Jianjjun, Yu Haihua, Song Shaojing, self-edited

**Prerequisite**: Basic Circuit Analysis, Analog Electric Technology, Digital Electric Technology

**Basic Training of Electric Engineering I (1 credit)**

**Course code**: b4012012

**Suitable majors**: Optical Information Science and Engineering

**Instructor**: Shao Yufeng, Wang Liandong, Fang Anle

**Brief introduction:**

Course objective: cultivate the senior engineering technical talents for the research, design, manufacturing, application and development of different electric instrument and information system in the field of Optical Information Science and Engineering. Course contents: complete the training of electric engineering basis I based on the theoretical courses.

**Reference book:**

Basic Training of Electric Engineering I, Shao Yufeng, Wang Liandong, Fang Anle, self-edited

**Basic Training of Electric Engineering II (1 credit)**

**Course code**: b4012012

**Suitable majors**: Optical Information Science and Engineering

**Instructor**: Shao Yufeng, Wang Liandong, Fang Anle

**Brief introduction:**

Course objective: cultivate the senior engineering technical talents for the research, design, manufacturing, application and development of different electric instrument and information system in the field of Optical Information Science and Engineering. Course contents: complete the training of electric engineering basis I based on the theoretical courses.

**Reference book:**

Basic Training of Electric Engineering II, Shao Yufeng, Wang Liandong, Fang Anle, self-edited

**Standards and Practice of Electric Engineering Design (1 credit)**

**Course code**: b4012014

**Suitable majors**: Electronic Information Engineering

**Instructor**: Gong Yumei, Hu Jinyan, Yang Wenbo

**Brief introduction:**

Course objective: help the students understand the development procedures, design standards and version control of electric informational products, preparing for the students’ adaption into the enterprise product development environment.

Course contents: development procedure, production process, life cycle and reliability of electric informational products, the standard, marking mode, version control and writing of related project documents.

**Reference book:**

Standards and Practice of Electric Engineering Design, Gong Yumei, Hu Jinyan, Yang Wenbo, Self-edited textbook

**Prerequisite**: Basic Circuit Analysis, Analog Electric Technology, Digital Electric Technology

**Electric Circuit CAD Internship (2 credits)**

**Course code**: b4012015

**Suitable majors**: Computer Science and Technology

**Instructor**: Wang Zhenxing, Li Bin

**Brief introduction:**

It is a practical course. Modern Electric Circuit Design is a technology of computer assistant circuit design, circuit drawing with computer, printed circuit board making, circuit design with the programmable logic components under the assistance of computer. Electric CAD (Protel) has become the necessary tools for the electric circuit designers right now. The course objective is to make students master the general methods of circuit design with Protel and lay a basis for the application of circuit theoretical knowledge into practice.

**Practice of Electronic Information Engineering (2 credits)**

**Course code**: b4012017

**Suitable majors**: Electronic Information Engineering

**Instructor**: Ma Wenxin, Yu Haihua, Wang Jianjun

**Brief introduction:**

Course objective: through this course, train the students’ application of basic theories of electric engineering and embedded technology, train their comprehensive operational skills and creative ability and improve their comprehensive quality.

Course contents: digital oscilloscope theory, simple oscilloscope hardware design, basic theory and application of uC/OS-II operational system, program editing and commissioning, comprehensive performance evaluation of the system.

**Reference book:**

Instruction of Practice for Telecommunication Majors, Ma Wenxin, Self-edited Textbook

**Prerequisite**: Single Chip Machine Theory and Application, Application of Embedded System

**Course Internship of Humanoid Robot (2 credits)**

**Course code**: b4012018

**Suitable majors**: Intelligent Science and Technology

**Instructor**: Cao Xiaoling, Yang Wenjing

**Brief introduction:**

Course objective: based on the study of humanoid robot, through course practice, master the software design and realization methods based on the intelligent humanoid robot. Course contents: get familiar with the robot platform, including the operational platform, systematic structure, interfacing mode and development platform; master the acquisition, integration and storage mode of robot input data; design and realize a kind of intelligent application with the operational platform of humanoid robot (unlimited), so as to complete the tasks under non-prescribed environment.

**Reference book:**

Robot Program Design, Zhong Qiubo, Xidian University Press

**Prerequisite**: Humanoid Robot

**Internship for the Major of Photoelectric Engineering I (3 credits)**

**Course code**: b4012019

**Suitable majors**: Optical Information Science and Engineering

**Instructor**: Shao Yufeng, Wang Liandong, Fang Anle

**Brief introduction:**

Course objective: cultivate the students’ comprehensive practical application ability of photoelectric engineering; cultivate the senior applied engineering technical talents for the software development, design and program editing in the filed of optical information science and engineering. Course contents: complete the internship session I for the photoelectric engineering majors based on the theoretical courses.

**Reference book:**

Internship for the Major of Photoelectric Engineering I, Shao Yufeng, Wang Liandong, Fang Anle, Self-edited Textbook

**Internship for the Major of Photoelectric Engineering II (3 credits)**

**Course code**: b4012020

**Suitable majors**: Optical Information Science and Engineering

**Instructor**: Shao Yufeng, Wang Liandong, Fang Anle

**Brief introduction:**

Course objective: cultivate the students’ comprehensive practical application ability of photoelectric engineering; cultivate the senior applied engineering technical talents for the software development, design and program editing in the filed of optical information science and engineering. Course contents: complete the internship session II for the photoelectric engineering majors based on the theoretical courses.

**Reference book:**

Internship for the Major of Photoelectric Engineering II, Shao Yufeng, Wang Liandong, Fang Anle, Self-edited Textbook

**Photoelectric Inspection Experiment (2 credits)**

**Course code**: b4012021

**Suitable majors**: Optical Information Science and Engineering

**Instructor**: Shao Yufeng, Wang Liandong, Fang Anle

**Brief introduction:**

Course objective: cultivate the comprehensive practical and application ability of photoelectric test technology and cultivate senior applied engineering technical talents for the software development, design and program editing in the field of photoelectric information science and technology. Course contents: complete the photoelectric testing experiments based on the theoretical courses, covering the knowledge in the field of optical-electric conversion, electric-optical conversion, electric-optical modulation, optical-electric demodulation and others.

**Reference book:**

Photoelectric Inspection Experiment, Shao Yufeng, Wang Liandong, Fang Anle, Self-edited Textbook

**Graduation Internship and Graduation Design (Thesis) for the Major of Optical Information Science and Engineering (12 credits)**

**Course code**: b4012022

**Suitable majors**: Optical Information Science and Engineering

**Instructor**: Shao Yufeng, Wang Liandong, Fang Anle

**Brief introduction:**

Course objective: cultivate the senior applied engineering technical talents for the software development, hardware design, preparation and application in the field of optical information science and engineering. Course contents: complete the graduation design (thesis) based on the learned knowledge and practice of this major.

**Reference book:**

Instruction for the Graduation Internship and Graduation Design (Thesis) for the Major of Photoelectric Information, Shao Yufeng, Wang Liandong, Fang Anle, Self-edited Textbook

**Photoelectric Component Design and Simulation Experiment (2 credits)**

**Course code**: b4012023

**Suitable majors**: Optical Information Science and Engineering

**Instructor**: Shao Yufeng, Wang Liandong, Fang Anle

**Brief introduction:**

Course objective: cultivate the students’ practical and application ability of photoelectric component design and simulation, and cultivate senior applied engineering technical talents for the software development, hardware design, preparation and application in the field of optical information science and engineering. Course contents: complete the photoelectric component design and simulation experiments based on the learned knowledge and practice of this major.

**Reference book:**

Photoelectric Component Design and Simulation Experiment, Shao Yufeng, Wang Liandong, Fang Anle, Self-edited Textbook

**Practice of Optical Communication Technology (2 credits)**

**Course code**: b4012024

**Suitable majors**: Electronic Information Engineering

**Instructor**: Shao Yufeng, Wang Liandong, Fang Anle

**Brief introduction:**

Course objective: cultivate the students’ practical and application ability of key optical communication technologies; and cultivate senior applied engineering technical talents for the software development, hardware design, preparation and application in the field of optical information science and engineering. Course contents: complete the practice of optical communication technology based on the theoretical courses, including high-speed optical signal transmission, broadband optical access network, optical packet switching technology, free space optical communication and visible optical communication and other fields.

**Reference book:**

Practice of Optical Communication Technology, Shao Yufeng, Wang Liandong, Fang Anle, Self-edited Textbook

**Practice of Optical Fiber Communications Engineering (3 credits)**

**Course code**: b4012025

**Suitable majors**: Optical Information Science and Engineering

**Instructor**: Shao Yufeng, Wang Liandong, Fang Anle

**Brief introduction:**

Course objective: cultivate the students’ practical and application ability of optical fiber Communications Engineering and cultivate senior applied engineering technical talents for the software development, hardware design, preparation and application in the field of optical information Sscience and engineering. Course contents: complete the practice of optical fiber Communications Engineering technology based on theoretical courses, including the optical transmitter tuning, optical receiver tuning, optical fiber fuse and network connection.

**Reference book:**

Practice of Optical Fiber Communications Engineering, Shao Yufeng, Wang Liandong, Fang Anle, Self-edited Textbook

**Optical Fiber Communication and Access Network Experiment (2 credits)**

**Course code**: b4012026

**Suitable majors**: Optical Information Science and Engineering

**Instructor**: Shao Yufeng, Wang Liandong, Fang Anle

**Brief introduction:**

Course objective: cultivate the practical and application ability of key technologies of optical fiber communication and access network, and cultivate the senior applied engineering technical talents for the software development, design and program editing in the field of optical information science and engineering. Course contents: complete related optical fiber communication and access network experiments based on the theoretical courses.

**Reference book:**

Optical Fiber Communication and Access Network Experiment, Shao Yufeng, Wang Liandong, Fang Anle, Self-edited Textbook

**Practice of Laser Engineering Technology (3 credits)**

**Course code**: b4012027

**Suitable majors**: Optical Information Science and Engineering

**Instructor**: Shao Yufeng, Wang Liandong, Fang Anle

**Brief introduction:**

Course objective: cultivate the practical and application technology of laser engineering, and cultivate senior applied engineering technical talents for the software development, design and program editing in the filed of optical information science and engineering. Course contents: complete the practice of laser engineering technology based on the theoretical courses, including configuration and commissioning of laser device, measurement and analysis of optical spectrum.

**Reference book:**

Practice of Laser Engineering Technology, Shao Yufeng, Wang Liandong, Fang Anle, Self-edited Textbook

**Course Design for the Computer System Structure (2 credits)**

**Course code**: b4012029

**Suitable majors**: Computer Science and Technology

**Instructor**: Kong Liangiang, Chen Lin

**Brief introduction:**

This course is the auxiliary course design for the course of computer system structure, which introduces the realization of simple computer system in auxiliary test device with the learned basic knowledge of system structure.

**Internship of Computer Network (2 credits)**

**Course code**: b4012030

**Suitable majors**: Network Engineering, Intelligent Science and Technology

**Instructor**: Wang Jian, Si Taozhi, Wu Xiumei and others

**Brief introduction:**

Course objective: master the network construction operations of common network operational system Windows Server 2003 and complete different network services.

Course contents: construct a peer-to-peer network; realize the resource sharing in one working group and different working groups; master the LAN resource management, the installation and configuration of DNS and DHCP; understand the management of remote terminal; master the management and configuration of WEB website and the installation and configuration of FTP server; master the installation and configuration of MALL server; master VPN installation and configuration; master the basic configuration and use of network switching facility.

**Reference book:**

Instruction of Windows Server 2003 Network Construction, Si Taozhi, Xidian University Press

**Prerequisite**: Computer Network

**Basic Practice of Computer Hardware (3 credits)**

**Course code**: b4012031

**Suitable majors**: Computer Science and Technology

**Instructor**: Yang Jie, Cui Lili, Chen Zhiyi

**Brief introduction:**

This course requires the students to master the basic knowledge of electric circuit in the computer system, cultivate the basic experimental skills, circuit design and comprehensive application ability and computer tool using ability of the students, and improve their innovative ability and quality, laying a practical basis for the better learning of following courses. From the perspective of practice, the course requires the students to compose an experimental instrument with the FD-CES-C computer and design, assemble and commission an 8-digit microcomputer with double accumulator microprogram controller based on the completion of the course experiments, laying a basis for the improvement of students’ practical application ability.

**Internship of Computer Composition (2 credits)**

**Course code**: b4012032

**Suitable majors**: Communications Engineering

**Instructor**: Yang Jie, Huang Lijia, Cui Lili

**Brief introduction:**

Course objective: help the students strengthen their understanding of the computer system structure through the test, connection, operation and monitoring of different components of computer composition experiment instrument and cultivate their development and application ability of hardware or software system through creation of assembly program and instructional system.

This course is a practical course, emphasizing on the cultivation of self-studying and practical ability, laying a solid basis for the following specialty course.

**Reference book:**

**Prerequisite**: Computer Composition Theory

**Course Design of Interactive Digital Media (2 credits)**

**Course code**: b4012033

**Suitable majors**: Digital Media Technology

**Instructor**: Zheng Lei, Pang Yanxia

**Brief introduction:**

This course introduces more 3D interactive technologies and provides trainings of practical skills through practical project.

**Reference book:**

Unity Game Design and Realization, Jiateng Zhengshu

**Prerequisite**: 3D Animation Design

**Course Design of Open Source Software Program (1 credit)**

**Course code**: b4012034

**Suitable majors**: Information and Computing Science

**Instructor**: Lin Shiwei, Zhou Hanping, Liu Min

**Brief introduction:**

This course is a practical course for Open Source Software Program Design, with the main purpose to strengthen the instructional effects of theoretical courses, improve their practical ability and complete corresponding dynamic website. With the purpose of to meet the requirements of graduation design, each student is required to program a dynamic website with practical application background independently and simulate the publishing of the website under the machine house environment. The instructor shall provide the assignment bok and the students shall complete the

**Reference book:**

Instruction for the Course Design of Open Source Program, electric teaching plan and the course design

**Internship of Routing and Switching Technology (3 credits)**

**Course code**: b4012035

**Suitable majors**: Network Engineering

**Instructor**: Si Taozhi, Yang Ying

**Brief introduction:**

Course objective: strengthen the application of basic theoretical knowledge of routing protocols and switching technology. Course contents: the comprehensive configuration of routers and switches inside the intranet, the design and realization of small-scale, middle-scale and large-scale network, the comprehensive configuration and test of switch and router and others.

**Reference book:**

Routing Protocol and Switching Technology, Tsinghua University Press

**Prerequisite**: Routing and Switching Technology

**Internship of Object-oriented Technology (2 credits)**

**Course code**: b4012036

**Suitable majors**: Intelligent Science and Technology

**Instructor**: Du Yi, Xue Jianxin, Yang Wenjing

**Brief introduction:**

Objective: strengthen understanding of the object-oriented technology through practice and skillfully master the application of related Java technology. Contents: class and object experiment, inheritance and interface experiment, internal class and abnormal class experiment, Java swing graphic user’s interface experiment, JDBC database operational experiment, multi-thread experiment, Java network programming experiment.

**Reference book:**

Instruction of Java Object-oriented Program Design Experiments, Geng Xiangyi, Zhang Yueping, Tsinghua University Press

**Prerequisite:** Data Structure and Algorithm, Introduction to Database System

**Experiment of Analog Electric Technology (1 credit)**

**Course code**: b4012037

**Suitable majors**: Electronic Information Engineering

**Instructor**: Yang Wenbo, Ji Yi

**Brief introduction:**

Course objective: help the students master the working theory and analysis methods of digital logic circuit, and have the ability to analyze and design the main logic components, laying a basis for the study of following courses and work in the field of electric technology. Course contents: combine logic circuit, latch and trigger, sequential logic circuit, common sequential logic functional component, the generation and conversion of pulse waveform, digital-analog and analog-digital converter.

**Reference book:**

Digital Electric Experiment, Yang Wenbo, Ji Yi, Self-edited Textbook

**Prerequisite**: Basic Circuit Analysis

**Internship of Enterprise Database Management System (2 credits)**

**Course code**: b4012038

**Suitable majors**: Software Engineering

**Instructor**: He Haihui

**Brief introduction:**

This course is a practical course for the software engineering majors. The course objective: introduce the Oracle database widely used in enterprises; understand the installation and system structure of database system, design and use of standard SQL and extensive SQL. The course requires the students to skillfully master the SQL language application and PL/SQL program design under Oracle database system, understand the right setting and roles in Oracle environment, master the storage process and use of trigger, understand the concept of safety and completeness of database, and know the realization methods of safety and completeness in Oracle database system.

**Reference book:**

Oracle Database Technology and Experimental Instruction, Qian Xuezhong, Lin Ting, Zhang Ping, Tsinghua University Press

**Prerequisite**: Instruction to Database, Course Internship of Introduction to Database System

**Course Design of Embedded Software Development Technology (3 credits)**

**Course code**: b4012039

**Suitable majors**: Computer Science and Technology

**Instructor**: Shi Linxiang

**Brief introduction:**

This course requires the students master the application development technology of embedded system, so as to improve their quality and creative ability and lay a practical basis for the graduation design and work in the future. It is also the auxiliary practical course for the Embedded Software Development Technology.

**Training of Embedded System Engineering (2 credits)**

**Course code**: b4012040

**Suitable majors**: Electronic Information Engineering

**Instructor**: Ma Wenxin, Yu Haihua, Wang Jianjun

**Brief introduction:**

Course objective: help the students understand the concept and basic experiments of STM32F10x based microcontroller system and master the hardware design and corresponding software design of STM32F10x based microcontroller system.

Course contents: complete the design and realization of application system with GPIO, DAC, USART, SPI interface and I2C, CAN bus, LED monitor and other related circuit.

**Reference book:**

Instruction of Training of Embedded System Engineering, Ma Wenxin, Yu Haihua, Wang Jianjun, Self-edited Textbook  
**Prerequisite**: Single Chip Machine Theory and Application, Application of Embedded System

**Design of Embedded System (3 credits)**

**Course code**: b4012041

**Suitable majors**: Computer Science and Technology

**Instructor**: Hou Dongliang, Li Bin

**Brief introduction:**

This course is the last practical course for the major of computer science and technology, covering the hardware and software knowledge of computer. The course introduces the development and design of typical embedded computer application system, laying a basis for the graduation design and work in the future.

**Artificial Intelligence Internship (1 credit)**

**Course code**: b4012042

**Suitable majors**: Intelligent Science and Technology

**Instructor**: Wang Tong

**Brief introduction:**

Course objective: solve practical problems with python language programming. Course contents: realization and application of neural network and other related algorithm, the realization and application of machine learning and other related algorithm.

**Reference book:**

Machine Learning In Action, Peter Harrington, Posts & Telecom Press

**Prerequisite**: Artificial Intelligence

**Practice of Software Engineering I (1 credit)**

**Course code**: b4012043

**Suitable majors**: Software Engineering

**Instructor**: Wang Shuai

**Brief introduction:**

Practice of Software Engineering I is a practical course, which is also an important practical instructional session for the cultivation of software development ability for the software engineering majors. Through practice, the students are required to get familiar with the use of common software modeling tools and have a comprehensive understanding of the software analysis and design, making preparations for the independence completion of software engineering practice II.

The course requires the students to complete the analysis design of automobile management system with the tools of visio, rational rose, Erwin, powerdesigner, encode and make related software documents, including need specification instruction, system design instruction, test plan, test analysis report and instruction of software use.

**Reference book:**

Instruction of Experiment and Practice of Software Development, Chen Jia, Cao Yan, Tsinghua University Press

**Prerequisite**: Introduction to Software Engineering

**Software Engineering Practice II (2 credits)**

**Course code**: b4012044

**Suitable majors**: Software Engineering

**Instructor**: Wang Shuai

**Brief introduction:**

Software Engineering Practice II is a practical course, which applies concept and theoretical knowledge of software engineering into practice. The course helps the students master the methods and technologies of software engineering, strengthens their understanding of the software engineering knowledge, improves their software development skills, creative engineering design ability and the ability to analyze and solve problems.

The course requires the students to complete the whole process of software development from need analysis, software design, encoding to software test operation in groups focusing on the software design and make related software documents. The subject of software design can refer to the instructor’s suggestions or be determined by the students themselves with the approval of instructors.

**Reference book:**

Instruction of Experiment and Practice of Software Development, Chen Jia, Cao Yan, Tsinghua University Press

**Prerequisite**: Introduction to Software Engineering, Software Engineering Practice I

**Internship of New Technology of Software Design (2 credits)**

**Course code**: b4012046

**Suitable majors**: Software Engineering

**Instructor**: Xue Jianxin

**Brief introduction:**

Course objective: get familiar with new technologies of mainstream enterprise software design and development. Course contents: 1) HTML application; 2) JSP application; 3) Struts; 4) Hibernate and MVC application; 5) Spring Application; 6) application of multi-framework integrated structure; 7) Ajax application; 8) comprehensive application.

**Reference book:**

Practical Instruction of Java EE (2nd edition), ISBN: 9787121254574, Zheng Aqi, Publishing House of Electronics Industry

**Prerequisite**: New Technology of Software Design

**Internship of Software Project Management (2 credits)**

**Course code**: b4012047

**Suitable majors**: Software Engineering

**Instructor**: Li Liping

**Brief introduction:**

This course strengthens the students’ understanding of software project management methods and technologies, requires the students to apply the theoretical knowledge of software project management into software project development, progressively master the use of project management tools in practice and improve their ability of project management, problem analysis and solution.

**Prerequisite**: Software Project Management

**Internship of Software Quality Guarantee and Test (2 credits)**

**Course code**: b4012048

**Suitable majors**: Software Engineering

**Instructor**: Zhu Bin

**Brief introduction:**

This course is an important instructional session with the combination of theories and practices. Course objective: help the students master different steps of software testing, master different automatic test tools and improve practical application ability, laying a solid basis for the learning and work in the future. During the whole process of test project execution, from unit test to integrated test until the end of the test process, the students are able to master the methods and skills of software test, receive the systematic training of scientific thinking methods, improve the software test technology, and have the practical operational ability and creative development ability.

**Reference book:**

Self-edited Textbook

**Internship of 3D Animation Design (3 credits)**

**Course code**: b4012049

**Suitable majors**: Digital Media Technology

**Instructor**: Zheng Lei

**Brief introduction:**

Learn the modeling rules, mapping skills, expression processing and skeleton binding of role animation in 3D animation technology and complete the design and production of role animation based on the learned knowledge.

**Reference book:**

Self-edited Textbook (electric version), Zheng Lei, Self-edited Textbook

**Prerequisite**: 3D Animation Design, Movement Rules

**Course Internship of Data Structure and Algorithm (2 credits)**

**Course code**: b4012050

**Suitable majors**: Communications Engineering

**Instructor**: Yang Wenjing He Haihui, Du Yi, Li Liping, Zhang Shiming, Xue Jianxin, Zhu Bin

**Brief introduction:**

As the following courses of Data Structure and Algorithm, it consolidates the learned knowledge of Data Structure and Algorithm, and improves the practical programming and program debugging ability.

Focusing on the computer practice, the course requires the students to firmly master the practical programming methods of basic algorithms in the course of Data Structure and Algorithm, strengthen their understanding of the basic algorithm and improve their practical application ability, laying a solid basis for the study of following courses and related works in the future.

**Reference book:**

Instruction of Course Internship and Experiment of Data Structure and Algorithm, Self-edited Textbook

**Prerequisite**: Data Structure and Algorithm

**Course Internship of Data Structure and Algorithm (3 credits)**

**Course code**: b4012051

**Suitable majors**: Electronic Information Engineering, Computer Science and Technology, Software Engineering, Digital Media Technology, Network Engineering, Information and Computing Science, Intelligent Science and Technology

**Instructor**: Yang Wenjing, He Haihui, Du Yi, Li Liping, Zhang Shiming, Xue Jianxin

**Brief introduction:**

As the following courses of Data Structure and Algorithm, it consolidates the learned knowledge of Data Structure and Algorithm, and improves the practical programming and program debugging ability.

Focusing on the computer practice, the course requires the students to firmly master the practical programming methods of basic algorithms in the course of Data Structure and Algorithm, strengthen their understanding of the basic algorithm and improve their practical application ability, laying a solid basis for the study of following courses and related works in the future.

**Reference book:**

Instruction of Course Internship and Experiment of Data Structure and Algorithm, Self-edited Textbook

**Prerequisite**: Data Structure and Algorithm

**Practice of Database Technology (2 credits)**

**Course code**: b4012052

**Suitable majors**: Computer Science and Technology

**Instructor**:

**Brief introduction:**

Course Internship of Database System is a comprehensive training of practical contents after learning the course of introduction to database system. Course objective: use the learned knowledge of the course of Introduction to Database System to design the database, including the structure design and behavioral design. There’re courses specially introducing the development of database application program for the major of software engineering, thus this course just gives a brief introduction on it.

**Practice of Database Technology (3 credits)**

**Course code**: b4012053

**Suitable majors**: Information and Computing Science

**Instructor**: Zhou Hanping, Wang Shuai, Liu Min

**Brief introduction:**

Understand the concept and database design methods; apply six stages of knowledge into the database design with emphasis on the database structure, including the use of design tools, design of storage process and trigger, training of T-SQL sentence and design of simple database application program with development tools.

**Reference book:**

Instruction of Experiments of Database, Nan Zhihong, Posts & Telecom Press

**Course Internship of Database System (2 credits)**

**Course code**: b4012054

**Suitable majors**: Software Engineering, Network Engineering, Intelligent Science and Technology

**Instructor**: Yan Yu

**Brief introduction:**

Course Internship of Database System is a practical course after the learning of course of introduction to database system. Course objective: design the database with the learned knowledge of the course of introduction to database system. Course contents: apply six stages of knowledge into the database design with emphasis on the database structure, including the use of design tools, design of storage process and trigger, training of T-SQL sentence and design of simple database application program with development tools.

**Reference book:**

Instruction of Experiment of Database, Yang Haixia, Posts & Telecom Press

**Prerequisite**: Introduction to Database System

**Course Internship of Data Mining Technology (3 credits)**

**Course code**: b4012056

**Suitable majors**: Information and Computing Science, Intelligent Science and Technology

**Instructor**: Xue Jianxin, Wang Tong, Du Yi

**Brief introduction:**

Course objective: get familiar with the application range of data mining and the application of data mining algorithm. Course contents: Apriori algorithm, K-means algorithm, SVM classification algorithm, Adaboost integration algorithm, K

**Practice of Mathematical Modeling (2 credits)**

**Course code**: b4012057

**Suitable majors**: Information and Computing Science

**Instructor**: Gui Shenghua, Wang Ruiping and others

**Brief introduction:**

Through the study of Mathematical Modeling, the course helps the students understand the basic concepts, theory and methods of mathematical modeling, and requires the students to understand the development history of mathematical modeling. The course also requires the students to master the elementary model, differential equation model, optimization model, probability model, statistical model and others.

**Reference book:**

Mathematical Model, Jiang Qiyuan, Higher Education Press

**Prerequisite**: Advanced Mathematics, Probability and Mathematical Statistics

**Practice of Mathematical Software (2 credits)**

**Course code**: b4012058

**Suitable majors**: Information and Computing Science

**Instructor**: Fan Jing, Xing Li

**Brief introduction:**

Mathematical Software is a new course after introducing computer technology and mathematical software into instruction. The mathematical experimental course in college is an important part of 21st Century Instructional Contents and Course System Revolution Plans of Higher Education. The course is a compulsory course for the major of mathematics, with the objective of learning MATLAB and its applications, helping the students master basic grammar, common functions and programming methods and the application of MATLAB in theoretical and practical problems. The main course content includes MATAB basic grammar, 2D and 3D drawing, elementary programming, the application in advanced mathematics, linear algebra and simple optimization problems.

**Reference book:**

MATLAB Mathematical Experiment, Hu Liangjian, Sun Xiaojun, Higher Education Press

**Prerequisite**: Mathematical Analysis, Linear Algebra, C Language, Data Structure

**Digital Electric Technology Experiment (1 credit)**

**Course code**: b4012059

**Suitable majors**: Electronic Information Engineering

**Instructor**: Liu Yiping, Xie Wei, Kang Liang

**Brief introduction:**

Understand the basic application of small-medium scale digital integrate circuit, including the combined logic, digital logic and pulse generation component.

**Reference book:**

Digital Electric Technology Experiment, Mao Liancheng, Self-edited Textbook

**Prerequisite**: Basic Circuit, Analog Electronics

**Pre-service Training of Communications Engineering (5 credits)**

**Course code**: b4012061

**Suitable majors**: Communications Engineering

**Instructor**: Zuo Jiancun

**Brief introduction:**

This course trains the necessary knowledge and skills for the typical Communications Engineering posts and makes preparations for the employment internship.

**On-service Internship of Communications Engineering (3 credits)**

**Course code**: b4012062

**Suitable majors**: Communications Engineering

**Instructor**: Zuo Jiancun

**Brief introduction:**

Based on the pre-service training, the course requires the students to join the execution of engineering projects of enterprises in the field of communications, improve their professional skills and accumulate working experiences with the combination of theory and practice.

**Graduation Internship and Graduation Design (Thesis) for the Major of Communications Engineering (12 credits)**

**Course code**: b4012063

**Suitable majors**: Communications Engineering is

**Brief introduction:**

Graduation Design is an important instructional session for the cultivation of students’ ability to analyze and solve practical problems with learned knowledge, an overall test of students’ comprehensive quality education effect and cultivation results of their engineering practical ability. The students are able to have elementary engineering practical ability of design through graduation design.

**Practice of Application and Development of Statistical Software (2 credits)**

**Course code**: b4012064

**Suitable majors**: Information and Computing Science

**Instructor**: Jiang Cunli, Zhou Hanping

**Brief introduction:**

The course aims to help the students get familiar with the basic operational methods of SPSS statistical software and learn to operate SPSS software to complete assigned data analysis tasks, so as to meet the needs of collection and mining of different kinds of data. Course contents: master the installation and operation of SPSS software, know the function of different menus, learn to use the help system, master the basic methods of SPSS data collection, and have the ability to manage and standardize the data collection with SPSS; master the basic SPSS data description function, understand and use different statistical graphs; master the methods of mean difference comparison and test and understand the concept of variance analysis and SPSS operation; understand related analysis theory and master the analysis of relativity between two variables; understand the regression analysis, cluster analysis, factor analysis and other senior statistical analysis methods; have certain practical ability to select accurate statistical methods in accordance with the statistical analysis requirements and independently complete the tasks with SPSS.

**Reference book:**

SPSS Data Statistics and Analysis, Luo Fang, Liu Hongyun, Huang Kun, Tsinghua University Press

**Prerequisite**: Application and Development of Statistical Software

**Network Safety Planning and Execution (3 credits)**

**Course code**: b4012065

**Suitable majors**: Network Engineering

**Instructor**: Hu Xiaoming

**Brief introduction:**

Course objective: master the planning and key technologies of computer network safety engineering, so as to qualify for the safety design, execution and management of general networks. Course contents: network safety need analysis, information safety risk evaluation, web penetration test, network safety strategy design, facility type selection, typical safety technology execution and others.

**Reference book:**

Planning and Execution of Network Safety, Yang Yingchun, Self-edited Textbook

**Prerequisite**: Network Safety

**Graduation Internship and Graduation Design (Thesis) for the Major of Network Engineering (12 credits)**

**Course code**: b4012066

**Suitable majors**: Network Engineering

**Instructor**: Wang Jian

**Brief introduction:**

Course objective: explore the students’ thoughts and broaden their vision, improve their working ability. Course contents: cultivate their ability to analyze and solve practical problems with learned knowledge, master the effective methods of literature search and documents search, learn the contents of computer network construction, web development, safety management and maintenance and network programming ability verification, receive written and oral expression training.

**Network Attack and Protection Practice (3 credits)**

**Course code**: b4012067

**Suitable majors**: Network Engineering

**Instructor**: Wu Xiumei

**Brief introduction:**

Course objective: master the technology and tools of network attack and protection, cultivate the core safety attack or protection skills.

Course contents: network attack and protection experimental environment, TCP/IP network protocol attack, firewall configuration, unwanted code safety attack or protection, web safety attack and protection technology and practice, web browser safety attack and protection and others.

**Reference book:**

System Protection, Network Safety and Hackers, Yu Zhaohui, China Railway Press

**Prerequisite**: Network Attack and Protection Technology, Network Safety

**Integrated Design of Network System (2 credits)**

**Course code**: b4012068

**Suitable majors**: Network Engineering

**Instructor**: Yao Chipu

**Brief introduction:**

Course objective: master the mainstream methods and technologies of network integration, data integration and application integration. Course contents: data integration (including methods and standards of data integration, data warehouse, heterogeneous data integration, data integration tool, metadata management and typical examples of data integration, application integration (including the concept and standard of application integration, mainstream technology of application integration of Microsoft application integration technology, OMG application integration technology, Java application integration technology and Agent based integration technology), and complete the comprehensive design of three layers of network, data and application with the knowledge of course of comprehensive cabling and routing switching.

**Reference book:**

Data Integration and Application Integration, Song Xiaoyu, China Water & Power Press

**Prerequisite**: Network Application Programming, Introduction to Database, Comprehensive Cabling Engineering, Routing and Switching Technology, Network Safety

**Network Application Programming (3 credits)**

**Course code**: b4012069

**Suitable majors**: Network Engineering

**Instructor**: He Xiaofeng

**Brief introduction:**

Course objective: create effective and interactive Web application with tools

Course content: basic knowledge and key technology of PHP, basic language, database technology and SQL language web backend development, database management technology of ajax, json, and MySQL and socket programming.

**Reference book:**

PHP and MySQL Web Development, Luke Welling, Laura Thomson, China Machines Press

**Prerequisite**: Computer Network and Communication, Operational System, Basic Network Programming

**Internship of Webpage Art Design (2 credits)**

**Course code**: b4012070

**Suitable majors**: Digital Media Technology

**Instructor**: Pang Yanxia

**Brief introduction:**

This course systematically introduces the basic knowledge and practical technology of HTML5 and CSS3, and analyzes webpage making skills through a large amount of examples.

**Reference book:**

Basic Instruction of HTML5 and CSS3, Posts & Telecom Press

**Prerequisite**: Digital Graphic Processing

**Internship of Webpage Design Technology (1 credit)**

**Course code**: b4012071

**Suitable majors**: Software Engineering

**Instructor**: Wen Wen

**Brief introduction:**

Help the students progressively master the webpage making skills with Dreamweaver and the basic knowledge of HTML language, design of text and graphs in the webpage, application of hyperlink, table and framework, CSS webpage style setting through the instruction of this practical course.

**Reference book:**

Instruction of Webpage Making and Development, Zhang Qiang, Posts & Telecom Press

**Prerequisite**: Introduction to Computer

**Course Design of Microprocessor Application (3 credits)**

**Course code**: b4012072

**Suitable majors**: Computer Science and Technology

**Instructor**: Hou Dongliang and Li Bin

**Brief introduction:**

This course is the auxiliary course design for the course of microprocessor theory and application, which introduces the design and development of microprocessor based application projects with learned theoretical knowledge.

**Practice of Signal Collection Technology (2 credits)**

**Course code**: b4012073

**Suitable majors**: Electronic Information Engineering

**Instructor**: Gong Yumei, Hu Jinyan, Ma Wenxin

**Brief introduction:**

Course objective: help the students master the basic theory of signal tuning, data collection and processing; master design and debugging of Labview virtual instrument based signal collection system.

Course contents: development process of Laview virtual device technology, collection, signal tuning, graphic controller and graphic showing of analog signals, the design and realization of LabVIEW virtual device collection system.

**Reference book:**

Practice of Signal Collection Technology, Gong Yumei, Hu Jinyan, Ma Wenxin, Self-edited Textbook

**Prerequisite**: Signal Collection Technology and Application

**Graduation Internship and Graduation Design (Thesis) for the Major of Information and Computing Science (12 credits)**

**Course code**: b4012074

**Suitable majors**: Information and Computing Science

**Instructor**: all the teachers of the instructional and research group

**Brief introduction:**

Graduation Design (Thesis) for the Major of Information and Computing Science is the last compulsory specialty course before graduation. This course emphasizes on the cultivation of students’ ability to solve practical problems. Through graduation design, it cultivate the students’ ability to analyze and solve practical problems with learned knowledge or technologies, which is also a pre-service practice and a necessary comprehensive training for the technical talents.

**Course Internship of Virtual Reality (3 credits)**

**Course code**: b4012075

**Suitable majors**: Digital Media Technology

**Instructor**: Wu Jiaqi

**Brief introduction:**

This course provides practical exercises of 3D virtual realization development, product demonstration design and architectural touring design based on the application of theoretical knowledge of virtual reality technology.

**Reference book:**

VT Game Creation, China Youth Press

**Prerequisite**: Virtual Reality

**Mobile Internet Front-end Development Technology (3 credits)**

**Course code**: b4012076

**Suitable majors**: Network Engineering

**Instructor**: Wu Xiumei

**Brief introduction:**

Course objective: systematically understand the necessary knowledge of Android application development and master certain development skills. Course contents: systematic features and structure of Android, construction of Android application development, UI design, data storage, SQLite database, mobile phone function development, multimedia development, 2D/3D game development, State and MVC framework and others.

**Reference book:**

Instruction of Android Programming, Bill Philips, Brian Hardy, Posts & Telecom Press

**Prerequisite**: Mobile Internet Technology

**Course Design of Mobile Terminal Programming (2 credits)**

**Course code**: b4012077

**Suitable majors**: Software Engineering, Information and Computing Science

**Instructor**: Zhang Shiming

**Brief introduction:**

Through the course design, the students are able to learn the development of application programs on android platforms from one certain project. The project requires covering a certain amount of knowledge and working load so as to meet the corresponding requirements.

**Prerequisite**: Basic Program Design, Mobile Terminal Software Development

**Printed Plate Design and Signal Completeness Analysis (2 credits)**

**Course code**: b4012078

**Suitable majors**: Electronic Information Engineering

**Instructor**: Ma Wenxin, Hu Jinyan, Yu Haihua

**Brief introduction:**

Course objective: help the students complete the design of circuit schematic diagram, double (single) sided printed plate with CAD software and understand the general design of multi-sided plate and related design rules or applications, know the signal completeness and have the simulation ability.

Course contents: design of circuit schematic diagram, construction of component database, design of printed circuit plate, making of encapsulation components, impedance matching, signal crosstalk and noise, eye diagrams and others.

**Reference book:**

Printed Plate Design and Signal Completeness Analysis, Ma Wenxin, Hu Jinyan, Yu Haihua, Self-edited Textbook

**Prerequisite**: Basic Circuit Analysis, Analog Electric Technology, Digital Electric Technology

**Course Design of Movie Animation (3 credits)**

**Course code**: b4012079

**Suitable majors**: Digital Media Technology

**Instructor**: Xia Tian, Zheng Lei

**Brief introduction:**

Course Design of Movie Animation is a practical course for the major of digital media art with 72 course hours in total and 24 hours of independent practical session. The course introduces the application of movie synthesis processing software After Effects and the design methods and realization technology of 3D software 3ds Max. Through the study of 72 course hours, the students are able to master the ability to apply digital media knowledge and complete a digital movie covering two aspects of design methods and knowledge.

**Reference book:**

Course Design of Movie Animation, Zheng Lei, Xia Tian, Self-edited Textbook

**Prerequisite**:

**Course Internship of Movie Making (3 credits)**

**Course code**: b4012080

**Suitable majors**: Digital Media Technology

**Instructor**: Xia Tian

Course Instruction:

Movie Course Making is a practical course for the major of digital media art with 72 course hours in total and 24 hours of independent practical session. The course introduces the application of movie synthesis processing software After Effects, the knowledge and methods of movie making process, movie synthesis and processing, related software Boujou and the excellent plug-in component Element 3D. Through the study of 72 course hours, the students are able to master the ability to process, synthesize the movie under moving shoots conditions with the basic knowledge of After Effects software.

**Reference book:**

Course Internship of Movie Making, Xia Tian, Self-edited Textbook

**Course Design of Game Development (3 credits)**

**Course code**: b4012081

**Suitable majors**: Digital Media Technology

**Instructor**: Pang Yanxia

**Brief introduction:**

This course introduces the related knowledge of Unity engine, the use of Unity editor, resource input process and the method of constructing a basic game scene with Unity engine; it also introduces the Shuriken particle system, Mecanim animation system, physical system, Lihtmapping baking technology, Navigation Mesh searching technology, Umbra occlusion elimination technology and screen rendering effect and others.

**Reference book:**

Unity 4.X From Elementary to Expert, Unity Shanghai, China Railway Press

Perquisite: Game Design and Development

**Design of Intelligent Robot (2 credits)**

**Course code**: b4012082

**Suitable majors**: Intelligent Science and Technology

**Instructor**: Cao Xiaoling, Yang Wenjing

**Brief introduction:**

Course objective: based on the courses of humanoid robot, voice recognition, computer visual sense and natural language processing, through course practice, master the intelligent humanoid robot based software design and realization. Course contents: robot software development platform (select from c, Java, Python), acquisition, fusion and storage of data including the graphs, audios, sensors of robot, basic controlling methods of robot through programming, including movement, audio, lights and others. Design and develop an intelligent application with the operational platform of humanoid robot with learned course knowledge.

**Reference book:**

Design of Intelligent Robot, Self-edited Textbook

**Intelligent Test Project Design (2 credits)**

**Course code**: b4012083

**Suitable majors**: Computer Science and Technology

**Instructor**: Hou Dongliang, Li Bin, Huang Lijia

**Brief introduction:**

The course is a practical course corresponding to the theoretical courses of intelligent test, embedded system, single chip machine technology and others. The course cultivates the students’ ability to learn knowledge and design projects of information acquisition and processing with computer technology and testing technology. The main purpose is to strengthen their understanding of the theoretical contents through practice, master the working theory and using methods of single chip machine and common sensors and improve their application ability, practical ability and the ability to solve problems independently.

**Graduation Internship and Graduation Design (Thesis) for the Major of Intelligent Science and Technology (12 credits)**

**Course code**: b4012084

**Suitable majors**: Intelligent Science and Technology

**Brief introduction:**

Course objective: based on the study of theoretical knowledge and technologies of intelligent science and technology, the students are able to design and develop data analysis application system. Course contents: the students are able to search and read related literatures independently, and realize functional moulds or system development with different data analysis methods in one or multiple languages.

**Basic Course Internship of Intelligent Mathematics and Application (2 credits)**

**Course code**: b4012085

**Suitable majors**: Intelligent Science and Technology

**Instructor**: Du Yi, Yang Wenjing

**Brief introduction:**

Course objective: based on the intelligent mathematical basis and practical course instruction, instruct the students to design and develop the statistical software module with python language and statistical software. Course contents: elementary to use of python language, data visualization, data distribution realization, accumulated distribution, serial distribution, hypothesis test, relativity.

**Reference book:**

Statistical Thoughts: Probability Statistics of Programmer’s Mathematics, Zhang Jianfeng, Chen Gangyi, Posts & Telecom Press

**Prerequisite**: Basic Intelligent Mathematics and Application

**Project Design of Intelligent Terminal Application System (2 credits)**

**Course code**: b4012086

**Suitable majors**: Computer Science and Technology

**Instructor**: Chen Ling, Shi Lingxiang

**Brief introduction:**

This course requires the students to master the application development technology of embedded system, so as to improve their quality and creative ability and lay a good basis for the graduation design and work in the future.

1. Master the ability of application program development on the Android platform;

2. Help the students master the basic development methods and skills through basic experiments, laying a good basis for the more complicated development;

3. Receive comprehensive experimental training based on the basic experiments.

**Internship of Desktop Application (2 credits)**

**Course code**: b4012087

**Suitable majors**: Software Engineering

**Instructor**: Cao Xiaoxia

**Brief introduction:**

The course helps the students strengthen the learned knowledge of desktop application design, cultivates their ability solve practical problems with learned knowledge and master the basic methods of engineering software design.

Through internship, the following abilities can be improved:

1. Strengthen the basic theoretical knowledge and basic skills of the course and improve their ability to analyze and solve problems;

2. Develop small-scale system with learned knowledge, master the methods of application program editing and debugging, have the ability to develop application system independently and process data.

3. Get familiar with the common technologies of modern program development, flexibly use system and class library program design provided by the third party.

4. Master the development and arrangement of project in integrated environment.

**Reference book:**

Instruction of C# Basis and Examples, Hao Chunqiang, China Water & Power Press

**Prerequisite**: Data Structure, Visualized Program Design, Introduction to Database System

*Specialty Course*

**College of Engineering**

School of Environmental and Materials Engineering

**IT Industry Environmental Friendly Function Material (2 credits)**

**Course code**: b2013001

**Suitable majors**: Materials Chemistry

**Instructor**: Xie Lili

**Brief introduction:**

This course is one of the specialty courses, introducing the environmental friendly function materials used in electric product processing and manufacturing technology. The course requires the students to understand and master the raw and auxiliary materials used for electric product green design and manufacturing, life cycle assessment of materials, lead-free solders, non-halogen flame-retardant additives, conductive plastic and other new materials and application technology, laying a basis for the processing of electric waste, technological research and development, design and manufacturing of green electric product in the future.

**Reference book:**

Environmental Material, Wen Rui, Tsinghua University Press

IT Industry Environmental Friendly Material, Xie Huaqing, Self-edited

**Semiconductor Material, Technology and Component (3 credits)**

**Course code**: b2013002

**Suitable majors**: Materials Chemistry

**Instructor**: Li Zhanhong

**Brief introduction:**

This course introduces the basic theory and technology of preparation of semiconductor silicon, gallium arsenide and control of features. The course contents are divided into 13 parts: 1st part is the chemical preparation of silicon and germanium; 2nd part is zone refining; 3rd part is crystal growth; 4th part is the impurity and defects of silicon and germanium crystal; 5th part is epitaxial growth of silicon; 6th part is III-V compound semiconductor; 7th part is the epitaxial growth of III-V compound semiconductor, 8th part is III-V compound semiconductor, 9th part is II-IV compound semiconductor, 10th part is low-dimensional-structure semiconductor, 11th part is oxidant semiconductor, 12th part is lighting semiconductor material, 13th part is other semiconductor materials.

**Reference book:**

Semiconductor Materials (3rd edition), Yang Shuren, Wang Zongchang, Wang Ke, Science Press

**Prerequisite**: Basic Material Science, Inorganic Chemistry

**Semiconductor Physics and Components (2 credits)**

**Course code**: b2013003

**Suitable majors**: Materials Science and Engineering

**Instructor**: Wu Zihuaf

**Brief introduction:**

This course introduces the basic knowledge of semiconductor physics and components. The course contents are divided into two parts of semiconductor physics and semiconductor components. The part of semiconductor physics includes the basic knowledge of semiconductor materials, carrier model, carrier Traffic and Transportation and others. The part of semiconductor component basis includes PN junction diode, bipolar transistor, MOS capacitance, field effect transistor and others. Meanwhile, the course introduces the working theory of solar energy battery and TFT components.

Through this course, the students are required to master the basic working theory of semiconductor component and analyze the influences of different physical conditions and working conditions on the electric features of components.

**Reference book:**

Semiconductor Physics and Component, US, Niemann, Publishing House of Electronics Industry

**Semiconductor Lighting Theory and Technology (2 credits)**

**Course code**: b2013004

**Suitable majors**: Materials Science and Engineering

**Instructor**: Wang Yuanyuan

**Brief introduction:**

This course is a specialty course for the major of material and engineering, which is an interdisciplinary course for the basic concept of solid physics, material preparation, basic structure and design of components. Course objective: understand the common lighting theory and preparation methods of semiconductor photoelectric materials, master the working theory, structure and application of semiconductor lighting component, understand the latest lighting materials and components, laying a basis for the analysis, research and design of semiconductor photoelectric components.

**Reference book:**

Semiconductor Lighting Technology, Fang Zhilie, Publishing House of Electronics Industry

**Thin-film Material and Preparation Technology (2 credits)**

**Course code**: b2013005

**Suitable majors**: Materials Chemistry, Materials Science and Engineering

**Instructor**: Zhu Zhigang, Li Jing

**Brief introduction:**

Thin-film Material and Preparation Technology is an important course for the major of new energy material and component. The course systematically introduces the basic theory and method of preparation of different thin-film materials, including evaporation coating, sputtering, ion plating, chemical vapor deposition, solution preparation technology of thin film. The course introduces the generation and growth of thin films, the composition, structure and film thickness of thin film and other typical thin film materials. Through this course, the students are required to understand the features of thin film material, master the theory and related technologies of thin film material prepared by physical or chemical methods, know the research frontiers in the field and lay a good basis for the work and scientific research in the future.

**Reference book:**

Thin-film Material and Thin-film Technology, Zheng Weitao, Chemical Industry Press

**Prerequisite**: Basic Material Science, Materials Chemistry, Material Structure and Performance

**Surface and Interface of Material (3 credits)**

**Course code**: b2013006

**Suitable majors**: Materials Chemistry

**Instructor**: Chen Lifei, Zhao Xueling

**Brief introduction:**

This course introduces the phenomenal features and theoretical basis of polymers and composite materials based on the physical chemistry and material physical chemistry and the different interface’s influences on performance of polymers. The problems of surface and interface are related to almost all the aspects of polymer modification, like polymer reinforcement, filled composite, polymer blending composite, bonding, coating and printing of polymers, surface modification of polymers. Through this course, the students are able to master the basic theory and practical methods of polymer modification technology. The practical instructional session is completed through experiments, so as to cultivate the students’ application ability and analysis ability.

**Reference book:**

Surface and Interface of Material, Hu Fuzeng, Chen Guorong, Du Yongjuan, East China University of Science and Engineering Press

**Prerequisite**: Physical Chemistry

**Material Analysis and Test (3 credits)**

**Course code**: b2013007

**Suitable majors**: Materials Chemistry

**Instructor**: Bing Naici, Wu Yihua

**Brief introduction:**

Material Analysis and Test is a specialty course for the major of Materials Chemistry. Through study, the students are able to get familiar with the material analysis test methods, understand the basic structure and working theory of analysis devices, master the application of analysis devices in material analysis research, so as to cultivate their ability of research and service in the field of material science with analysis test methods.

**Reference book:**

Material Analysis and Test Methods, Huang Xinmin, Xie Ting, Defense Industry Press

**Prerequisite**: Introduction to Material Science, Material Physics and Chemistry

**Material Analysis and Testing Technology (2 credits)**

**Course code**: b2013008

**Suitable majors**: Materials Science and Engineering

**Instructor**: Zhu Xiangrong

**Brief introduction:**

Material Analysis and Test has an important significance to the understanding and mastering of material structure and basic properties, which is also an important basic course for the major of Materials Science and Engineering. The course introduces the main methods and technologies of modern material analysis and test characterization, requires the students to master basic material analysis test technologies, and lays a basis for the study of following courses and scientific research in the field of material. The course contents include X ray diffraction analysis, material electric microscopic analysis (transmission electric microscope analysis and scanning electric microscope), [infrared absorption spectrum](http://www.baidu.com/link?url=VRTmVDQKGndfaslG3gV3DJ3iaTqcrYO0iEcSz9D2pXgt50kTcSsopMIGfZHTneSy3ONhApkVFrYX1FoXLet-Xz9aDWPZIyPzNX3uOrZdO4FcK0sH6T905nnVHZGYdRWr-wWsH6STZN8DGbiV4BpfXq) analysis, thermo analysis, energy spectrum analysis and material optical performance test analysis and other analysis methods, theory, instrument and applications.

**Reference book:**

Modern Analysis Technology of Materials, Zhu Heguo, Defense Industry Press

**Prerequisite**: Basic Material Science, Material Physics

**Basic Material Engineering (2 credits)**

**Course code**: b2013009

**Suitable majors**: Materials Science and Engineering

**Instructor**: Zhu Xiangrong

**Brief introduction:**

This course is one of the important basic specialty courses for the major of Materials Science and Engineering, with the objective to help the students master and understand the related basic knowledge of material engineering, including mental material, inorganic non-metallic materials and composite’s engineering preparation and processing. The main contents include common mental materials and its preparation, processing and forming of mental materials, thermo processing of mental, inorganic non-metallic material preparation and its processing craftsmanship, composite material and its preparation, material surface engineering and other knowledge.

**Reference book:**

Basic Material Engineering, Yang Mingbo, Chemical Industry Press

**Prerequisite**: Basic Material Science

**Materials Chemistry (3 credits)**

**Course code**: b2013010

**Suitable majors**: Materials Chemistry, Materials Science and Engineering

**Instructor**: Wu Yihua, Li Yang

**Brief introduction:**

Materials Chemistry is a discipline researching on the synthesis, structure, property and application of materials. The course introduces the research field and development history of Materials Chemistry, synthesis of materials, test of structural performance, chemical property and application. The feature of the course is to help the students master the synthesis, structural performance and application of materials.

**Reference book:**

Materials Chemistry, Zeng Zhaohua, Yang Jianwen, Chemical Industry Press

**Prerequisite**: College Chemistry, Physical Chemistry

**Materials Chemistry English (2 credits)**

**Course code**: b2013011

**Suitable majors**: Materials Chemistry

**Instructor**: Zhu Zhigang

**Brief introduction:**

This course improves the students’ understanding of the terms, translation ability of the professional articles and writing ability of thesis. The course contents include the atom structure of materials, physical chemistry of materials, mechanic performance of materials, performance of pottery materials, relationship between craftsmanship and microstructure.

**Reference book:**

Materials Science and Engineering English, Kuang Shaoping, Chemical Industry Press

**Material Processing Technology (2 credits)**

**Course code**: b2013012

**Suitable majors**: Materials Chemistry

**Instructor**: Yu Wei

**Brief introduction:**

The course introduces the processing technology of metal material, pottery material, polymer material and composite material.

**Reference book:**

Material Technology, Li Shuchen, Chemical Industry Press

**Prerequisite**: Four Major Chemistry, Materials Chemistry, Basic Material Science and other.

**Material Structure and Performance (3 credits)**

**Course code**: b2013013

**Suitable majors**: Materials Science and Engineering

**Instructor**: Wang Yuanyuan

**Brief introduction:**

The course introduces the relationship between the structural and performance of materials, including the crystal structure of materials, defects of crystal structure, structure and performance of steel material, structure and performance of light alloy, the structure and performance of magnetic material, [amorphous alloy](http://www.baidu.com/link?url=8JDHul7cEuJn8YS1aQjxVyO9NknjL9B1H3Lq_UKP5VttJgsn3xYpUZAt9LaRXI6AZMdOND5VAvnp66sXSsdpQzTPrRur4GxoVhck3rihX8ldcbYwJze7L08stA4fVyDh), structural pottery materials and superconducting materials. The course emphasizes on the relationship between different materials’ structures and material performances, so that the students can understand the research and development of materials from the perspective of material structure design.

**Reference book:**

Material Structure and Performance, Huang Weigang, Xue Dongfeng, East China University of Science and Engineering Press

**Prerequisite**: College Physics

**Introduction to Material Science (Bilingual) (2 credits)**

**Course code**: b2013014

**Suitable majors**: Materials Chemistry

**Instructor**: Chen Cheng

**Brief introduction:**

Materials are probably more deep-seated in our culture than most of us realize. Traffic and Transportation, housing, clothing, communication, recreation, and food production—virtually every segment of our everyday lives is influenced to one degree or another by materials. Historically, the development and advancement of societies have been intimately tied to the members’ ability to produce and manipulate materials to fill their needs. In fact, early civilizations have been designated by the level of their materials development (Stone Age, Bronze Age, Iron Age).The development of many technologies that make our existence so comfort-able has been intimately associated with the accessibility of suitable materials. Advancement in the understanding of a material type is often the forerunner to the stepwise progression of a technology. For example, automobiles would not have been possible without the availability of inexpensive steel or some other comparable substitute. In our contemporary era, sophisticated electronic devices rely on components that are made from what are called semiconducting materials.1. The first objective is to present the subject matter in a logical order, from the simple to the more complex. Each chapter builds on the content of previous ones. 2. We strive to maintain throughout the text is that if a topic or concept is worth treating, then it is worth treating in sufficient detail and to the extent that students have the opportunity to fully understand it without having to consult other sources.

**Reference book:**

Materials Science and Engineering Basis, Callisto, Chemical Industry Press

**Basic Material Science (3 credits)**

**Course code**: b2013015

**Suitable majors**: Materials Chemistry, Materials Science and Engineering

**Instructor**: Wu Yihua, Xu Haiping

**Brief introduction:**

This course is the most important basic course for the major of materials. Taking the mental material, pottery material, polymers and composite as the research object, from the perspective of electron and atom of materials, the course introduces the theory of thermodynamics and dynamics, nano-scale and micro-scale structure, meso-scale breaking system and macro performance. The course contents include the atomic arrangement of materials, crystal and non-crystal freezing, plastic deformation and toughening, composite and interface and solid phase transformation, new development of material science theory and new achievements of high-performance material research. The course objective is to introduce the relationship between composition, microstructure, preparation craftsmanship and performances of materials, laying a solid basis for the processing of material performance test and material processing.

**Reference book:**

Basic Material Science, Liu Zhien, Northwest Polytechnical University Press

**Materials Science and Engineering English (2 credits)**

**Course code**: b2013016

**Suitable majors**: Materials Science and Engineering

**Instructor**: Zhang Da

**Brief introduction:**

The textbook is divided into 7 parts and 23 units; and each unit is composed with one instructional article and one reading material. Reading material provides the corresponding background knowledge or expanding contents. Meanwhile, the textbook provides corresponding exercises, notes and vocabulary in accordance with the contents of the textbook or reading materials.

**Reference book:**

Materials Science and Engineering English, Kuang Shaoping, Chemical Industry Press

**Material Physics (2 credits)**

**Course code**: b2013017

**Suitable majors**: Materials Chemistry

**Instructor**: Wang Lijun

**Brief introduction:**

This course introduces the basic theoretical key points of physics part of material science, not only including the physical performance and its micro-system of material, including the dynamics, thermos, electricity, magnetism, lightness, sounding of the material and the functional transformation of materials, but also introducing the progression of multiple topics of modern materials, reflecting the related latest scientific and research achievement and covering the basic material physics of energy. The special topics of the course can be taken as the after-class reading materials or the group discussing groups. The objective is to cultivate their innovative ability, the ability to solve material problems from the perspective of theoretical research of physics, considering the limited course hours and deep expansion of after-class reading based on the relationship between energy and materials.

**Reference book:**

Material Physics, Zhang De, Chemical Industry Press

**Prerequisite**: College Physics, Introduction to Materials Science and Engineering

**Material Physics (3 credits)**

**Course code**: b2013018

**Suitable majors**: Materials Science and Engineering

**Instructor**: Xu Haiping

**Brief introduction:**

This course introduces the basic theoretical key points of physics part of material science, not only including the physical performance and its micro-system of material, including the dynamics, thermos, electricity, magnetism, lightness, sounding of the material and the functional transformation of materials, but also introducing the progression of multiple topics of modern materials, reflecting the related latest scientific and research achievement and covering the basic material physics of energy. The special topics of the course can be taken as the after-class reading materials or the group discussing groups. The objective is to cultivate their innovative ability, the ability to solve material problems from the perspective of theoretical research of physics, considering the limited course hours and deep expansion of after-class reading based on the relationship between energy and materials.

**Reference book:**

Material Physics, Zhang De, Chemical Industry Press

**Prerequisite**: College Physics, Introduction to Materials Science and Engineering

**Supercapacitor Material and Technology (2 credits)**

**Course code**: b2013019

**Suitable majors**: Materials Science and Engineering

**Instructor**: Zhang Da

**Brief introduction:**

It is a new energy storage component between capacitor and battery, with the features of long life cycle and large current charging and discharging, which is the hot research area in the field of new energy with a wide market. The course is divided into 14 chapters. 1st-3rd chapter introduces the basic knowledge of electric chemistry, brief introduction to super-capacitor and electric-chemical characterization technology; 4th-6th chapter introduces the double layer capacitor, electrode materials and double layer electric chemical theory, and pseudocapacitor and its electrode materials; 7th and 8th chapter introduces the mixed capacitor and asymmetric capacitor in watering medium and organic medium; 9th chapter introduces the ionic liquid type super-capacitor; 10th-13th chapter introduces the industrialization manufacturing, model, test and reliability analysis of super-capacitor; 14th chapter introduces the application of super-capacitor. Different chapters are independent relatively and related to each other.

This textbook is the reference book for researchers and technical persons of super-capacity, instructors and graduates of the majors of new energy material and components, chemical electrical power.

**Reference book:**

Super-capacitor: Material, System and Application, (France) Francois, translated by Zhang Zhi’an, Material Industry Press

**Energy-storage Material and Technology (2 credits)**

**Course code**: b2013020

**Suitable majors**: Materials Science and Engineering

**Instructor**: Wu Zihua

**Brief introduction:**

Energy Transformation and Storage Technology is a new energy-saving technology, which receives more and more attentions from home and abroad. This course systematically introduces the basic theory of energy storage, thermo dynamics basis, performance requirements, matching method and thermo-physical test of storage materials, theory and technical features of electrical power, mechanic power, thermo power, chemical power and dydrate energy storage technology, emphasizing on the mature technologies of ice-storage air conditioning technology, electric power energy storage technology, regenerative heating technology, gas hydrate storage technology and chemical energy storage technology and their applications.

**Reference book:** Sensor and Sensing Technology, He Daoqing, Science Press

**Air Pollution Control Engineering (3 credits)**

**Course code**: b2013022

**Suitable majors**: Environmental Protection Equipment Engineering, Environmental Engineering

**Instructor**: Chen Shengwen, Fan Li

**Brief introduction:**

Air Pollution Control Engineering is a compulsory specialty course for the major of environmental engineering. This course mainly discusses the basic theory of air pollution control, basic theory of different control methods, structural features of typical controlling facility and typical technological facility. Through this course, the students are systematically required to understand the basic knowledge of air pollution control engineering, basic theory of air pollution meteorology, basic concept, theory, main facility and typical technology of air pollution protection, have the basic ability to analyze and solve air pollution control engineering problems, laying a necessary basis for the work in the field of air pollution control engineering and technical management after graduation.

**Reference book:**

Air Pollution Control Engineering, Hao Jiming, Higher Education Press

**Energy Storage Technology of Electric Vehicle (2 credits)**

**Course code**: b2013023

**Suitable majors**: Materials Science and Engineering

**Instructor**: Wu Zihua

**Brief introduction:**

This course introduces the technology, development and application of energy storage devices proposed or used for the electric vehicles, like chemical storage battery, double layer capacitor, flywheel battery and others.

**Reference book:**

Introduction to New Energy Vehicles, Cui Shengmin, Peking University Press

**Electrical Engineering and Electronic Technology (2 credits)**

**Course code**: b2013024

**Suitable majors**: Materials Chemistry, Materials Science and Engineering

**Instructor**:

**Brief introduction:**

This course introduces the basic knowledge of circuit, Kirchhoff, superposition and Thevenin circuit theorem, AC, semiconductor, basic computing of single-pipe and operational amplifier, basic concepts of digital electric technology.

**Reference book:**

Introduction to Electrical Engineering, Qing Cenghuang, Higher Education Press

**Electrical Engineering and Electronic Technology (3 credits)**

**Course code**: b2013025

**Suitable majors**: Environmental Protection Equipment Engineering, Environmental Engineering

**Instructor**:

**Brief introduction:**

This course introduces the basic knowledge of circuit, Kirchhoff, superposition and Thevenin circuit theorem, AC, semiconductor, basic computing of single-pipe and operational amplifier, basic concepts of digital electric technology.

**Reference book:**

Introduction to Electrical Engineering, Qing Cenghuang, Higher Education Press

**Toxic Substance and Protection of Electric Products (2 credits)**

**Course code**: b2013026

**Suitable majors**: Environmental Engineering

**Instructor**: Guo Yaoguang

**Brief introduction:**

This course is one of the specialty courses. The course requires the students to master the environmental pollution problem in production process and electric products of the electrical industry and the basic knowledge of wasted toxic substances so as to improve their safety sense and reduce environmental pollution, laying a solid basis for the learning of specialty courses and better solution of practical working problems in the future.

This course requires the students to understand and master the basic theoretical knowledge of toxic substances and its test in electric products and electric industry, for the effective recycling of environmental design and electrical waste.

**Reference book:**

Test and Protection of Toxic Substances of Electric Industry, Gao Guilan, Xie Huaqing, Chemical Industry Press

**Quality Test and Standards of Electric Product (2 credits)**

**Course code**: b2013027

**Suitable majors**: Materials Chemistry

**Instructor**: Wang Lingling

**Brief introduction:**

Based on the learned environmental knowledge, this course requires the students to master the basic knowledge of toxic substances wasted or generated in the process of electric industrial production and electric product use to improve their safety sense and reduce environmental pollution, laying a solid basis for the study of environmental engineering courses and work in the future.

**Reference book:**

Test and Protection of Toxic Substances in Electric Industry, Gao Guilan, Xie Huaqing, Chemical Industry Press

**Prerequisite**: Analysis Chemistry

**Electric Waste Management and Recycling Technology (2 credits)**

**Course code**: b2013028

**Suitable majors**: Environmental Protection Equipment Engineering, Environmental Engineering

**Instructor**: Guan Jie, Su Ruijing, Xu Min

**Brief introduction:**

This course is a core specialty course, introducing the electric waste management laws and recycling technology. The course requires the students understand the electric waste management laws and technological policy, master the recycling technology of common electric waste, laying a solid basis for the work in the future.

**Reference book:**

Electric Waste Processing Technology, Li Jinhui, China Environmental Technology Press

**Electric Chemicals (2 credits)**

**Course code**: b2013029

**Suitable majors**: Materials Chemistry

**Instructor**: Chen Cheng

**Brief introduction:**

Electric chemicals, which is also called as electric chemical materials, refers to the special chemicals and chemical materials for the electric industry, including electric component, printing circuit board, all kinds of chemicals or materials for the industrial and consumption whole machine production. Electric chemicals are special chemicals, which belong to the fine chemical industry from the perspective of productive technological property, or belong to the electric materials industry from the perspective of products use. Electric chemical is the product of new and high technologies of electric materials and fine chemicals. The course contents include all kinds of fine chemical materials used for the components or whole machine manufacturing and assembly of integrated circuit and discrete devices, capacitor, battery, resistance, photoelectric component, printing circuit board, LED monitoring component, kinescope, TV, computer, recorder, video-recorder, CD player, mobile communication devices, and fax machine.

**Reference book:**

Electric Chemicals, Gu Min, China

**Analysis Chemistry (2 credits)**

**Course code**: b2013030

**Suitable majors**: Environmental Engineering

**Instructor**: Li Xiuli

**Brief introduction:**

Analysis Chemistry is a discipline researching on the composition, structure and other information of materials, which is also an important compulsory basic specialty course. Through this course, the students are required to master the basic theory, knowledge and analysis methods of analysis chemistry, and understand the concept of “quantity” accurately. During the learning process, the course strengthens the training of experimental skills and cultivation of ability to analyze and solve problems, laying a solid basis for the better learning of specialty courses of environmental engineering courses and solution of practical problems in the future.

**Reference book:**

Analysis Chemistry (6th edition), Research and Instructional Group of Analysis Chemistry of East China University of Science and Technology, Higher Education Press

**Analysis Chemistry (3 credits)**

**Course code**: b2013031

**Suitable majors**: Materials Chemistry

**Instructor**: Bing Rengci

**Brief introduction:**

Analysis Chemistry is a discipline researching on the composition, structure and other information of materials, which is also an important compulsory basic specialty course. Through this course, the students are required to master the basic theory, knowledge and analysis methods of analysis chemistry, and understand the concept of “quantity” accurately. During the learning process, the course strengthens the training of experimental skills and cultivation of ability to analyze and solve problems, laying a solid basis for the better learning of specialty courses of environmental engineering courses and solution of practical problems in the future.

**Reference book:**

Analysis Chemistry (6th edition), Research and Instructional Group of Analysis Chemistry of East China University of Science and Technology, Higher Education Press

**Prerequisite**: Inorganic Chemistry

**Packaging Materials and Components (2 credits)**

**Course code**: b2013032

**Suitable majors**: Materials Chemistry

**Instructor**: Zhu Luping

**Brief introduction:**

From the perspective of materials used for packaging, this course detailedly introduces all kinds of materials for the packaging of microelectric components, including polymers, pottery materials, mental welding material, sealing materials and adhesion agent, the packaging manufacturing technology of semiconductor chips and integrated circuit components, and the basic theory of electric and thermal dynamical design for the microelectric component packaging. The course involves two aspects of statistic and dynamic contents, which is the category, property and functions of electric packaging materials, the design and controlling of electric packaging technologies. Through this course, the students are required to master the basic theory and technology of electric packaging, laying a good basis for the design, processing and application of green electric materials.

**Reference book:**

Packaging of Microelectric Components—Packaging Materials and Technology, Zhou Liangzhi, Chemical Industry Press

**Prerequisite**: Physical Chemistry, Polymer Materials

**Composite Material (2 credits)**

**Course code**: b2013033

**Suitable majors**: Materials Chemistry

**Instructor**: Wang Jingrong

**Brief introduction:**

Composite Materials is an important discipline in the field of Materials Chemistry, introducing the basic concept and compositing theory of composite materials, material system composition, preparation technology, performance and application of composite materials of different matrix (including polymer matrix, mental matrix, pottery matrix, concrete matrix and others). Meanwhile, the course also introduces the design, preparation and composite technology of composite materials. Through this course, the students are required to understand the features, preparation methods and application fields of different composite materials and master the basic knowledge and related technologies of composite materials.

**Reference book:**

Composite Materials, Chongqing University Press

**Polymer Materials (3 credits)**

**Course code**: b2013034

**Suitable majors**: Materials Science and Engineering

**Instructor**: Li Jing

**Brief introduction:**

Polymer Materials is an important basic specialty course for the major of Materials Science and Engineering. The course requires the students to master the concept and preparation methods of polymer materials, relationship between the structure of and performances, get familiar with the category, structure and performance of polymer materials, functional polymer materials, polymer blends and polymer composite materials, so as to choose materials, design products, select processing methods and determine the forming technological conditions accurately. The course broadens the students’ vision and lays a solid basis for the research and development of new materials.

**Reference book:**

Polymer Materials Basis, Zhang Liucheng, Qu Xiongwei, Ding Huili, Chemical Industry Press

**Prerequisite**: Basic Material Science, Materials Chemistry

**Polymer Chemistry and Physics (3 credits)**

**Course code**: b2013035

**Suitable majors**: Materials Chemistry

**Instructor**: Bin Rengci

**Brief introduction:**

This course is one of the important basic specialty courses for the major of Materials Chemistry. The course is divided into two parts: polymer chemistry and polymer physics. The polymer chemistry part introduces the basic concept of polymer, the basic theory of polymer chemical compound synthesis, the methods of controlling polymer’s reaction rate and molecular weight, the features of chemical reaction of polymers and the selection of polymerization methods, the relationship between the polymer’s structure and performances of dynamics, electrics, thermology, solution and aging from the perspective of polymer physics. Through the study of the course, the students are required to master the basic concept, blending theory, polymerization methods, structure, property, the relationship between structure and performance of polymer materials, laying a theoretical basis for the learning and work in the field of polymer materials.

**Reference book:**

Basic Polymer Chemistry and Physics, Wei Wuji, Yu Qiang, Cui Yihua, Chemical Industry Press

**Prerequisite**: Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Introduction to Material Science

**Engineering Mechanics (2 credits)**

**Course code**: b2013036

**Suitable majors**: Environmental Protection Equipment Engineering

**Instructor**: Bao Jun, Li Jian, Wang Qingsheng, Jiang Xin

**Brief introduction:**

This course provides static analysis of simple structure, the most basic dynamical theory and computing methods of intensity, stiffness and stableness of components.

**Reference book:**

Engineering Mechanics (Statics and Material Mechanics), Fang Qingshan, Tang Jingjing, Higher Education Press

**Prerequisite**: Advanced Mathematics

**Tolerance Fit and Technical Measurement (2 credits)  
Course code**: b2013037

**Suitable majors**: Environmental Protection Equipment Engineering

**Instructor**: Guan Jie, Zhou Mingyuan

**Brief introduction:**

This course combines the tolerance fit and metrology together and researches on how to solve the contradictions between using requirements and manufacturing requirements focusing on the two concepts of error and tolerance from the perspective of interchangeability, so as to determine the tolerance fit reasonably and select accurate technical measurement methods.

**Solid Waste Processing and Disposal (2 credits)**

**Course code**: b2013038

**Suitable majors**: Environmental Protection Equipment Engineering, Environmental Engineering

**Instructor:** Su Ruijing, Guan Chuanjing

**Brief introduction:**

This course is a compulsory specialty course with the objective to help the students require the methods, theory and recycling technologies of solid waste processing and disposal, master the basic concepts, theory, main facility and typical technologies of solid waste processing and disposal, have the basic ability to analyze and solve more and more serious solid waste pollution problems, laying a basis for the employment in the field of solid waste processing and disposal engineering design and technical management in the future. The course contents include: the general property of solid waste, the collection, storage and clearance of solid waste, preprocessing of solid waste, physicochemical treatment of solid waste, biological treatment of solid waste, thermal processing of solid waste, recycling and comprehensive application of solid waste, landfill disposal of solid waste, management of dangerous waste and radiant solid waste and others.

**Reference book:**

Processing and Disposal of Solid Waste, Ning Ping, Higher Education Press

**Photoelectric Materials and Components (2 credits)**

**Course code**: b2013039

**Suitable majors**: Materials Chemistry, Materials Science and Engineering

**Instructor**: Chen Cheng, Zhu Xiangrong

**Brief introduction:**

This course is one of the specialty explorative courses for the major of new energy material and component, helping the students understand the related basic knowledge of modern photoelectric materials and components. The course systematically and comprehensively introduces the related materials and typical components of semiconductor lighting, solid lasers, optical fibers, non-linear optics, optic modulation, optic detection and lightshow. Besides, the course introduces the latest research achievements in related fields in recent years, including the new micro/nano photoelectric materials and components of photonic crystal, metamaterials, and surface plasma.

**Reference book:**

Photoelectric Materials and Components, Hou Honglu, Defense Industry Press

**Prerequisite**: Semiconductor Physics and Components, Semiconductor Material, Technology and Components

**Photovoltaic Power Generation Technology and Application (3 credits)**

**Course code**: b2013040

**Suitable majors**: Materials Science and Engineering

**Instructor**: Li Wenqing

**Brief introduction:**

Solar photovoltaic industry has become one of the highlights of new energy industry. Based on the overall introduction of basic knowledge of photovoltaic power generation, the course detailedly introduces the production technology and performance test of solar photovoltaic battery and battery components, the composition, design, installation and maintenance of solar photovoltaic technology, and emphasizes on the strengthening of professional ability, technical application and management ability. Through this course, the students are required to master the basic knowledge of photovoltaic power generation system of new energy, related technology of photovoltaic system applications.

**Reference book:**

Solar Photovoltaic Power Generation and Application Technology, Zhao Shu’an, Southeast University Press

**Prerequisite**:

Energy Storage Material and Technology, Solar Energy Battery Material, Solar Energy Power Generation Technology and Systematical Design, New Energy Power Generation Technology, Secondary Project (Solar Energy Power Generation System)

**Chemical Power (3 credits)**

**Course code**: b2013041

**Suitable majors**: Materials Science and Engineering

**Instructor**: Li Jing

**Brief introduction:**

Chemical Power is one of the important courses for the major of new energy material and component. Based on the introduction of basic theory of electric chemistry and basic concept of chemical power, the course systematically introduces different kinds of chemical powers, like the theory, structure, manufacturing technology of Zn-MnO\_2 battery, lead acid battery, Ni-Cd battery, nickel-metal hydride battery, zinc-silver oxide battery, lithium battery, lithium-ion battery, fuel battery and related knowledge of electric chemical capacitor based on the basic theory of electric chemistry. Through this course, the students are required to understand the theory, composition, material, assembly and application of chemical power, know the advantages and disadvantages, research and development future of all kinds of chemical power, laying a solid basis for the research and development in the field of chemical power after graduation.

**Reference book:**

Chemical Power, Cheng Xinqun, Chemical Industry Press

**Prerequisite**: Applied Electric Chemistry, Physical Chemistry

**Chemical Power Design (2 credits)**

**Course code**: b2013042

**Suitable majors**: Materials Science and Engineering

**Instructor**: Zhang Da

**Brief introduction:**

This textbook is the first book which systematically introduces the optimization design of chemical power. With the purpose of instruct and serve for the manufacturing, the author introduces the related theory, design principles and general computing methods of chemical power design by summarizing related research achievements of battery industry and many years’ experiences in cooperating with factories. Meanwhile, taking common battery as examples, the author gives a detailed explanation on the design methods, the shelling material of chemical power, selection principles of separator material and cleaner production. The textbook has an important instructional significance for the practical production.

The book can also be read and referred by technical persons and researchers of research institutes and enterprises and teachers or students of universities.

**Reference book:**

Chemical Power Design, Wang Lizhen and others, Chemical Industry Press

**Prerequisite**: Chemical Power

**Environmental Protection Machinery Design (2 credits)**

**Course code**: b2013043

**Suitable majors**: Environmental Protection Equipment Engineering

**Instructor**: Zhou Mingyuan

**Brief introduction:**

Environmental protection Machinery Design is a basic specialty course for the cultivation of students’ machinery design, which is the compulsory course for the major of mechanic-related majors. Course objective: 1. Master the working theory, features, maintenance and design computation of general mechanic components and have the ability to design mechanical driving facility and simple machinery; 2. Have the ability to apply standards, rules, manuals, graphs and other technical documents; 3. Master the experimental methods of typical machinery components.

**Reference book:**

Machinery Design, Tan Qingchang, Higher Education Press

**Prerequisite**: College Physics, Engineering Drawings and Computer Graphics, Machinery Engineering Material, Mechanical Theory

**Environmental Protection Equipment Engineering English (2 credits)**

**Course code**: b2013045

**Suitable majors**: Environmental Protection Equipment Engineering

**Instructor**: Fan Li

**Brief introduction:**

This course is a compulsory course for the undergraduates majored in Environmental Protection Equipment Engineering after the completion of common English courses. The course objective is to cultivate the students’ ability to read and translate environment-related English. The course contents include word-formation and grammar features, the classification of environmental problems, air pollution and controlling, water pollution and waste water processing, solid waste and its disposal, solid waste and its disposal, and chemical naming.

**Reference book:**

Environmental Science and Engineering English, Zhong Li, Chemical Industry Press

**Basic Environmental Protection Equipment (2 credits)**

**Course code**: b2013046

**Suitable majors**: Environmental Engineering

**Instructor**: Gao Guilan

**Brief introduction:**

Course objective: master the operational methods of different analysis devices and have the data processing ability through practice.

**Design Theory of Environmental Protection Equipment (3 credits)**

**Course code**: b2013047

**Suitable majors**: Environmental Protection Equipment Engineering

**Instructor**: Yuan Hao

**Brief introduction:**

The course aims to help the students understand the key role of environmental protection devices in the steps of scientific research, design, operation, management in the field of environmental protection, so as to improve the students’ adaptability into the development of environmental protection industry. The students are required to have the macro concept of environmental protection technology and devices, master the theory, design, operation and management of environmental protection facility including waste water processing, air pollution protection, solid waste processing and disposal, noise protection and others. The students are also required to have some understanding of the advanced environmental protection technology and devices at home and abroad, and know the common technology or devices suitable for China and its development trend.

**Reference book:**

Environmental Protection Equipment—Theory, Design and Application, Liu Hong, Chemical Industry Press

**Prerequisite**: Environmental Engineering Theory, Solid Waste Processing and Disposal, Air Pollution Control, Water Pollution Controlling Engineering

**Environment, Health and Safety (2 credits)**

**Course code**: b2013048

**Suitable majors**: Environmental Protection Equipment Engineering, Environmental Engineering

**Instructor**: Li Xiuli, Fan Li

**Brief introduction:**

This course is a selective specialty course for the environmental engineering, introducing the environmental hot problems of environmental toxicology, pollutant risk assessment, recycling ecological treatment technology, chemical environmental toxicity screening, environmental safety emergency disposal and test. Besides that, the course also introduces the laws, technologies, management and other contents related to occupational safety and health, and environment safety system.

**Reference book:**

Environmental Safety and Health, Liu Zhengtao, Chemical Industry Press

**Environmental Material (2 credits)**

**Course code**: b2013049

**Suitable majors**: Materials Chemsitry

**Instructor**: Xie Lili, Wu Yihua

**Brief introduction:**

The course contents are divided into environmental material theory, environmental material key technology, environmental engineering material and environmental protection material, including the influential factors of materials to environments,

**Reference book:**

Environmental Material (2nd edition), Wen Rui, Ran Rui, Wang Lei, Tsinghua University Press

**Environmental Analysis Chemistry (2 credits)**

**Course code**: b2013050

**Suitable majors**: Environmental Protection Equipment Engineering

**Instructor**:

**Brief introduction:**

Environmental Analysis Chemistry is a discipline researching on the composition, structure and other related information of environmental materials, which is also an important compulsory basic specialty course for the major. Through this course, the students are required to master the basic theory, knowledge and analysis methods of environmental analysis chemistry, and understand the concept of “quantity” accurately. During the learning process, the course strengthens the training of experimental skills and cultivation of ability to analyze and solve problems, laying a solid basis for the better learning of specialty courses of environmental engineering courses and solution of practical problems in the future.

**Environmental Water Supply and Drainage (2 credits)**

**Course code**: b2013051

**Suitable majors**: Environmental Protection Equipment Engineering, Environmental Engineering

**Instructor**: Zhu Xuefeng, Guo Yaoguang

**Brief introduction:**

This course is divided into 24 chapters and 5 parts. The 1st part is the summary part, including the composition and arrangement of water supply system, the design of water consumption computation; 2nd part is the water transmission and distribution engineering, including the arrangement of pipelines and water supply pipelines; computation of pipe flow, pipe diameter, head loss, pipe network hydraulic computation, pipe network technological economic computation, energy analysis and design of separate water supply system; 3rd part is the water intake engineering (11th-13th chapters), including the water resource and water supply resource, underground water intake structures, surface water intake structures. 4th part is water supply processing, including the water quality and theory of reactor, coagulation, precipitation, clarification, filtering, disinfection, removal of Fe and Mg from underground water, removal of F from water, the removal of micro-pollutants from water with the active carbon adsorption, surface water factory design, water softening, salt removal from water and seawater desalination; 5th part is the cooling of water and the circulated cooling water process, including the cooling theory and structure of water.

Reference book:

Water Supply Engineering, Yan Xushi, Fan Jingchu, China Architectural Industry Press

**Environmental Engineering CAD (2 credits)**

**Course code**: b2013052

**Suitable majors**: Environmental Protection Equipment Engineering

**Instructor**: Zhang Li

**Brief introduction:**

Environmental Engineering CAD stresses the comprehensive application of different skills and instructions, and design exercises for common instructions in each chapter. The course introduces the drawing methods and steps of different environmental engineering drawings, so as to help the students have an overall understanding of the engineering drawing.

**Reference book:**

Environmental Engineering CAD, Li Yin, Zhao Guohua, China Machine Press

**Prerequisite**: Introduction to Environmental Engineering

**Environmental Engineering CAD (3 credits)**

**Course code**: b2013053

**Suitable majors**: Environmental Engineering

**Instructor**: Zhang Li

**Brief introduction:**

Environmental Engineering CAD stresses the comprehensive application of different skills and instructions, and design exercises for common instructions in each chapter. The course introduces the drawing methods and steps of different environmental engineering drawings, so as to help the students have an overall understanding of the engineering drawing.

**Reference book:**

Environmental Engineering CAD, Li Yin, Zhao Guohua, China Machine Press

**Prerequisite**: Introduction to Environmental Engineering

**Environmental Engineering Material (2 credits)**

**Course code**: b2013054

**Suitable majors**: Environmental Protection Equipment Engineering, Environmental Engineering

**Instructor**: Guan Jie

**Brief introduction:**

This course requires the students to master the operational methods and data processing ability of different analysis devices.

**Environmental Engineering Technological Economics (2 credits)**

**Course code**: b2013055

**Suitable majors**: Environmental Protection Equipment Engineering, Environmental Engineering

**Instructor**: Zhou Yuan, Wang Jingrong

**Brief introduction:**

This is a specialty course for the major of Environmental Protection Equipment Engineering, which researches the best configuration of resources in technical field and seeks the best combination of technology and economy for the continuous development of the discipline. The course requires the students to systematically master the theoretical system of technological economics, including the brief introduction, strategic analysis methods and forecasting technology, capital time value and equal value computation, project investment estimation and financing plan analysis, financial benefit and expense estimation, financial analysis, economic expenses benefit analysis, project risk and uncertainty analysis, other related evaluation of construction projects.

**Reference book:**

Technological Economics, Wu Weihong, Chemical Industry and Mechanical Press

**Environmental Engineering Construction Technology (2 credits)**

**Course code**: b2013056

**Suitable majors**: Environmental Protection Equipment Engineering, Environmental Engineering

**Instructor**: Guan Jie, Gao Guilan

**Brief introduction:**

This course helps the students have an overall understanding of the engineering material, constructional methods, constructional installation procedures and technical requirements, quality standards, constructional organization and constructional management, and master the function of environmental engineering constructional technology and organizational management.

**Environmental Engineering Microbiology (2 credits)**

**Course code**: b2013057

**Suitable majors**: Environmental Protection Equipment Engineering, Environmental Engineering

**Instructor**: Dai Yu

**Brief introduction:**

Environmental Engineering Microbiology introduces the morphological features of microorganism, and the relationship between biological function and environments, including the main category of microorganism in the environment, the growth metabolism and genetic variation, growth and reproduction, living conditions and other information of microorganism, the ecology of microorganism, the ecological engineering and microorganism theory of water environmental pollution control and protection, microorganism treatment and microbial community of organic solid waste and waste gas, the application of microbiology technology in environmental engineering. The course objective is to help the students understand related basic knowledge of microbiology, research related environmental phenomenon problems. Through this course, the students are able to systematically understand the basic theory of microbiology, master the status of microorganism and its relationship with environment and the function of microorganism in the process of material transformation so as to serve for the environmental protection with the help of microorganism.

**Reference book:**

Environmental Engineering Microbiology, Zhou Qunying, Higher Education Press

**Environmental Engineering Theory (3 credits)**

**Course code**: b2013058

**Suitable majors**: Environmental Protection Equipment Engineering, Environmental Engineering

**Instructor**: Xie Hongyong, Sun Zhiguo

**Brief introduction:**

Environmental Engineering Theory is the basic specialty course for the major of environmental engineering, environmental science, water supply and drainage engineering, which introduces the common phenomenon and basic theory of water processing engineering, air pollution control engineering, solid waste processing and disposal engineering and other environmental protection and ecological remediation engineering. The course contents include basic environmental engineering theory, separation process theory and reaction engineering theory. The part of environmental engineering theory introduces law of material and energy conservation, transmission process and others. The separation process theory part introduces the basic theory of precipitation, filtration, absorption and adherence. The reaction engineering theory part introduces chemical and biological reaction metrology, dynamics and the process analysis of different reactors.

**Reference book:**

Environmental Engineering Theory (2nd edition), Hu Hongying, Higher Education Press

**Prerequisite**: Advanced Mathematics, College Physics, Inorganic Chemistry, Organic Chemistry

**Environmental Engineering English (2 credits)**

**Course code**: b2013059

**Suitable majors**: Environmental Engineering

**Instructor**: Xu Min

**Brief introduction:**

This course is a compulsory course for the undergraduates majored in environmental engineering after the completion of common English courses. The course objective is to improve the students’ mastering of environmental English vocabulary, reading comprehension ability and translation ability.

**Reference book:**

Environmental Science and Engineering English, Zhong Li, Chemical Industry Press

**Prerequisite**: College English

**Environmental Planning and Management (2 credits)**

**Course code**: b2013060

**Suitable majors**: Environmental Protection Equipment Engineering, Environmental Engineering

**Instructor**: Guan Jie

**Brief introduction:**

This course is to improve the students’ ability to operate different analysis devices and data processing ability.

**Environmental Chemistry (2 credits)**

**Course code**: b2013061

**Suitable majors**: Environmental Engineering

**Instructor**: Ma Changwen

**Brief introduction:**

Environmental Chemistry is the core part of environmental science, which is an interdisciplinary course with the research object of environmental problems due to the chemical material’s emergence in environment and with the objective to solve environmental problems. The course

**Reference book:**

Environmental Chemistry, Dai Shugui, Higher Education Press

**Prerequisite**: Inorganic Chemistry, Organic Chemistry, Analysis Chemistry

**Basic Environmental Chemistry (2 credits)**

**Course code**: b2013062

**Suitable majors**: Environmental Protection Equipment Engineering

**Instructor**: Dai Yu

**Brief introduction:**

Basic Environmental Chemistry is a basic specialty course for the major of environmental protection equipment engineering, which is also an important branch of the chemistry discipline. Through this course, the students are able to systematically understand the basic chemical knowledge and know how to treat some social problems like environment, energy, life and others from the perspective of chemistry, broaden their vision, and improve their scientific quality. The course stresses the introduction of migration transformation rules of chemical materials in environments (gas, water, earth and organism), so as to help the students learn the methods and theory of environmental protection.

**Reference book:**

Environmental Chemistry, Dai Shugui, Higher Education Press

**Environmental Monitoring (2 credits)**

**Course code**: b2013063

**Suitable majors**: Environmental Protection Equipment Engineering, Environmental Engineering

**Instructor**: Gao Guilan, Fan Li

**Brief introduction:**

Environmental Monitoring is a discipline researching on the monitoring and testing of all kinds of environmental factors (environmental pollutants) representing the environmental pollution and environmental quality with the modern scientific technology, so as to evaluate the environmental quality and the operational process of its development trends scientifically. The course objective is to introduce and practice the basic theory and technology of environmental monitoring, so that the students can make and execute the environmental monitoring plans and complete monitoring technological work wth the learned theory and technology, laying a solid basis for the learning of specialty courses of environmental engineering majors and better solution of practical problems.

**Reference book:**

Environmental Monitoring, Liu Qi, Pan Weibin, East China University of Science and Technology Press

**Prerequisite**: Analysis Chemistry, Device Analysis

**Environmental Fluid Mechanics (2 credits)**

**Course code**: b2013064

**Suitable majors**: Environmental Protection Equipment Engineering, Environmental Engineering

**Instructor**: Jiang Xin, Wang Qingsheng

**Brief introduction:**

Through this course, the students are able to get necessary basic knowledge of fluid balance, movement rules, energy conservation and transformation rules, get some basic theory, knowledge and elementary computation ability of heat transferring, have the ability of problem analysis and innovative ability, laying a necessary basis for the learning of following courses, engineering technical works and scientific research in the future.

**Reference book:**

Basic Pyrology and Hydrodynamics, China Water Press

**Prerequisite**: Advanced Mathematics, Theoretical Mechanics, Material Mechanics

**Environmental Influences Evaluation (2 credits)**

**Course code**: b2013065

**Suitable majors**: Environmental Protection Equipment Engineering, Environmental Engineering

**Instructor**: Zhou Yuan

**Brief introduction:**

This course systematically introduces the basic concept, theory and technical methods of environmental planning and environmental management with the objective of continuous and harmonious development of society, economy and environments. The part of environmental planning introduces the basic theory and technical methods of environmental planning, gas environmental pollution protection planning, water environmental pollution protection planning, solid waste pollution protection planning, noise pollution protection planning, ecological environmental planning, district environmental planning, environmental planning decision supportive system and others. The part of environmental management introduces the theory of environmental management, object, contents and methods of environmental management, technical guarantee of environmental management, district environmental management, natural resources protection and management, global environmental problems and management, environmental management of foreign countries, ISO14000 system and others.

**Reference book:**

21st Century High Education Planning Textbook for the Major of Environmental Engineering: Environmental Planning and Management, Ding Zhonghao, Mechanical Industry Press

**Mechanic Theory (2 credits)**

**Course code**: b2013066

**Suitable majors**: Environmental Protection Equipment Engineering

**Instructor**: Zhou Mingyuan

**Brief introduction:**

This course is a core basic technical course for the mechanic majors, which is also a main course researching on the basic mechanic theory and common problems. The course objective is to help the students master the basic theory, knowledge and technology of mechanism and mechanic dynamics and have the ability to make mechanic movement plans, analyze and design mechanism. During the overall system for the cultivation of senior Mechanical Engineering technical talents, this course not only lays a good basis for the study of related technical courses, but also improves their adaptability and ability of innovation and development for the mechanic design and research work in the future.

**Reference book:**

Mechanic Theory, Qing Rongrong, Higher Education Press

**Prerequisite**: College Physics, Engineering Drawing and Computer Drawing, Mechanical Engineering Material, Engineering Mechanics

**Mechanic Drawing (2 credits)**

**Course code**: b2013067

**Suitable majors**: Materials Chemistry, Materials Science and Engineering

**Instructor**: Wu Xiaorong

**Brief introduction:**

It s a discipline researching on the drawing and reading of engineering drawings with graphic method and diagrammatic presentation in accordance with rules and knowledge of engineering technology.

This course is an important basic technological course with the combination of theory and practice, with the objective to cultivate their ability of drawing and graph reading and special imagination. The main tasks of this course are as follows:

1. learn the basic theory and application of projection method (orthographic drawing)
2. cultivate the students’ graphic expression ability of spatial form;
3. cultivate the students’ basic ability to draw and read engineering drawing (mechanic drawing);
4. cultivate the students’ ability of spatial imagination and thinking;
5. cultivate the students’ application ability of computer drawing.

**Reference book:**

Basic Mechanic Drawing, Liu Yongtian, Cui Li, Beihang University Press

**Introduction to Computational Material Science (2 credits)**

**Course code**: b2013068

**Suitable majors**: Materials Science and Engineering

**Instructor**: Wang Yuanyuan

**Brief introduction:**

Computational Material Science is an interdiscipline of material science and computer science, which develops rapidly. It is also a discipline researching on the computer analog and design of material composition, structure, performance and service performance, involving many disciplines of material science, physics, computer science, mathematics, chemistry and others. This course introduces the main contents of computational material science, helping the students master the main methods of computational material science and laying a basis for the research and analysis of physical and chemical properties of different kinds of materials.

**Reference book:**

Computational Material Science, Jian Zengyun, Liu Cuixia, Lv Zhigang, Chemical Industry Press

**Constructional Energy-saving Material (2 credits)**

**Course code**: b2013069

**Suitable majors**: Materials Science and Engineering

**Instructor**: Zhang Da

**Brief introduction:**

This book systematically introduces building envelop system including the energy saving technology and materials of constructional walls, doors and windows roof and floors, GSHP technology, solar energy application technology and air-conditioning energy saving technology related to constructional energy saving. Besides that, the book also detailedly describes the theor and preparation of phase change energy saving and energy storage materials and its application in constructional energy saving and explains the related technology of constructional energy saving alteration, test and evaluation technology. The book is to provide basic knowledge, keys of design and construction for different constructional energy saving system for constructional designers, engineering technical persons and related manufacturers, and be taken as a textbook or reference book for the students majored in civil engineering to explore their knowledge of constructional energy saving.

**Reference book:**

Constructional Energy Saving Technology and Materials, Zhang Xiong, Chemical Industry Press

**Constructional Energy-saving Technology (2 credits)**

**Course code**: b2013070

**Suitable majors**: Materials Science and Engineering

**Instructor**: Wang Jinmin

**Brief introduction:**

This course introduces the basic theory and knowledge of constructional energy saving, new facility and technology of heating system by air conditioning, especially the new development in system operational management and energy saving technology based on the development and application of constructional energy saving technology. In accordance with the management rules and related regulations of constructional energy saving, the course is beneficial to the cultivation of students’ engineering application ability and their vision broadening by practical engineering examples with specialty features. The course objective is to help the students systematically master the basic knowledge of constructional energy saving, understand the analysis computing methods of thermal features of civil building envelope structure, know the working theory and facility selection basis of common facility of constructional energy saving, and have the design construction and operational management ability of civil building heating and cooling system.

**Reference book:**

Constructional Energy-saving Technology, Li Deying, China Machine Press

**Prerequisite**: Basic Material Science

**Lithium-ion Battery Theory and Technology (2 credits)**

**Course code**: b2013071

**Suitable majors**: Materials Science and Engineering

**Instructor**: Li Yang

**Brief introduction:**

As the new energy material, the lithium-ion battery is developing rapidly, with significance to the development of different industries related to energy. The course emphasizes on the introduction of structure, composition and features of lithium-ion battery, its working theory and feature, its production technology and test.

**Reference book:**

Lithium-ion Battery Theory and Key Technology, Huang Kelong, Wang Zhaoxiang, Liu Suqing, Chemical Industry Press

**Nano-material Technology (2 credits)**

**Course code**: b2013072

**Suitable majors**: Materials Chemistry, Materials Science and Engineering

**Instructor**: Wu Zihua, Yang Dandan

**Brief introduction:**

Nano-material is a new discipline starting from 1980s, researching on the property and application of 1-100nm atoms, molecule and materials of other property, involving contents of many disciplines of material science, physics, chemistry, electrics, biology, medicine and others. Based on the latest development of nano material research in the world, the course detailedly explains the basic theory, preparation, characterization and application of nano-material, helping the students understand the special property and application of nano-material in mechanics, magnetism, electrics, thermology and optics. The course is beneficial to the vision broadening, cultivation of innovative thoughts and ability and improvement of interest on scientific research and production work, laying a good basis for the learning and adaption in the future.

**Reference book:**

Introduction to Nano-material, East China University of Science and Technology Press

**Component Design and Preparation (2 credits)**

**Course code**: b2013073

**Suitable majors**: Materials Science and Engineering

**Instructor**: Zhu Xiangrong

**Brief introduction:**

This course requires the students to master the theory, structure and design plans of new energy components, and the basic technological process and methods of component preparation, based on the prior learning of basic knowledge of new energy material and component. The course contents include the design and preparation technological process of silicon-based photovoltaic component, NiMH battery component and energy storage component.

**Reference book:**

Self-edited Textbook

**Prerequisite**: Semi-conductor Physics and Component, Photovoltaic Power Generation Technology and Application, Solar Energy Battery Material

**Fuel Cell Theory and Technology (2 credits)**

**Course code**: b2013074

**Suitable majors**: Materials Science and Engineering

**Instructor**: Zhang Da

**Brief introduction:**

This course introduces the basic theory, key material and technology, performance features and application future of proton exchange membrane fuel cell, solid oxide fuel cell, [molten carbonate fuel cell](https://www.baidu.com/link?url=3rImebOyuSOqz3YjqC0-4GzN72DyyAq7YxE-b0An3OzdePKuztDFajpW6H1CwuFXjTfQ6TzIZiD61aX_HeNHAYH77d8a9BlKkl_8PyDqbQDqKdTAekXavBr9ppAEAkBRCoSTGZm3wY6HbQYcq-rtq_&wd=&eqid=8ddea1d800154c2c00000003578ab661), and the research achievements and development trends of the key materials of the above fuel cells (like electro-catalyst, proton exchange membrane, membrane electrode, polar plate and others).

The textbook can be taken as the reference book for the learning of related fuel cell theorys or knowledge for students not majored in fuel cell or the technical persons in fuel cell industry.

**Reference book:**

Fuel Cell—Theory, Key Material and Technology, Zhang Junliang and others, Shanghai Jiaotong University Press

**Water Pollution Controlling Engineering (3 credits)**

**Course code**: b2013075

**Suitable majors**: Environmental Protection Equipment Engineering, Environmental Engineering

**Instructor**: Ma Changwen, Liang Bo, Zhu Xuefeng

**Brief introduction:**

This course is a compulsory specialty course for the major of environmental engineering, which introduces the basic theory and technology of waste water processing like the physical, chemical and biological processing of polluted water, and explains on the processing and disposal of mud and technological design of small-scale polluted water processing factory. Through this course, the students are able to understand the basic information of water pollution and the pricinple or methods of water pollution protection, master the application scope and conditions of different protection methods.

**Reference book:**

Water Pollution Controlling Engineering, Peng Dangcong, Metallurgical Industry Press

**Solar Energy Fuel Material (2 credits)**

**Course code**: b2013076

**Suitable majors**: Materials Science and Engineering

**Instructor**: Li Wenqing

**Brief introduction:**

Based on the learning of basic knowledge and working theory of solar energy battery, this course systematically introduces the working theory and application of mainstream solar energy batteries like silicon-based solar energy battery, GaAs solar energy battery, CaTe thin film solar energy battery, CuInTi (CuInAsTi) solar energy battery, organic solar energy battery,  dye-sensitized solear energy battery and others, the property and preparation methods of key materials of different solear energy battery technology. Through this course, the students are required to master the basic physical knowledge of solar energy power generation technology, the key points and application range of all kinds of solar energy battery.

**Reference book:**

Solar Energy Battery Material and Application, Li Wei, Electric Technological University Press

**Prerequisite**: Photovoltaic Power Generation Technology and Application, Solar Energy Power Generation Technology and System Design, New Functional Material Design and Preparation, Technical Training of Basic Manufacturing of Battery Engineering, Secondary Project (Solar Energy Power Generation System)

**Solar Energy Power Generation Technology and System Design (2 credits)**

**Course code**: b2013077

**Suitable majors**: Materials Science and Engineering

**Instructor**: Zhu Xiangrong

**Brief introduction:**

Based on the prior learning of basic knowledge of photovoltaic battery and system, with the design examples of photovoltaic system, the students are required to master the theory, structure and design application of solar energy photovoltaic system. The course contents include the working theory, performance parameters and selection of different parts of solar energy photovoltaic power generation system, emphasizing on the volume design, configuration, type selection, installation, testing, operational maintenance and error removal of solar energy photovoltaic system and the application examples of photovoltaic power generation system design and photovoltaic power generation new technology.

**Reference book:**

Design Construction and Application of Solar Energy Photovoltaic Power Generation System, Li Zhongshi, Posts & Telecom Press

**Prerequisite**: Photovoltaic Power Generation Technology and Application, Solar Energy Battery Material

**Literature Search (1 credit)**

**Course code**: b2013078

**Suitable majors**: Materials Science and Engineering

**Instructor**: Wang Yuanyuan

**Brief introduction:**

This course helps the students understand the brief information of literature, master the basic theory and methods of information search, methods and skills of computer search, and have the ability to acquire useful information from a large amount of literature information rapidly correctly and comprehensively with the application of modern information technology and devices. Through the introduction of all kinds of traditional and internet literature resources, the students are encouraged to apply the literature resources into study and improve their ability of acquisition and application of literature information through case analysis and practical operations.

**Inorganic Semi-conductor Material (2 credits)**

**Course code**: b2013079

**Suitable majors**: Materials Science and Engineering

**Instructor**: Wang Jinmin

**Brief introduction:**

This course mainly introduces the basic theory, technology and feature control of inorganic semiconductor materials used in integrated circuit industry. The course contents include the chemical preparation of silicon and germanium, zone refining, crystal growth, impurity and defects of silicon and Ge crystal, III-V compound semiconductor and its epitaxial growth, II-IV compound semiconductor, oxidant semiconductor. The course requires the students to master the knowledge of related materials used in microelectric industry and have certain material analysis and design ability.

**Reference book:**

Semiconductor Material, Yang Shuren, Science Press

**Physical Chemistry (3 credits)**

**Course code**: b2013080

**Suitable majors**: Materials Chemistry

**Instructor**: Zhu Luping, Wang Lingling

**Brief introduction:**

Physical Chemistry is the basis of chemistry, which researches the most basic laws and theories of chemistry with physical methods or theories and the theoretical problems applied in all branches of chemistry. First law of thermodynamics—energy conversation law can be used for the computation of emitted or absorbed energy during the chemical reaction in special conditions; Second law of thermodynamics—the judgment of the process direction and limit, can be used for the judgment of direction and limit of chemical reaction and the computation of ultimate conversational rate of the reaction; chemical dynamics—a science researching on the chemical reaction rate, shows the speed of chemical reaction and researches on the factors affecting the reaction speed, helping to make productions or acquire energy with chemical reaction economically and reasonably.

**Reference book:**

Physical Chemistry, Wang Guangxin, Chemical Industry Press

**Prerequisite**: Inorganic Chemistry, College Physics

**Physical Chemistry (4 credits)**

**Course code**: b2013081

**Suitable majors**: Materials Science and Engineering

**Instructor**: Wang Jifen

**Brief introduction:**

Physical Chemistry is an important basic course for the major of chemistry, which is also a science researching on the basic rules of chemical changes from the perspective of relationship between the physical and chemical phenomenon of materials. The course requires the students to make theoretical and quantitative discussions on chemical movements with related theory and methods of physics, and understand the basic theory and methods of chemical movements. On one hand, the course strengthens the students’ understanding of the learned contents; on the other hand, the students can systematically understand the basic knowledge, theory and skills of physical chemistry through the course.

**Reference book:**

Physical Chemistry, Gao Piying, Li Jiangbo, Xu Wenyuan, Xiong Zhenhai, Science Press

**Prerequisite**: College Chemistry

**Physical Pollution Control (2 credits)**

**Course code**: b2013082

**Suitable majors**: Environmental Protection Equipment Engineering, Environmental Engineering

**Instructor**: Chen Shengwen, Fan Li

**Brief introduction:**

The course introduces the basic concept and theory of environmental noise pollution control, environmental vibration pollution control, environmental radiant pollution control, environmental electromagnetic radiance pollution control, environmental thermal pollution control, and environmental optical pollution control; it explains on the physical pollution’s harm and influences on the health and environment; emphasizes on the controlling and protective measures of different kinds of physical pollution and the latest scientific and research development on the application of physical pollution, so as to provide a theoretical basis for the improvement of environmental quality and creation of environmental protection, resource-saving and harmonious society.

**Reference book:**

Physical Pollution Control, Chen Jierong, Higher Education Press

**Prerequisite**: College Physics

**Advanced Environmental Protection Technology (2 credits)**

**Course code**: b2013083

**Suitable majors**: Environmental Protection Equipment Engineering, Environmental Engineering

**Instructor**: Guan Jie, Guo Yaoguang

**Brief introduction:**

This course introduces the advanced oxidation technology and its new research development, new technology for the scale production of hydroxyl radicals with the gas electric discharging method, construction of strong ionized discharging electric field, the hydroxyl radical oxidative desulphurization technology in plasma reactor, the methods of removing S02 and Nox from hydroxyl radicals and generating acid in flue pipe, technology of killing alien marine species with hydroxyl radicals, the ozone technology and its basic theory, the basic theory and development trend of electric dust wiper, the experimental research on the fine dust charged agglomerator and coarsening.

**Reference book:**

Advanced Oxidated Technology and its Application in the Protection of Environmental Pollution, Bai Minyao and others, Chemical Industry Press

**Prerequisite**: Environmental Chemistry Basis, Water Pollution Controlling Engineering, Air Pollution Controlling Engineering

**Science of Modern Environmental Law (2 credits)**

**Course code**: b2013084

**Suitable majors**: Environmental Engineering

**Instructor**: Gao Guilan

**Brief introduction:**

Science of Environmental Law is the core part of “Science of Environmental and Resources Protection Law”, not only involving traditional law disciplines of constitution, civil law, administrative law, criminal law, procedure law, international law and others, but also involving environmental science, environmental economics, environmental ethics, environmental Management and other disciplines of natural science and social science.

**Frontiers and Development of New Technology (1 credit)**

**Course code**: b2013085

**Suitable majors**: Materials Chemistry

**Instructor**: Yu Wei

**Brief introduction:**

Since 1990s, the material science and technology has experienced a rapid development. Material science, life science, information science and environmental science compose the frontiers of modern scientific technology. The course mainly introduces the latest research development in the field of material.

**Reference book:**

New Materials in Frontiers: Series Book of Frontier Science and Technology, Li Quanling, Southeast University Press

**Introduction to New Energy Material (2 credits)**

**Course code**: b2013086

**Suitable majors**: Materials Chemistry

**Instructor**: Wang Lingling

**Brief introduction:**

This course introduces the basis and application of new energy materials, including the basic information and application of new energy storage material, lithium ion battery material, fuel battery material, solar energy battery material and other new energy material.

Introduction to New Energy Material introduces the comprehensive and frontier knowledge in the field of new energy materials. The basic theoretical part describes the related information of new energy material, beneficial to the development of new energy discipline and research on the new energy technology and engineering. Through this course, the students are required to broaden their vision, cultivate their practical and innovative ability and become the qualified innovative talents for the development of new energy science and technology.

**Reference book:**

New Energy Material: Basis and Application, Ai Desheng, Gao Zhe, Chemical Industry Press

**New Energy Power Generation Technology (2 credits)**

**Course code**: b2013087

**Suitable majors**: Materials Science and Engineering

**Instructor**: Li Wenqing

**Brief introduction:**

This course introduces the development and application of commonly used new energy power generation technologies, including the solar energy photovoltaic power generation technology, solar energy thermal power generation technology, wind power generation technology, nuclear power generation technology, clear coal power generation technology, biomass energy power generation technology, geothermal power generation technology, ocean power generation technology, fuel cell power generation technology and others. Through this course, the students are required to master the basic knowledge of new energy, including the basic structure and working theory, commonly used manufacturing technology, components of different system, current status and development future of technology and others.

**Reference book:**

New Energy Power Generation Technology, Yu Guoqiang, China Electric Power Press

**Prerequisite**: Photovoltaic Power Generation Technology and Application, Chemical Electric Source, Theory and Technology of Lithium Ion Battery, Theory and Technology of Fuel Battery, Solar Energy Battery Material, Solar Energy Power Generation Technology and Systematic Design, Secondary Project (Chemical Battery System), Secondary Project (Solar Energy Power Generation System)

**Design and Preparation of New Functional Material (2 credits)**

**Course code**: b2013088

**Suitable majors**: Materials Science and Engineering

**Instructor**: Li Wenqing

**Brief introduction:**

This course systematically introduces the design methods and preparation theory of new functional materials, including the material with electric, chemical or biological function and functional composite material and separating function material and explains the development trend of functional materials in the future from the perspective of material science. Through this course, the students are required to master the basic theory and preparation methods of functional materials, deal with different problems in the process of preparation and use of functional materials and improve their ability to analyze and solve problems.

**Reference book:**

Introduction to New Functional Materials, Wang Jiquan, Guo Weihong, Li Qiuying, East China University of Science and Technology Press

**Prerequisite**: Material Engineering Basis, Super Capacitor Material and Technology, Energy Storage Material and Technology, Polymers, Constructional Energy Saving Material, Solar Energy Battery Material, Inorganic Semiconductor Material

**Recycling Economy and Clear Production (2 credits)**

**Course code**: b2013089

**Suitable majors**: Environmental Protection Equipment Engineering, Environmental Engineering

**Instructor**: Liang Bo, Zhang Chenglong

**Brief introduction:**

This is a compulsory specialty course for the major of environmental engineering, which mainly discusses the development and basic theory of recycling economy and clear production, involving the biological city construction, biological zone construction, clear production audit and other contents, so as to cultivate the students’ thoughts of recycling and clear and lay a necessary basis for the analysis and solution of environmental problems, scientific research and technology management.

**Reference book:**

Introduction to Clear Production, Zhang Tianzhu, Higher Education Press

**Instrumental Analysis (2 credits)**

**Course code**: b2013090

**Suitable majors**: Environmental Engineering

**Instructor**: Zhang Li

**Brief introduction:**

The course introduces the theory and use of different analyzing instruments and the basic knowledge or skills for the scientific research or other works in the field of environmental engineering.

**Reference book:**

Modern Instrumental Analysis, Jin Huiyu, Ha’erbin Industrial University Press

**Prerequisite**: Analysis Chemistry

**Applied Electric Chemistry (2 credits)**

**Course code**: b2013091

**Suitable majors**: Materials Science and Engineering

**Instructor**: Li Jing

**Brief introduction:**

Modern electric chemistry relates to material science and composes many research frontier hot points and a new disciplinary growth point—applied electric chemistry. This course introduces the basic theory of electric chemistry related to materials, different electric chemical preparation technology of nano materials, electric chemical performance of nano materials and the important research direction or hot points of material electric chemistry. Besides that, the course combines theory with practice, emphasizes on the application of basic theory of electric chemistry in material science and especially in chemical electric power, reflecting the comprehensiveness, edginess and foresight of electric chemistry in material science. Through this course, the students are required to understand the relationship between material structure and chemical power performance and master the new development of electric chemical preparation materials.

**Reference book:**

Applied Electric Chemistry, Xiao Youjun, Li Liqing, Chemical Industry Press

**Prerequisite**: College Chemistry

**Applied Electric Chemistry (3 credits)**

**Course code**: b2013092

**Suitable majors**: Materials Chemistry

**Instructor**: Li Jinhong

**Brief introduction:**

This course introduces the rules in the conversation process of electric power and chemical power. The course contents are divided into 8 parts: basic theory of electric chemistry, electro-catalysis process, chemical electric source, surface finishing of mental, electrolysis industry of inorganic material, electrolytic synthesis of organic material, electric chemical sensor, electric chemical corrosion and protection.

**Reference book:**

Applied Electric Chemistry, Yang Hui, Lu Wenqing, Science Press

**Prerequisite**: Physical Chemistry

**Organic Chemistry (3 credits)**

**Course code**: b2013093

**Suitable majors**: Materials Chemistry, Environmental Engineering

**Brief introduction:**

Organic chemistry is a basic specialty course for the major of environmental engineering. Based on the study of inorganic chemistry, the course introduces the composition, structure, property, synthesis, application and theory of the organic composite, helping the students master the basic theory, knowledge, basic reaction and experimental operational skills of organic chemistry, and laying a basis for the study of following courses.

Through this course, the students are required to:

1. Mater the naming of different composites.
2. Get familiar with the physical property of different organic materials
3. Master the relationship between the structure and performance of organic materials and know the property of common intermediate.
4. Master the chemical property of different organic materials.
5. Mater the mechanism of different typical reactions and typical name reaction
6. Master the speculation of simple composite’s structure in accordance with the typical composite property and related light spectrum property.
7. Get familiar with the applied forcast of different organic materials in the field of organic chemistry.

**Intelligent Materials (2 credits)**

**Course code**: b2013094

**Suitable majors**: Materials Chemistry

**Instructor**: Yang Dandan

**Brief introduction:**

Intelligent material is a new interdiscipline in the field of new material, which is called as an important advanced material in 21st century. It requires the material to have certain functions of some organism, like sensing, judgment, processing, execution, even to self-warning, self-remediation and stimulus-response and others. The course contents include the introduction to intelligent materials, applied theory, mechanical property, constitutive model and application of basic components of intelligent materials (shape memory alloy, Piezoelectric Composites, electromagnetic rheological body, intelligent fiber materials, intelligent polymers, and other sensing components), the intelligent features and application of intelligent concrete, the application of intelligent materials in structural controlling field, intelligent rubber and intelligent elastic body, requiring the students to master the basic knowledge, technology and related application of intelligent material.

**Reference book:**

Intelligent Material, China Machine Press

**Introduction to Specialty C (1 credit)**

**Course code**: b2013095

**Suitable majors**: Materials Chemistry, Materials Science and Engineering, Environmental Protection Equipment Engineering, Environmental Engineering

**Instructor**: Wang Lijun, Zhu Zhigang, Guan Jie

**Brief introduction:**

This course gives a brief introduction to the specialty, strengthens the students’ understanding of the specialty and helps the students master the basic information about the knowledge learning, ability cultivation, employment field, specialty construction and market needs and determine the research field and direction.

**Reference book:**

Introduction to Specialty (self-edited), Wang Lijun, Zhu Zhigang, Guan Jie, Self-edited textbook.

**Material Chemical Experiment (1 credit)**

**Course code**: b4013001

**Suitable majors**: Materials Chemistry

**Brief introduction:**

This course is an important specialty experimental course for the major of Materials Chemistry (green electric material). The course objective is to help the students understand the knowledge, research methods and experimental skills of Materials Chemistry, improve their experimental ability of applying the knowledge of applied chemistry and Materials Chemistry, and lay a solid experimental basis. Through the practice, the students are able to master the synthesis, separation and compositions of materials, learn the hydrothermal methods, solid phase method and sol-gel method synthesis of materials, understand the SRD judgment of synthetic materials and characters of other instrument, and get familiar with the method of modification method and performances of materials.

**Reference book:**

Instruction of Materials Chemistry Experiment, Xie Lili, Wu Yihua, self-edited

**Prerequisite**: College Chemical Experiment, Organic Chemical Experiment

**Graduation Internship and Graduation Design (Thesis) of Materials Chemistry (12 credits)**

**Course code**: b4013002

**Suitable majors:** Materials Chemistry

**Instructor**: Zhu Zhigang

**Brief introduction:**

This course strengthens, expands and systematizes the learned basic theory and specialty knowledge. Course objective: cultivate the students’ practical and innovative ability; cultivate their ability to analyze and solve practical problems of scientific research and engineering independently with basic theory and specialty knowledge; cultivate their correct scientific research thoughts, design thoughts, and rigorous attitudes and good working style; cultivate their ability of investigation and research, literature search and reading, plan design and argumentation, use of experimental instrument, analysis and processing of experimental data, translation and the skillful application of computer. Through this course, the students are required to have correct design thoughts and views in accordance with the production reality and rigorous, responsible, practical, hard-working, explorative, innovative, cooperative work style, and improve their scientific writing skills.

**Graduation Internship and Graduation Design (Thesis) for the Major of Materials Science and Engineering** (12 credits)

**Course code**: b4013003

**Suitable majors**: Materials Science and Engineering

**Instructor**: Li Yang

**Brief introduction:**

This is a comprehensive training course for the cultivation of students’ self-study ability, comprehensive application ability and independent working ability. The course objective is to improve the students’ ability to raise, analyze and solve practical problems with learned basic theory and specialty knowledge so as to improve their academic level and comprehensive quality. Graduation internship and graduate design (thesis) is the last instructional step for the college study, a systematical comprehensive training and also an overall test for the instructional quality before graduation.

**Material Performance Test Technology (3 credits)**

**Course code**: b4013004

**Suitable majors**: Materials Chemistry

**Instructor**: Zhu Luping and other 4 teachers

**Brief introduction:**

Through this course, the students are able to understand the optical, electric, magnetic, thermal and mechanical performance of the materials, laying a basis for the study of test characterization of the materials.

**Reference book:**

Material Performance Test Technology,

**Prerequisite**: Physical Chemistry, Polymers

**Visit to Enterprises (1 credit)**

**Course code**: b4013005

**Suitable majors**: Materials Chemistry, Materials Science and Engineering

**Instructor**: Wang Yuanyuan

**Brief introduction:**

This course organizes the students to visit the enterprises, with the objective to require the students to strengthen their sensible understanding of related enterprises, improve their practical and operational ability and combine theory and practice based on the learned theoretical knowledge.

**Air Pollution Controlling Engineering Experiment (1 credit)**

**Course code**: b4013006

**Suitable majors**: Environmental Protection Equipment Engineering, Environmental Engineering

**Instructor**: Chen Shengwen, Fan Li, Dai Yu

**Brief introduction:**

The experimental course is the practical instructional step of the course of air pollution control engineering set for undergraduates. Through experiments, the students are required to master the basic experimental methods and operational skills of this course, learn to correctly use all kinds of instruments and experimental devices, master the scientific methods of processing experimental data, cultivate their ability of scientific research, problem analysis and solution with learned theory and build up a practical attitude and rigorous work style. Meanwhile, with the combination of theory and practice, the course strengthens their understanding of the learned basic theory and improves their ability on some aspects

**Reference book:**

Waste Gas Processing Experiment, Chen Shengwen, Fan Li, Self-edited

**Basic Manufacturing Skills Training for Battery Engineering (3 credits)**

**Course code**: b4013009

**Suitable majors**: Materials Science and Engineering

**Instructor**: Li Yang, Li Jing

**Brief introduction:**

Basic Manufacturing Skills Training for Battery Engineering is a compulsory course for the major of Materials Science and Engineering, which is also an important practical step of the cultivation plan for engineering majors and important part of the engineering quality training. The students are required to get familiar with the synthesis technology of anode material of lithium-ion battery, pole piece coating and performance test technology of lithium battery and have the ability to analyze and solve detailed problems in related engineering practice. The theoretical instruction and engineering practice relates to each other closely so as to train the professional ability, communication ability, team spirit and leadership pf the students.

**Reference book:**

Production Technology of Lithium-ion Battery, Wu Mingchang, Li Yang, Self-edited

**Prerequisite**: Applied Electric Chemistry, Chemical Electric Source

**Course Design of Electric Waste Recycling (2 credits)**

**Course code**: b4013010

**Suitable majors**: Environmental Engineering

**Instructor**: Xu Min

**Brief introduction:**

This course focuses on the processing procedures of electric waste recycling, introduces corresponding environmental engineering design scope, contents and previous work of environmental engineering design, systematically explains on the technological process selection, technological process computation, technological facility selection of pollution protection engineering of different environmental factors and provides economic technological analysis of environmental engineering analysis.

**Reference book:**

Instruction of Environmental Engineering Design, Xu Xinyang, Chemical Industry Press

**Prerequisite**: Electric Waste Management and Recycling Technology

**Secondary Project (LED Energy-saving Light) (3 credits)**

**Course code**: b4013011

**Suitable majors:** Materials Science and Engineering

**Instructor**: Wu Zihua and Zhang Da

**Brief introduction:**

This project requires the students to understand the feature, property, preparation technology, component integration manufacturing of LED energy-saving light materials, skillfully master the related operational skills of LED energy-saving light performance test and have the elementary ability to analyze and solve detailed problems in engineering practice, through the instruction and practice of LED energy-saving light project. The theoretical instruction relates to engineering practice closely so as to train the students’ professional ability, communication ability, team spirit and leadership.

**Reference book:**

Self-edited textbook

**Prerequisite**: Semi-conductor Lighting Technology

**Secondary Project (Super Capacitor) (3 credits)**

**Course code**: b4013012

**Suitable majors**: Materials Science and Engineering

**Instructor**: Li Jing and Wu Zihua

**Brief introduction:**

Through the instruction and practice of super capacitor project, the students are able to understand the features, property and preparation technology of super capacitor energy storage electrode materials and skillfully master the related operational skills of super capacitor performance test, and have the elementary ability to analyze and solve related practical engineering problems. The theoretical instruction relates to engineering practice closely so as to train the students’ professional ability, communication ability, team spirit and leadership.

**Secondary Project (Chemical Battery System) (3 credits)**

**Course code**: b4013013

**Suitable majors**: Materials Science and Engineering

**Instructor**: Li Yang, Wu Zihua

**Brief introduction:**

This course is a practical course for the major of Materials Science and Engineering. Through study of commonly used chemical energy-storage system of lithium-ion battery, the students are able to understand the development, features, property and preparation technology of lithium-ion battery electrode material and skillfully master the assembly and performance test of lithium-ion battery.

**Reference book:**

Lithium-ion Battery Preparation and Performance Test, Li Yang, Self-edited

**Secondary Project (Solar-energy Power Generation System) (3 credits)**

**Course code**: b4013014

**Suitable majors**: Materials Science and Engineering

**Instructor**: Li Wenqing, Zhu Xiangrong

**Brief introduction:**

This project introduces the design, preparation and performance test of different components of solar energy battery, and instructs the students to do experimental operations or trainings of new energy high effective conversational materials and basic component technology in groups. The course contents include: 1. design and preparation of solar energy battery, including the preparation of photo anode films, dye absorption, cathode preparation, electrolyte filling and batter assembly, which shall be prepared at room temperature in labs; 2. design and preparation of solar energy battery plate, which is assembled with single solar energy battery in paralleling way or connecting way; 3. test and analysis of key performance parameters of solar energy power generation system, including the open circuit voltage, short circuit current and fill factor. Through this project, the students’ professional ability, technological innovative ability and team spirits are improved.

**Reference book:**

Solar Energy Power Generation System, Li Wenqing, Zhu Xiangrong, Self-edited

**Prerequisite**: Photovoltaic Power Generation Technology and Application, Solar Energy Battery Material, Solar Energy Power Generation Technology and System Design, New Energy Power Generation Technology

**Analysis Chemistry Experiment (1 credit)**

**Course code**: b4013015

**Suitable majors**: Environmental Engineering

**Instructor**: Li Xiuli

**Brief introduction:**

Analysis Chemistry Experiment is an independent practical course, which corresponds to the theoretical course of analysis chemistry. Through the experimental instruction, the students are required to understand and master the basic theoretical knowledge and basic methods of analysis chemistry, get familiar with the operational methods of related instruments, master the basic operational skills and have elementary ability of analysis and test, laying a solid basis for the better learning of specialty knowledge for the major of environmental engineering and better solution of practical problems in the environmental monitoring work.

**Reference book:** Analysis Chemistry Experiment, Bing Naici, self-edited

**Analysis Chemistry Experiment (2 credits)**

**Course code**: b4013016

**Suitable majors**: Materials Chemsitry

**Instructor**: Bing Naici

**Brief introduction:**

Through the experimental instruction, the students are required to understand and master the basic theoretical knowledge and basic methods of analysis chemistry (including modern instrument analysis), get familiar with the operational methods of related instruments, master the basic operational skills and have elementary ability of analysis and test, laying a solid basis for the better learning of specialty knowledge and better solution of practical problems.

**Reference book:** Analysis Chemistry Experiment, Bing Naici, self-edited

**Prerequisite**: Inorganic Chemistry, Inorganic Chemistry Experiment

**Polymer Chemistry and Physical Experiment (1 credit)**

**Course code**: b4013017

**Suitable majors**: Materials Chemistry

**Instructor**: Bing Naici

**Brief introduction:**

This course is an important part of basic specialty course, which relates to the theoretical course of polymer chemistry and polymer physics closely. The experimental contents include the different types of reactions and the execution of polymerization, the brief introduction of related theoretical basis. The polymer physical experiment focuses on the relationship between structure and performance. Through this course, the students are able to strengthen their understanding of the scientific theory of polymer synthesis and polymer physics, master the basic operations of polymer chemical and physical experiment, the execution and controlling factors of polymer synthesis, know the common characterization and analysis of polymer composites and material performance test methods, improve their ability to write qualified experimental report and experimental data processing ability, have good experimental working skills and rigorous working attitude, have the ability to analyze and solve problems independently and innovative ability.

**Reference book:**

Polymer Chemistry and Physical Experiment, Zhou Zhimin, Mi Yuanzhu, Chemical Industry Press

**Prerequisite**: Organic Chemistry, Organic Chemical Experiment

**Design of Functional Material Technology (2 credits)**

**Course code**: b4013018

**Suitable majors**: Materials Chemistry

**Instructor**: Xie Lili

**Brief introduction:**

This course is one of the important specialty experimental courses for the major of Materials Chemistry. The course objective is to help the students master the knowledge of functional materials, especially the environmental-friendly functional materials, understand the research methods and experimental technology used for the design of functional materials, improve their ability to apply specialty knowledge. Through the practice, the students are able to master the design, preparation technology and performance test of functional materials and improve their practical ability.

**Reference book:**

Design of Functional Material Technology, Xie Lili, Self-edited

**Prerequisite**: Introduction to Material Science, Materials Chemistry, Material Physics

**Experiment on Solid Waste Processing and Disposal (1 credit)**

**Course code**: b4013019

**Suitable majors**: Environmental Engineering

**Instructor**: Gao Guilan

**Brief introduction:**

This course is a compulsory specialty course. The course objective is to help the students master the methods, theories and recycling technology of solid waste processing and disposal, systematically understand the basic concept, theory, main facility and typical technology of solid waste processing and disposal, cultivate their basic ability to analyze and solve the more and more serious solid waste pollution problems, laying a basis for the engineering design and technology management of solid waste processing and disposal. The course contents include the general property, collection, storage, clearance and Traffic and Transportation, preprocessing, physical processing, biological processing, thermal processing, recycling and comprehensive application, mining disposal of solid wastes and the management of dangerous and radiant solid waste.

**Reference book:**

Solid Waste Disposal and Processing, Ning Ping, Higher Education Press

**Experiment of Solid Waste Recycling (1 credit)**

**Course code**: b4013020

**Suitable majors**: Environmental Protection Equipment Engineering

**Instructor**: Guan Jie

**Brief introduction:**

This course is a compulsory specialty course with the objective to help the students master the method, theory and recycling technology of processing and disposal of solid waste, systematically understand the basic concept, theory, main facility and typical technology of solid waste processing and disposal, cultivate their basic ability to analyze and solve the more and more serious solid waste pollution problems, laying a basis for the engineering design and technology management of solid waste processing and disposal. The course contents include the general property, collection, storage, clearance and Traffic and Transportation, preprocessing, physical processing, biological processing, thermal processing, recycling and comprehensive application, mining disposal of solid wastes and the management of dangerous and radiant solid waste.

**Reference book:**

Solid Waste Disposal and Processing, Ning Ping, Higher Education Press

**Graduation Internship and Graduation Design (Thesis) of Environmental Protection Equipment Engineering (12 credits)**

**Course code**: b4013021

**Suitable majors**: Environmental Protection Equipment Engineering

**Brief introduction:**

Graduation Design (thesis) is a necessary practical instructional step, which is also the longest practical instructional step with most contents after the completion of all the courses, experiments and internships. The graduation design (thesis) plays an important role in the analysis and solution of practical problems with learned basic theory and knowledge and lays a good basis for the further learning and work in the future.

**Design of Environmental Protection Equipment Technology (3 credits)**

**Course code**: b4013022

**Suitable majors**: Environmental Protection Equipment Engineering

**Instructor**: Zhou Mingyuan

**Brief introduction:**

Course Design of Environmental Protection Equipment Engineering is a practical session of related environmental engineering technological design with the application of environmental protection equipment theory and related learned knowledge focusing on the unit operational equipment and its main auxiliary equipment. Through the course, the students are required to master the basic procedures and methods of environmental engineering design and have an overall practice of technical documents searching, filtering formula and algorithm, design results expression in simple words and graphs and the environmental engineering drawings.

**Reference book:**

Design of Environmental Protection Equipment Technology, Zhou Jingxuan, Chemical Industry Press

**Prerequisite**: Environmental Protection Equipment Design and Manufacturing, Course Design of Mechanic Design, Chemical Engineering Theory, Water Pollution Controlling Engineering, and Solid Waste Processing and Disposal

**Course Design of Environmental Engineering Theory (1 credit)**

**Course code**: b4012023

**Suitable majors**: Environmental Protection Equipment Engineering

**Instructor**: Sun Zhiguo

**Brief introduction:**

The course design of environmental engineering theory is an important instructional step for the further learning of chemical design and cultivation of students’ ability of chemical engineering design after the completion of basic courses and course of environmental engineering theory. It is also a practice of chemical engineering design focusing on the chemical engineering unit operation with the application of knowledge of environmental engineering theory and related prerequisite courses. Through this course, the students are able to master the basic procedures and methods of chemical engineering unit operational design, get familiar with the searching of technological documents and national technological standards, correct selection of formula and data, correct expression of design thoughts and results with simple and clear words or engineering languages. During this process, the students are required to cultivate a practical attitude for scientific research and progressively build up correct design thought, economic view and rigorous work style, improve their ability to independently solve practical problems with learned knowledge comprehensively.

**Reference book:**

Course Design of Chemical Engineering Theory (2nd Edition), Ma Jiangquan, China Petrochemical Press

**Prerequisite**: Environmental Engineering Theory

**Experiment of Environmental Engineering Theory (1 credit)**

**Course code**: b4013024

**Suitable majors**: Environmental Engineering

**Instructor**: Sun Zhiguo

**Brief introduction:**

Environmental Theory Experiment is a practical course with the main contents of chemical engineering unit operation theory and facility and the feature of experimental research methods of processing engineering problems. After the systematic learning of theoretical knowledge of environmental engineering, the students are able to get familiar with the basic operational and controlling methods of basic process and facility in the practice of environmental engineering, cultivate their experimental skills and improve their ability to analyze and solve practical engineering problems

**Reference book:**

Experiment of Environmental Engineering Theory, Shi Xianling, East China University of Science and Technology Press

**Prerequisite**: Environmental Engineering Theory

**Graduation Internship and Graduation Design (Thesis) of Environmental Engineering (12 credits)**

**Course code**: b4013025

**Suitable majors**: Environmental Engineering

**Brief introduction:**

Graduation Design (thesis) is a necessary practical instructional step, which is also the longest practical instructional step with most contents after the completion of all the courses, experiments and internships. The graduation design (thesis) plays an important role in the analysis and solution of practical problems with learned basic theory and knowledge and lays a good basis for the further learning and work in the future.

**Experiment of Environment Engineering (1 credit)**

**Course code**: b4013026

**Suitable majors**: Environmental Engineering

**Instructor**: Gao Guilan

**Brief introduction:**

This course requires the students to master the operational methods of different analysis instruments and data processing ability.

**Basic Experiments of Environmental Chemistry (1 credit)**

**Course code**: b4013027

**Suitable majors**: Environmental Protection Equipment Engineering

**Instructor**: Dai Yu

**Brief introduction:**

Through this course, the students are able to strengthen the understanding of the basic theory and knowledge of environmental chemistry, correctly and skillfully master the experimental skills and basic operations of environmental chemistry, improve their ability to observe, analyze and solve problems, and cultivate their rigorous work style and practical work attitude, laying a good basis for the learning of following courses and practical work in the future.

**Reference book:**

Basic Experiment of Environmental Chemistry, Dai Yu, Self-edited

**Experiment of Environmental Monitoring (1 credit)**

**Course code**: b4013028

**Suitable majors**: Environmental Protection Equipment Engineering, Environmental Engineering

**Instructor**:

**Brief introduction:**

Experiment of Environmental Monitoring cultivates the necessary basic skills of technical persons in the field of environmental protection and relates to environmental monitoring. Through this course, the students are able to strengthen their understanding of the basic concept and theory of environmental monitoring, master different basic operations of environmental monitoring correctly, systematically learn the basic knowledge of environmental monitoring experiment, cultivate their good experimental habits, practical work attitude and rigorous experimental style. Environmental Monitoring Experiment is a necessary tool for the environmental monitoring and lays a solid basis for the theoretical and experimental instruction of following courses and work in the future.

**Reference book:**

Instruction of Environmental Monitoring Experiments, Gao Guilan, Self-edited

**Course Design of Mechanic Design (2 credits)**

**Course code**: b4013029

**Suitable majors**: Environmental Protection Equipment Engineering

**Instructor**: Zhou Mingyuan

**Brief introduction:**

Mechanic Design is an important practical step of mechanic design courses, which is the first overall design ability training for the students at school, playing an important role in the realization of students’ cultivation objectives. The main instructional tasks are as follows:

1. Build up correct design thoughts and cultivate their ability to analyze and solve mechanic design problems with theory and practical knowledge of mechanical design courses and other prerequisite courses.

2. Learn the general methods and steps of mechanic design and master the general rules of mechanic design;

3. Receive trainings of basic skills of mechanic design, like computation, drawing, searching documents and manual, application standards and criteria, computer assistant design and drawing.

**Reference book:**

Course Design of Mechanic Design, Song Baoyu, Higher Education Press

**Prerequisite**: College Physics, Engineering Drawing and Computer Drawing, Mechanical Engineering Material, Engineering Mechanics, Engineering Material and Mechanic Design

**Mechanic Drawing Design (2 credits)**

**Course code**: b4013030

**Suitable majors**: Environmental Protection Equipment Engineering

**Instructor**: Yuan Qun, Zhang Weiyuan, Wu Jun and others

**Brief introduction:**

Modern Engineering Drawing Design cultivates the students’ engineering practical ability through the practice of dissembling, test, rough drawing design of components, assembly drawing design of component, based on the completion of courses of modern engineering drawing I (including projection method, three-view drawing, ensemble and expression) and modern engineering drawing II (including the expression of mechanic standard component, common component, component drawing and assembly drawing). The main purposes of this course include:

1. Master the disassembly of the mechanic facility;

2. Master the drawing of mechanic components;

3. Master the expression and drawing of component rough drawing and work drawing;

4. Master the expression of assembly drawing of mechanic facility;

5. Draw a complete working drawing of mechanic facility (A1 size)

**Reference book:**

Modern Engineering Drawing Design, Self-edited

**Prerequisite:** mechanic drawing

**Elementary Internship (1 credit)**

**Course code**: b4013031

**Suitable majors**: Environmental Protection Equipment Engineering

**Instructor**: Guan Jie

**Brief introduction:**

This course is part of the instructional plan of the specialty, which is arranged previous to the starting of specialty course. With the objective of understanding the technological facility, clearing procedure and clearing facility, in the way of enterprise visit, the course helps the students have a sensible understanding of the environmental engineering specialty, laying a basis for the following courses and cultivation of students’ ability.

**Production Internship (2 credits)**

**Course code**: b4013032

**Suitable majors**: Materials Chemistry

**Instructor**: to be determined

**Brief introduction:**

Production internship is an important step of the internship, which is also an important practice for the preparation of learning of related specialty courses. The course objective: understand the brief introduction of enterprises and procedures of production technology, improve their sensible understanding and lay a basis for the learning of specialty courses, cultivate their practical, earnest and modest work style, and improve their ability to observe, analyze and solve problems in practice.

**Reference book:**

Production Internship, Self-edited

**Course Design of Water Pollution Controlling Engineering (2 credits)**

**Course code**: b4013033

**Suitable majors**: Environmental Engineering

**Instructor**: Liang Bo, Zhu Xuefeng, Ma Changwen and others

**Brief introduction:**

Focusing on the typical hydro-technology, cultivate the students’ design and practice ability.

**Reference book:**

Course Design and Graduation Design of Water Pollution Controlling Engineering, Wang Chunrong, Chemical Industry Press

**Prerequisite**: Water Pollution Controlling Engineering

**Experiments of Water Pollution Controlling Engineering (1 credit)**

**Course code**: b4013034

**Suitable majors**: Environmental Protection Equipment Engineering, Environmental Engineering

**Instructor**: Liang Bo, Zhu Xuefeng, Ma Changwen and others

**Brief introduction:**

This course strengthens the theoretical learning and improves the practical ability through experiments.

**Reference book:**

Experiments of Waste Water Processing, Self-edited

**Experiment of Physical Chemistry (1 credit)**

**Course code**: b4013035

**Suitable majors**: Materials Chemistry

**Instructor**: Zhu Luping, Wang Lingling

**Brief introduction:**

Through experimental instruction, the course requires the students to understand and master the basic theoretical knowledge and experimental methods of physical chemistry, get familiar with the operational methods of related instrument, master the basic operational skills and improve their ability to analyze and solve problems, laying a good basis for the better learning of specialty knowledge.

**Reference book:**

Experiment of Physical Chemistry, Self-edited

**First Level Project (Clear Energy Intelligent Room) (2 credits)**

**Course code**: b4013039

**Suitable majors**: Materials Science and Engineering

**Instructor**: Xu Haiping

**Brief introduction:**

First Level Project (Clear Energy Intelligent Room) I introduces CDIO thoughts based instructional outlines to the students who are going to start the learning of specialty courses, so that the students are able to understand the following specialty courses and all kinds of practical activities. The course introduces CDIO, pays attention to the cultivation of personal ability and collaborative ability, especially the ability of project organization, design, development and execution and the communication and coordination ability, and improves their innovative sensibility, cooperative spirit and the learning style by combing theory with practice.

Intelligent Room provides effective, comfortable, safe, convenient and environmental protection living environments integrating system, structure, service and management, with the functions of architecture, network communication, information appliance and facility automation together based on the living house platform, which makes the life more comfortable, safe and effective through overall management. The clear energy intelligent room combines the subsystems related to living life and clear energy materials together in the process of innovating the system or technology of intelligent room.

**Reference book:**

New Energy Technology, China Electric Power Press

**Instrument Analysis I (2 credits)**

**Course code**: b4013040

**Suitable majors**: Materials Chemistry

**Instructor**: Wu Yihua and others

Brief introduction;

This course carries out XRD and IR instrument trainings. The trainings starts from the basic theory of instrument and basic structure of instrument, explains on and operates the preprocessing of samples, application of software and test of practical samples. The training pays attention to the practical operation and analysis of practical problems and cultivates their practical applied operational ability of instruments.

**Reference book:**

Self-edited Textbook

**Instrument Analysis II (2 credits)**

**Course code**: b4013041

**Suitable majors**: Materials Chemistry

**Instructor**: Wang Lingling and others

**Brief introduction:**

This course carries out ICP and GC instrument trainings. The trainings starts from the basic theory of instrument and basic structure of instrument, explains on and operates the preprocessing of samples, application of software and test of practical samples. The training pays attention to the practical operation and analysis of practical problems and cultivates their practical applied operational ability of instruments.

**Reference book:**

Self-edited Textbook

**Experiment of Instrument Analysis (2 credits)**

**Course code**: b4013042

**Suitable majors**: Environmental Engineering

**Instructor**: Zhang Li

**Brief introduction:**

This course requires the students to master the operational methods of different kinds of analysis instrument and data processing ability.

**Reference book:**

Experiment of Instrument Analysis, Luo Liqiang, Xu Yinjuan, China Petrochemical Press

**Prerequisite**: Analysis Chemistry

**Experiment of Organic Chemistry (1 credit)**

**Course code**: b4013043

**Suitable majors**: Materials Chemistry, Environmental Engineering

**Instructor**: Zhao Xueling

**Brief introduction:**

Experiment of Organic Chemistry is an independent course which relates to the corresponding theoretical course of engineering chemistry closely. The course objective is to learn the basic theory and knowledge of organic chemistry and instruct the experiment with the above knowledge. The students are required to use common organic experimental instrument correctly, master the basic operational skills of organic chemical experiments, master the prepration and purifying methods of organic materials and learn to process data correctly with theory of error.

**Reference book:**

Experiment of Organic Chemistry, Gao Zhanxian, Higher Education Press

**Elementary Internship (1 credit)**

**Course code**: b4013044

**Suitable majors**: Environmental Engineering

**Instructor**: Gao Guilan

**Brief introduction:**

This course is part of the instructional plan of the specialty, which is arranged previous to the starting of specialty course. With the objective of understanding the technological facility, clearing procedure and clearing facility, in the way of enterprise visit, the course helps the students have a sensible understanding of the environmental engineering specialty, laying a basis for the following courses and cultivation of students’ ability.

**Production Internship (2 credits)**

**Course code**: b4013045

**Suitable majors**: Environmental Protection Equipment Engineering

**Instructor**: Guan Jie

**Brief introduction:**

This course requires the students to understand and master the technological process and processing methods of production.

**Specialty Quality Exploration (1 credit)**

**Course code**: b4013046

**Suitable majors**: Environmental Protection Equipment Engineering

**Instructor**: Guan Jie

**Brief introduction:**

In accordance with the features of psychological quality development of the undergraduates, the course breaks through the traditional class instructional mode and effectively adjusts and improves the understanding, psychology and behavior of the undergraduates with full connotation, new mode, true experience, rapid growth and conservation. It is an innovation and development of the traditional class instructional mode.

**Production Internship (2 credits)**

**Course code**: b4013045

**Suitable majors**: Environmental Protection Equipment Engineering

**Instructor**: Guan Jie

**Brief introduction:**

This course requires the students to understand and master the technological process and processing methods of production.

**Specialty Quality Exploration (1 credit)**

**Course code**: b4013048

**Suitable majors**: Environmental Engineering

**Instructor**: Gao Guilan

**Brief introduction:**

In accordance with the features of psychological quality development of the undergraduates, the course breaks through the traditional class instructional mode and effectively adjusts and improves the understanding, psychology and behavior of the undergraduates with full connotation, new mode, true experience, rapid growth and conservation. It is an innovation and development of the traditional class instructional mode.

*Specialty Course*

**College of Arts and Sciences**

1. School of Foreign Languages
2. School of Sciences

3. Department of Humanities

**School of Foreign Languages**

**Theory and Practice of Translation (2 credits)**

**Course code**: b2021001

**Suitable majors**: English

**Instructor**: Xu Ju, Ling Wenhua

**Brief introduction:**

Theory and Practice of Translation is the core specialty course for the seniors majored in English. The course introduces the basic theory and skills of translation, the comparative analysis of English and Chinese language, the translation methods of different literary form, helping the students master the basic translation theory, the translation strategy and skills of words, sentences and different literary forms of English or Chinese language. Through a large amount of translation practice, the students’ English-Chinese translation ability is improved and the translation keeps consistant with the original meaning in fluent words.

**Reference book:**

English Translation Instruction, Wen Xiuyin, Nankai University Press

**Second Foreign Language (German) I (2 credits)**

**Course code**: b2021002

**Suitable majors**: English

**Instructor**: Wang Lei, Pan Huajia

**Brief introduction:**

The students are required to understand the brief information of German history, culture and education, understand the pronunciation of 30 German alphabets, master the basic pronunciation rules and certain vocabulary, and make greetings and simple dialogues in German. Besides, the students are required to read and comprehend simple articles with intensive vocabulary of 300 words and extensive vocabulary of 300 words at the reading speed of 7-9 words per minute. The students are able to basically understand the instructional words and simple dialogues in German, make elementary communications in German, and write short articles with learned vocabulary.

**Reference book:**

New College German I (2nd edition), Li Yuan, Shao Yong and others, Foreign Language Instructional and Research Press

**Second Foreign Language (German) II (2 credits)**

**Course code**: b2021003

**Suitable majors**: English

**Instructor**: Wang Lei, Pan Huajia

**Brief introduction:**

Course objectives: master the basic knowledge of German, enlarge their vocabulary, systematically learn the grammar and improve the reading skills and speed; make simple communications in German and improve their oral and written skills; master the main spelling rules with correct pronunciation and stresses, and master the basic tones of the sentences; learn the conjugation of verbs in present tense, imperative sentence, articles and pronounces in first case and fourth case, verb and verb complement, omission of articles, sentence structure, modal verb, separable verb, personal pronoun in first and forth case, infinitive noun, preposition dominating the third and fourth case; master a intensive reading vocabulary of 500 words and extensive vocabulary of 800 words; basically understand the class instructions and make simple conversations in German; answer the questions about the course contents in German and write simple sentences with learned vocabulary.

**Reference book:**

New College German II (2nd edition), Li Yuan, Shao Yong and others, Foreign Language Instructional and Research Press

**Second Foreign Language (German) III (2 credits)**

**Course code**: b2021004

**Suitable majors**: English

**Instructor**: Wang Lei, Chen Feifei

**Brief introduction:**

This course aimss to cultivate the students’ basic German communication ability, train their ability of listening, speaking, reading and writing, strengthen their understanding of the information and culture of Germany and improve their cross-cultural communication ability. The students are required to read simple German articles with an intensive reading vocabulary of 1000 words and extensive reading vocabulary of 2000 words. The students are also required to understand the lecturing in German and master the basic grammars like the sentence structure, the structure of subordinate compound, infinitive with or without zu, present perfect tense and passive sentences; the students are able to make communications on basic topics in German and write simple articles in German.

**Reference book:**

New College German I (2nd edition), Li Yuan, Shao Yong and others, Foreign Language Instructional and Research Press

**Second Foreign Language (Japanese) I (2 credits)**

**Course code**: b2021005

**Suitable majors**: English

**Instructor**: Shen Lili, Ou Huijuan and others

**Brief introduction:**

This course is set for the students of non-Japanese majors, which is a part of the common foreign language education for higher education. The course objective is to master the basic Japanese knowledge and meet the corresponding requirement of 4th Grade of Japanese Proficiency Examination in listening, speaking, reading and writing.

**Reference book:**

Basic Japanese Instruction, Zhu Chunyue, Peng Guanglu, Foreign Language Instruction and Research Press

**Second Foreign Language (Japanese) II (2 credits)**

**Course code**: b2021006

**Suitable majors**: English

**Instructor**: Shen Lili, Ou Huijuan and others

**Brief introduction:**

This course is set for the students of non-Japanese majors, which is a part of the common foreign language education for higher education. The course objective is to master the basic Japanese knowledge and meet the corresponding requirement of 4th Grade of Japanese Proficiency Examination in listening, speaking, reading and writing.

**Reference book:**

Basic Japanese Instruction, Zhu Chunyue, Peng Guanglu, Foreign Language Instruction and Research Press

**Second Foreign Language (Japanese) III (2 credits)**

**Course code**: b2021007

**Suitable majors**: English

**Instructor**: Shen Lili, Ou Huijuan and others

**Brief introduction:**

This course is set for the students of non-Japanese majors, which is a part of the common foreign language education for higher education. The course objective is to master the basic Japanese knowledge and meet the corresponding requirement of 4th Grade of Japanese Proficiency Examination in listening, speaking, reading and writing.

**Reference book:**

Basic Japanese Instruction, Zhu Chunyue, Peng Guanglu, Foreign Language Instruction and Research Press

**Advanced English I (2 credits)**

**Course code**: b2021008

**Suitable majors**: English

**Instructor**: Hao Liping, Yang Renming, Fan Xiaoqing

**Brief introduction:**

Advanced English is a core course for the English majors. Through the extensive English reading materials and famous works, the course expands the students’ vision, strengthens their understanding of the society and life, cultivates their ability to analyze and understand famous works, their logic thinking ability and independent thinking ability, improves their sensibility to cultural difference and their English language proficiency, especially the reading comprehension, grammar rhetoric and writing ability, optimizes their knowledge structure and explores the students’ language, critical, communication and research ability. Based on that, the course tries to develop their humanity quality and scientific innovative spirit, cultivate their continuous learning ability, cooperative ability, employment ability and entrepreneurship ability.

**Reference book:**

Modern College English 5/6, Yang Limin, Foreign Language Instruction and Research Press

**Prerequisite**: Basic English

**Advanced English II (2 credits)**

**Course code**: b2021009

**Suitable majors**: English

**Instructor**: Hao Liping, Yang Renmin, Fan Xiaoqing

**Brief introduction:**

Advanced English is a core course for the English majors. Through the extensive English reading materials and famous works, the course expands the students’ vision, strengthens their understanding of the society and life, cultivate their ability to analyze and understand famous works, their logic thinking ability and independent thinking ability, improve their sensibility to cultural difference and their English language proficiency, especially the reading comprehension, grammar rhetoric and writing ability, optimize their knowledge structure and explore the students’ language, critical, communication and research ability. Based on that, the course tries to develop their humanity quality and scientific innovative spirit, cultivate their continuous learning ability, cooperative ability, employment ability and entrepreneurship ability.

**Reference book:**

Modern College English 5/6, Yang Limin, Foreign Language Instruction and Research Press

**Prerequisite**: Basic English

**Prerequisite**: Basic English, Advanced English I

**Advanced English III (2 credits)**

**Course code**: b2021010

**Suitable majors**: English

**Instructor**: Hao Liping, Yang Renmin, Fan Xiaoqing

**Brief introduction:**

Advanced English is a core course for the English majors. Through the extensive English reading materials and famous works, the course expands the students’ vision, strengthens their understanding of the society and life, cultivate their ability to analyze and understand famous works, their logic thinking ability and independent thinking ability, improve their sensibility to cultural difference and their English language proficiency, especially the reading comprehension, grammar rhetoric and writing ability, optimize their knowledge structure and explore the students’ language, critical, communication and research ability. Based on that, the course tries to develop their humanity quality and scientific innovative spirit, cultivate their continuous learning ability, cooperative ability, employment ability and entrepreneurship ability.

**Reference book:**

Modern College English 5/6, Yang Limin, Foreign Language Instruction and Research Press

**Prerequisite**: Basic English

**Prerequisite**: Basic English, Advanced English II

**Theory and Practice of International Trade (2 credits)**

**Course code**: b2021011

**Suitable majors**: English

**Instructor**: Cai Yinhua, Wu Huangzhi, Tian Hua

**Brief introduction:**

Theory and Practice of International Trade is a specialty explorative course for the English major, a basic specialty course with the objective to help the students master, understand and apply the basic theory, rules, skills and knowledge of international trade. This course is a discipline researching on the international trade theory and the detailed process of international commodity exchange, a comprehensive applied discipline with theoretical and practical nature. The course objective is to help the students systematically and comprehensively master the basic theory, rules, skills and methods of international trade, understand the professionalism and complex of international trade, know the policy of foreign economic activity of our country and the different kind of trade activities generally accepted by the international society, cultivate and improve their ability to correctly analyze and solve problems, laying a good basis for the learning of other courses and economic management or foreign trade work in the future.

**Reference book:**

Theory and Practice of International Trade, Chen Yan, Tsinghua University Press

**Basic English I (4 credits)**

**Course code**: b2021012

**Suitable majors**: English

**Instructor**: Ling Wenhua, Li Liping

**Brief introduction:**

Basic English I and II is a system, which applies the instructional method of “listening and speaking go first; reading and writing attached with equal importance”, to train the students’ listening, speaking, reading and writing skills. Besides the text A and B and auxiliary pre/after-class exercises, each unit provides exercises on oral English, vocabulary, grammar, writing and listening. The instructor shall try to cultivate the students’ good self-study habit, improve their pronunciation, toning and reading skills, improve the use of learned vocabulary and grammar knowledge for the cultivation of practical communication ability, instruct the students to understand, analyze and appreciate the learning contents correctly, enlarge the basic vocabulary to about 2000 words, and actively introduce all kinds of new language phenomenon.

**Reference book:**

Comprehensive Instruction II, He Zhaoxiong, Shanghai Education Press

**Basic English II (4 credits)**

**Course code**: b2021013

**Suitable majors**: English

**Instructor**: Ling Wenhua, Li Liping

**Brief introduction:**

Basic English I and II is a system, which applies the instructional method of “listening and speaking go first; reading and writing attached with equal importance”, to train the students’ listening, speaking, reading and writing skills. Besides the text A and B and auxiliary pre/after-class exercises, each unit provides exercises on oral English, vocabulary, grammar, writing and listening. The instructor shall try to cultivate the students’ good self-study habit, improve their pronunciation, toning and reading skills, improve the use of learned vocabulary and grammar knowledge for the cultivation of practical communication ability, instruct the students to understand, analyze and appreciate the learning contents correctly, enlarge the basic vocabulary to about 2000 words, and actively introduce all kinds of new language phenomenon.

**Reference book:**

Comprehensive Instruction II, He Zhaoxiong, Shanghai Education Press

**Prerequisite:** Basic English I

**Basic English III (4 credits)**

**Course code**: b2021014

**Suitable majors**: English

**Instructor**: Yang Renming, Liu Chang, Zhou Zhou

**Brief introduction:**

Based on the learning of Basic English I and II, the course carries out all kinds of skill training. The course strengthens the training of writing and translation ability and pays attention to the training of listening and speaking at the same time and instructs the students to do extensive reading exercises; and the oral English training transfers from questioning and answering and simple retelling to long description and elementary analysis and debating; the course tries to enlarge the students’ vocabulary to about 2000 words with the word formation methods, so as to meet the requirements of about 6000 words; the course stresses the training on syntax and the practical function of grammar in communication (like how to express the causality, how to compare and how to compose an article and others), so as to improve their independent working ability and the ability to analyze, criticize and evaluate the text with basic reference books.

**Reference book:**

Comprehensive Instruction III, He Zhaoxiong, Shanghai Education Press

**Prerequisite**: Basic English II

**Basic English IV (4 credits)**

**Course code**: b2021015

**Suitable majors**: English

**Instructor**: Yang Renming, Liu Chang, Zhou Zhou

**Brief introduction:**

Based on the learning of Basic English I and II, the course carries out all kinds of skill training. The course strengthens the training of writing and translation ability and pays attention to the training of listening and speaking at the same time. The course instructs the students to do extensive reading exercises; and the oral English training transfers from questioning and answering and simple retelling to long description and elementary analysis and debating; the course tries to enlarge the students’ vocabulary to about 2000 words with the word formation methods, so as to meet the requirements of about 6000 words; the course stresses the training on syntax and the practical function of grammar in communication (like how to express the causality, how to compare and how to compose an article and others), so as to improve their independent working ability and the ability to analyze, criticize and evaluate the text with basic reference books.

**Reference book:**

Comprehensive Instruction IV, He Zhaoxiong, Shanghai Education Press

**Prerequisite**: Basic English III

**Educational Psychology (2 credits)**

**Course code**: b2021016

**Suitable majors**: English

**Instructor**: Fan Xiaoqing, Zhou Zhou

**Brief introduction:**

Educational Psychology is a selective specialty course for the undergraduates majored in English, with the objective to cultivate their learning ability of related knowledge, preparing for the students’ employment in the field of education. Through this course, the students are required to understand the psychological rules, psychological development and individual difference, learning theory, cognition theory, learning transferring and character formation, instructional evaluation and other basic educational psychological theories, so as to improve their educational quality, have a perception of modern educational psychology and lay a basis for the learning of other specialty courses.

**Reference book:**

Educational Psychology, John W. Santrock, World Graphics & Text Publishing Center

**Technological Translation (2 credits)**

**Course code**: b2021017

**Suitable majors**: English

**Instructor**: Wang Yin, Li Zhujun

**Brief introduction:**

Technological Translation is a specialty course for the seniors majored in English, which requires the students to do English-Chinese translation of technological documents based on the mastering of bilingual knowledge, language background and basic technological English knowledge. The students shall keep the translation consistent with the original meaning and style, and smooth enough to be accepted by readers. The course requires the students to skillfully master the methods and skills of technological English translation, translate the mid-level academic articles or popular science materials of academic journals in US or UK to Chinese and translate simple Chinese articles in the mechanic field or electromechanic field to English.

**Reference book:**

Technological English Translation, Zhao Xuan, Zheng Yangcheng, Foreign Language Instruction and Research Press

**Prerequisite**: Basic English, Theory and Practice of Translation

**Interpretation Theory and Practice (2 credits)**

**Course code**: b2021018

**Suitable majors**: English

**Instructor**: Li Zhujun, Wang Yin

**Brief introduction:**

Th course helps the students understand the features and standards of consecutive interpretation and the requirements on interpreters, master the necessary interpretation theories and skills, cultivate their good language sense and elementary language conversation ability, cultivate their ability to accumulate knowledge continuously and collect new terms randomly, cultivate their memory and noting ability, cultivate their good language habit, lay a solid language basis, broaden their vision and learn some specialty knowledge, so as to improve their comprehensive cultural quality. The course contents include touring, PE, education, woman and child, senior citizen and family, population, nation, religion, healthcare, industry, agriculture, foreign trade, scientific technology, economic development and reform and opening up, environmental protection, foreign policy, culture and others. The on-class training includes the English-Chinese interpretation skills, text exercise and reaction exercise, interpreting note-taking exercise.

**Reference book:**

Instruction of Modern Chinese-English Interpretation, Wu Bing, Foreign Language Instruction and Research Press

**Cross-cultural Communication (2 credits)**

**Course code**: b2021019

**Suitable majors**: English

**Instructor**: Wang Lu, Qiao Liqing, Wang Shiyu and others

**Brief introduction:**

This course is a basic compulsory specialty course for the undergraduates majored in English, with the objective to cultivate their cross cultural communication sense and ability. The course focusing on the language, culture and cross-cultural communications and other topics or cases, improves their English application ability, enhances their sensibility of cultural difference and improves their cross-cultural adaptability during foreign communications, so as to improve their cross-cultural communication ability through different kinds of on-class activity and approachable instruction.

**Reference book:**

Introduction to Cross-cultural Communication (English Version), Dou Wenling, University of International Business and Economics Press

**Prerequisite**: Introduction to English-speaking Country, Western Society and Culture

**History and Anthology of US Literature (2 credits)**

**Course code**: b2021020

**Suitable majors**: English

**Instructor**: Xiao Huifang

**Brief introduction:**

History and Anthology of US Literature is a specialty course for the seniors majored in English. The course aims to help the students master the formation and development of US literature, understand the school of literature, the typical writer and classic works of different historic periods in US, improve their sensible understanding of literature, cultivate their literary attainments, explore their cultural vision, and improve their literature appreciation ability.

**Reference book:**

History and Anthology of US Literature, Liu Cunbo, Higher Education Press

**Prerequisite**: Basic English

**Business Translation (2 credits)**

**Course code**: b2021021

**Suitable majors**: English

**Instructor**: Wang Yin, Ling Wenhua

**Brief introduction:**

This specialty course for English majors focuses on the cultivation of students’ English translation ability in business environment. The course introduces the basic translation types, methods, rules and skills for the foreign business promotion and communication of international enterprises, so as to cultivate their ability to translate business texts with common skills under business environment through a large amount of case trainings with the background of business knowledge and actual English business documents. The students are required to master the English expression of business terms, understand the style and language mode of international business English including the style and language features of business English, the language mode and writing methods of international business writing and skillfully write business English letters and documents, make business communications and negotiations with foreign businessmen, and master the basic knowledge of international business especially the international trade knowledge.

**Reference book:**

Instruction of Business English Translation, Wang Yingqiu, Beijing Institute of Technology Press

**Prerequisite:** Theory and Practice of International Trade

**Business Communication (2 credits)**

**Course code**: b2021022

**Suitable majors**: English

**Instructor**: Wang Lu, Wu Huangzhi, Tian Hua

**Brief introduction:**

This course aims to help the students understand the basic theories and skills of business communication, get familiar with the related contents, modes and methods of business communication, improve their motivation and team spirit through the cross-cultural communication cases and interactive communication, cultivate their communication sensibility and the ability to communicate in English, make international business communications with learned contents skillfully, improve their cultural sensibility under the background of globalization, master the related skills of business communication and make communications well in English in international business activities, laying a basis for the employment and development in the future.

**Reference book:**

Business Communication (English Version), Wang Yanxi, University of International Business and Economics Press

**Business Writing (2 credits)**

**Course code**: b2021023

**Suitable majors**: English

**Instructor**: Wu Yue, Xu Yan

**Brief introduction:**

Business Writing is a basic compulsory specialty course for the juniors majored in English (including business English and business translation), aiming to improve their cross-cultural business communication ability in written English based on the business English knowledge. Business English writing ability is a key skill in the business environment and a key factor to the cultivation of core competitiveness of students majored in English in accordance with the objective of knowledge-type highly skillful innovative talents cultivation. The course plays an important role in the improvement of business English skills, acquisition of certificate and preparation for the specialty course in senior grade and effective improvement of employment rate.

**Reference book:**

Applied English Writing, Zhou Bangyou, Donghua University Press

**Prerequisite**: Basic Writing

**Western Society and Culture (2 credits)**

**Course code**: b2021024

**Suitable majors**: English

**Instructor**: Fan Xiaoqing, Li Liping

**Brief introduction:**

Western Society and Culture is a basic specialty course for the English majors of Foreign Language School. The course objective is to help the students have some understanding of the cultures and societies of the western countries, including the field of literature, history, science, politics, society, architecture, art and others, laying a basis for the future learning and study of following courses. Thus, this course can not only help the students broaden their vision, know the important role of learning culture in language learning and improve their elementary cultural sensibility and cross-cultural communication sensibility. Meanwhile, the course cultivates the students’ sense of comparing the Chinese culture and western culture and improves their critical thinking ability.

**Reference book:**

Elementary Introduction of European Culture, Wang Zuoliang, Foreign Language Instruction and Research Press

**History and Anthology of English Literature (2 credits)**

**Course code**: b2021025

**Suitable majors**: English

**Instructor**: Xu Ju, Xiao Huifang

**Brief introduction:**

History and Anthology of US Literature is a specialty course for the seniors majored in English. The course aims to help the students master the formation and development of US literature, understand the the school of literature, the typical writer and classic works of different historic periods in US, improve their sensible understanding of literature, cultivate their literary attainments, explore their cultural vision, and improve their literature appreciation ability.

**Reference book:**

History and Anthology of English Literature, Liu Cunbo, Higher Education Press

**Prerequisite**: Basic English

**Comparison of English and Chinese Language (2 credits)**

**Course code**: b2021026

**Suitable majors**: English

**Instructor**: Yang Renmin, Xu Ju

**Brief introduction:**

This course focusing on the syntax difference between two languages, introduces the differences and similarities of expression of two languages, and discusses the advantages and limits of two languages; meanwhile, the students are required to master the method to retell the Chinese in veritable English or retell English in veritable Chinese and have the bilingual conversational ability. The course pays attention to the cultivation of the students’ understanding of the difference and similarities of Chinese and English, and their ability of English-Chinese conversational ability and communication ability in English. The students are required to select accurate instructional and communication methods in accordance with the difference between two languages in the future.

**Reference book:**

Comparison of English and Chinese Comparison, Lian Shuneng, Higher Education Press

**Prerequisite**: Modern Chinese

**Introduction to English Lexicology (2 credits)**

**Course code**: b2021027

**Suitable majors**: English

**Instructor:** Li Liping, Wang Xiaoping

**Brief introduction:**

English Lexicology is a course instructed by theory of modern linguistics with the research object of English lexicon. The contents include the basic knowledge, morphological structure, compositional mode, meaning and semantic relationship, origin and development of English lexicon, the change of meaning of words, the idiom and dictionary knowledge and others. The English lexicology is directed by the systematic and overall concept of English vocabulary and makes diachronic and synchronic research on the English vocabulary with theoretical instruction and case analysis.

**Reference book:**

Instruction of English Lexicology, Wang Rongpei, Lu Xiaojuan, Shanghai Foreign Language Education Press

**Introduction to English-speaking Countries (2 credits)**

**Course code**: b2021028

**Suitable majors**: English

**Instructor**: Wang Lu, Wang Zhuo, Li Liping and others

**Brief introduction:**

This course is a basic selective specialty course for the undergraduates in the School of Foreign Languages. The course objective is to help the students have a brief understanding of the history, geography, politics, culture and economy of the two main English-speaking countries US and UK. Meanwhile, through instruction and reading of a large amount of related documents, the course helps the students to review the common English vocabulary, grammar phenomenon and sentence expression structure, so as to improve the students’ sensibility and tolerance of cultural difference and flexibility of processing cultural difference, and improve their cross-cultural communication ability.

**Reference book:**

Brief introduction to English-speaking Countries, Wang Enming, Shanghai Foreign Language Education Press

**Basic English Writing (2 credits)**

**Course code**: b2021029

**Suitable majors**: English

**Instructor**: Wu Yue, Xu Yan

**Brief introduction:**

Basic English Writing is a practical course for the undergraduates majored in English, which pays attention to the instruction of basic theory and the cultivation of professional skills and plays a long-lasting and effective role in the whole specialty course system. This course has been set for the sophomores for a long time, laying a good and solid basis for the writing of undergraduates majored in English, and promoting the improvement of reading analysis level and logic thinking ability of the students.

Basic English Writing aims to train and improve the students’ English writing level, helping the students master the key points of fluent English sentences writing with certain rhetoric and writing skills. Besides, through thoughts trainings, the course progressively improves the students’ analytic ability, imaginary and critical thinking ability, writing ability, adaptability and cross-cultural communication ability. Starting from sentence structure to the paragraph writing skills, the course provides trainings of different literary forms and text structure.

**Reference book:**

Basic English Writing, Wu Zunmin, Wang Xing, Beijing Normal University Press

**English Instruction Theory and Method (2 credits)**

**Course code**: b2021030

**Suitable majors**: English

**Instructor**: Zhou Zhou, Fan Xiaoqing

**Brief introduction:**

This course stresses the instruction of English linguistic theory and basic theory of English curriculum and teaching theory and the instructional design in high school by combining theory and practice. The students are required to master the basic rules, instructional methods and skills of English instruction in high school and apply the skills into the practice of English instruction in high school. The objective of English Instructional Theory and Practice is: 1. Help the students understand the theory and methods of English instruction systematically; 2. Train the students to select accurate instruction methods and have practical ability of effective English instruction. The course introduces the English linguistic theory and instructional theory; meanwhile, it pays attention to the practical instruction of linguistic skills and knowledge and the improvement of the English instructional practical ability of the students in accordance with the latest development of basic educational course revolution. English Instructional Theory and Practice is a theoretical and practical course, which introduces the related theory and methods of English instruction and cultivates the instructional practical ability of the students.

**Reference book:**

Teaching & Learning English as a Foreign Language, Liu Xiaoling, Central South University Press

**Audio-visual-oral English I (2 credits)**

**Course code**: b2021031

**Suitable majors**: English

**Instructor**: Ling Wenhua, foreign instructor

**Brief introduction:**

Listening, speaking, reading and writing are the four basic skills of English learning, and audio-visual-oral English is the most direct and effective mode, which is beneficial to the improvement of effectiveness of listening and motives of speaking. This course aims to improve their listening and speaking ability of English. Through the use of multimedia, Internet and other modern instructional tools, the students learn and appreciate the original version of foreign sitcom, short plays and movies so as to improve their interest on the English study. The main instructional objectives of the course are as follows: 1. Train the students’ listening skills and sensitivity of English language, cultivate their ability of listening comprehension, phoneme identification, detail mastering and meaning summary; 2. Train the students’ rapid reaction to numbers, time, location, name and direction; 3. Train the students’ oral ability, requiring the students to speak English fluently with the provision of cultural background and meet the TEM4 requirements on listening and speaking, laying a solid basis for the study in senior grades.

**Reference book:**

New Instruction of Audio-visual-oral English (3rd edition), He Lianzhen, Shanghai Foreign Language Instruction and Research Press

**Prerequisite**: Basic English, English Phonetics, Cross-cultural Communication

**Audio-visual-oral English II (4 credits)**

**Course code**: b2021032

**Suitable majors**: English

**Instructor**: Ling Wenhua, foreign instructor

**Brief introduction:**

Listening, speaking, reading and writing are the four basic skills of English learning, and audio-visual-oral English is the most direct and effective mode, which is beneficial to the improvement of effectiveness of listening and motives of speaking. This course aims to improve their listening and speaking ability of English. Through the use of multimedia, Internet and other modern instructional tools, the students learn and appreciate the original version of foreign sitcom, short plays and movies so as to improve their interest on the English study. The main instructional objectives of the course are as follows: 1. Train the students’ listening skills and sensitivity of English language, cultivate their ability of listening comprehension, phoneme identification, detail mastering and meaning summary; 2. Train the students’ rapid reaction to numbers, time, location, name and direction; 3. Train the students’ oral ability, requiring the students to speak English fluently with the provision of cultural background and meet the TEM4 requirements on listening and speaking, laying a solid basis for the study in senior grades.

**Reference book:**

Audio-visual-oral English for International Communication 3, Becky Tarver Chase Kristin L. Johannsen Paul Maclntyre, Ji Peiying, Li Shujing, Foreign Language Instruction and Research Press

**Prerequisite**: Basic English, English Phonetics

**Audio-visual-oral English III (2 credits)**

**Course code**: b2021033

**Suitable majors**: English

**Instructor**: Ling Wenhua, foreign instructor

**Brief introduction:**

Listening, speaking, reading and writing are the four basic skills of English learning, and audio-visual-oral English is the most direct and effective mode, which is beneficial to the improvement of effectiveness of listening and motives of speaking. This course aims to improve their listening and speaking ability of English. Through the use of multimedia, Internet and other modern instructional tools, the students learn and appreciate the original version of foreign sitcom, short plays and movies so as to improve their interest on the English study. The main instructional objectives of the course are as follows: 1. Train the students’ listening skills and sensitivity of English language, cultivate their ability of listening comprehension, phoneme identification, detail mastering and meaning summary; 2. Train the students’ rapid reaction to numbers, time, location, name and direction; 3. Train the students’ oral ability, requiring the students to speak English fluently with the provision of cultural background and meet the TEM4 requirements on listening and speaking, laying a solid basis for the study in senior grades.

**Reference book:**

Audio-visual-oral English for International Communication 3, Becky Tarver Chase Kristin L. Johannsen Paul Maclntyre, Ji Peiying, Li Shujing, Foreign Language Instruction and Research Press

**Prerequisite**: Basic English, English Phonetics

**Audio-visual-oral English IV (2 credits)**

**Course code**: b2021032

**Suitable majors**: English

**Instructor**: Ling Wenhua, foreign instructor

**Brief introduction:**

Listening, speaking, reading and writing are the four basic skills of English learning, and audio-visual-oral English is the most direct and effective mode, which is beneficial to the improvement of effectiveness of listening and motives of speaking. This course aims to improve their listening and speaking ability of English. Through the use of multimedia, Internet and other modern instructional tools, the students learn and appreciate the original version of foreign sitcom, short plays and movies so as to improve their interest on the English study. The main instructional objectives of the course are as follows: 1. Train the students’ listening skills and sensitivity of English language, cultivate their ability of listening comprehension, phoneme identification, detail mastering and meaning summary; 2. Train the students’ rapid reaction to numbers, time, location, name and direction; 3. Train the students’ oral ability, requiring the students to speak English fluently with the provision of cultural background and meet the TEM4 requirements on listening and speaking, laying a solid basis for the study in senior grades.

**Reference book:**

Advanced Media Audio-visual-oral English (including 2 DVD discs), Zhang Li, Foreign Language Instruction and Research Press

**Prerequisite**: Basic English, English Phonetics

**Introduction to English Stylistics (2 credits)**

**Course code**: b2021035

**Suitable majors**: English

**Instructor**: Xu Yan

**Brief introduction:**

Introduction to English Stylistics is a basic specialty course for the major of English Literature, an interdiscipline introducing the research achievements on linguistics and literature criticism theory and dialectical relationship between text forms and contents. The course objective is to help the students have a macro understanding of the historical development and current status of the stylistics. Through this course, the students are able to systematically understand the historical development of stylistics and the latest developments, carry out linguistic practice with related theory of stylistics and have a comprehensive understanding and mastering of theoretical and practical stylistics.

**Reference book:**

Instruction of English Stylistics, Xu Youzhi, Higher Education Press

**English Rhetorics (2 credits)**

**Course code**: b2021036

**Suitable majors**: English

**Instructor**: Wu Yue, Xu Yan

**Brief introduction:**

English rhetorics is a course combining theory and practice, requiring the students apply the basic translation methods and skills into the practice and daily learning or writing with the instruction of basic theory, methods and skills of rhetorics. The main contents of English rhetorics include: the introduction and features of long sentences, the noun phrase and adverb phrase in simple sentences, the combined use of compound sentence, complex sentence, and compound and complex sentences, the introduction and features of left-branching sentences, the introduction and features of right-branching sentences, the introduction and features of mid-branching sentences, parallel sentence, parallel control and chiasmus, omission, application of parenthesis, application of multiple conjunction, annotation method, repeated rhetorics, binominal and trinomial rhetorics, climax and anticlimax, contradictory rhetorics, lexical selection, meaning, type, method and function.

**Reference book:**

Practical English Rhetorics, Fan Zumin, Science Press

**Prerequisite**: Basic Writing

**Academic English Writing (2 credits)**

**Course code**: b2021037

**Suitable majors**: English

**Instructor**: Wang Xiaoping, Wu Yue

**Brief introduction:**

This course is set for undergraduates majored in foreign trade English, which is an extension and improvement of basic writing courses. The previous English writing instruction pays attention to the training of professional writing skills like wording and phrasing, composition planning and others; and the applied writing instruction is limited to simple letters and notes. After graduation, the students usually don’t know how to write an analysis report, which obviously contradicts with the objective of cultivating complex applied international talents. The course setting meets the society’s practical needs of English talents and students, trying to cultivate the students’ ability to write thesis through systematic instruction, so that the students are able to master the basic skills of topic selection, document collection, analysis and summary, style features, formats and specifications. The course combines theory with practice and requires the students to submit the thesis draft.

**Reference book:**

MLA Scientific Thesis Writing Conventions (7th edition) (Paperback) (9787544621984), US Modern Language Association, Shanghai Foreign Language Education Press

**Prerequisite**: Basic Writing

**English Grammar and Discourse (2 credits)**

**Course code**: b2021038

**Suitable majors**: English

**Instructor**: Hong Shisong, Zhou Zhou

**Brief introduction:**

This course is a compulsory course for the freshman and sophomore majored in English. Through this course, on one hand, the students are able to review the learned basic grammar knowledge; on the other hand, the students are able to understand incompletely mastered grammar phenomenon through a large amount of exercises. Through this course, the students are able to systematically understand the overall knowledge of English grammar—morphology, syntax and discourse, and skillfully master the learned knowledge, and try not to make grammar errors in practical application. Understanding of discourses

**Reference book:**

New Instruction of English Grammar (5th edition), Zhang Zhenbang, Shanghai Foreign Language Education Press

**English Phonetics (2 credits)**

**Course code**: b2021039

**Suitable majors**: English

**Instructor**: Zhou Zhou, Li Zhujun

**Brief introduction:**

English Phonetics is a basic specialty course for English majors, which is the basis for English learning. Through a large amount of pronunciation exercises, listening exercises and reading exercise, the course introduces the theoretical knowledge of English phonetics and helps the students master the correct pronunciation of phonemes and learn English pronunciation well progressively so as to improve the oral and listening ability of English and lay a solid basis for the learning of English language.

**Reference book:**

English Phonetics, Peter Ladefoged, Peking University Press

**Introduction to Linguistics (2 credits)**

**Course code**: b2021040

**Suitable majors**: English

**Instructor**: Li Jinfeng, Wang Xiaoping

**Brief introduction:**

This course is a basic selective specialty course for the undergraduates in the School of Foreign Languages. The course objective is to cultivate their ability to analyze the general phenomenon and solve irregular problems in the process of language communication and application, with the theoretical knowledge of linguistics. Thus, the course introduces the theoretical knowledge and main points of view generally accepted by the research field of linguistics. The course also explains on some methods, standards and tools usually applied by analysis of linguistic problems. The course requires the students majored in English to understand some basic linguistic theory and concept, and the most influential linguistic theory and principle, so as to strengthen their reasonable understanding of the human language and have the ability to explain linguistic phenomenon and solve detailed linguistic problems with the applications of linguistic theory, and improve their linguistic accomplishments and foreign language proficiency level.

**Reference book:**

A New Concise Course in Linguistics for Students of English, Dai Weidong, He Zhaoxiong, Shanghai Foreign Language Education Press

**Prerequisite**: Basic English 1-4, Advanced English 1-2, College English Grammar, English Chinese Translation and others

**Introduction to Chinese Culture (2 credits)**

**Course code**: b2021041

**Suitable majors**: English

**Instructor**: Li Jinfeng, Li Liping, Zhang Jun

**Brief introduction:**

Introduction to Chinese Culture is a new cultural quality educational course of cross discipline and cross majors. Most of the students are senior grade students for English majors. The course is a new interdisciplinary course, covering knowledge of multiple disciplines, like history, characters, philosophy, religion, literature, opera, music, dancing, drawing, calligraphy, scientific technology, architecture, tourism, catering, craftsmanship, customs and others. The course is a selective specialty course, which introduces the basic knowledge and spirit of Chinese traditional culture, aiming to explore the students’ vision of eastern and western culture, expand their knowledge of Chinese culture and improve their ability to join international cultural and communication activity. Meanwhile, the course aims to enhance the students’ love to Chinese culture and the Chinese nation, and help them build up correct values in multiple cultural patterns.

**Reference book:**

Chinese Culture, Chang Junyue, Huo Yuehong, Peking University Press

**Second Foreign Language (English) I (4 credits)**

**Course code**: b2021042

**Suitable majors**: Japanese

**Instructor**: Liang Xue, Wang Zhuo, Xia Yiwen

**Brief introduction:**

This course is a basic compulsory specialty course for the major of Japanese in the school of foreign language. The main course objective is to help the students have basic linguistic knowledge of pronunciation, vocabulary and grammar and the ability to understand and construct sentences with the above knowledge, so as to improve their English proficiency. The course pays attention to the cultivation of students’ reading ability, meanwhile, attaches importance to the training of elementary listening, speaking and writing ability, so as to improve their comprehensive English ability. The course instructs the students to do extensive reading and join other linguistic communication activities with the learned English knowledge and skills. The instruction stresses the improvement of students’ linguistic skills, understanding and expression of communication intention, and the cultivation of cross-cultural communication. Through study, the students are able to master the methods and skills of foreign language, learn Japanese better and have good language learning habit with good Chinese and Japanese language proficiency.

**Reference book:**

Self-edited

**Second Foreign Language (English) II (2 credits)**

**Course code**: b2021043

**Suitable majors**: Japanese

**Instructor**: Liang Xue, Wang Zhuo, Xia Yiwen

**Brief introduction:**

This course is a basic compulsory specialty course for the major of Japanese in the school of foreign language. The main course objective is to help the students have basic English reading ability and elementary listening, speaking and writing ability and make simple communications in English. As the instruction of second foreign language, this course tries to lay a good basis for the students’ language ability, improve their literature quality, helping them to broaden their cultural vision, improve their learning motivation, and have a deep understanding of the current events and culture of US and UK.

**Reference book:**

Self-edited

**Prerequisite**: Second Foreign Language (English) I

**Advanced Japanese I (6 credits)**

**Course code**: b2021044

**Suitable majors**: Japanese

**Instructor**: Li Lina, Zhao Feng, Zuo Wenhai and others

**Brief introduction:**

Advanced Japanese is a course training the students’ comprehensive Japanese ability, which is set for two semesters. Through reading and analyzing extensive materials, the students are required to broaden their vision, strengthen their understanding of the society and human life, cultivate their analytic appreciation ability of famous works, logic thinking and independent thinking ability and lexical critical ability, so as to improve their Japanese language proficiency.

**Reference book:**

Comprehensive Instruction of Japanese 5/6, Tan Jinghua, Shanghai Foreign Language Educational Press

**Advanced Japanese II (6 credits)**

**Course code**: b2021045

**Suitable majors**: Japanese

**Instructor**: Zhao Feng, Li Lina, Zuo Wenhai and others

**Brief introduction:**

Advanced Japanese is a course training the students’ comprehensive Japanese ability, which is set for two semesters. Through reading and analyzing extensive materials, the students are required to broaden their vision, strengthen their understanding of the society and human life, cultivate their analytic appreciation ability of famous works, logic thinking and independent thinking ability and lexical critical ability, so as to improve their Japanese language proficiency.

**Reference book:**

Comprehensive Instruction of Japanese 5/6, Tan Jinghua, Shanghai Foreign Language Educational Press

**Prerequisite**: Advanced Japanese I

**Introduction to International Finance (2 credits)**

**Course code**: b2021046

**Suitable majors**: Japanese

**Instructor**: Zhu Haoyu, Zuo Wenhai

**Brief introduction:**

Introduction to International Finance is an important basic course for the junior majored in Japanese, aiming to help the students master the necessary economic and financial knowledge of economic trade. Through the detailed explanation on key terms like GNP, deindustrialization, Japan’s bubble economy, the students are required to progressively master the operational system of economic activity and international finance, broaden their vision, increase their economic Japanese vocabulary and lay a basis for the overall improvement of their Japanese proficiency.

**Reference book:**

Self-edited Textbook, Zhu Haoyu

**Basic Japanese I (8 credits)**

**Course code**: b2021047

**Suitable majors**: Japanese

**Instructor**: Quan Yushi, Wu Ting, Zhao Feng

**Brief introduction:**

Basic Japanese is set for four semesters. Through the systematic instruction of basic knowledge of Japanese, explanation and analysis of text, strict training of basic skills, the students are required to progressively improve their reading comprehension ability, understand the expression way and features of different styles of Japanese, expand their vocabulary, get familiar with the common Japanese sentences and cultivate their skillful application of listening, speaking, reading and writing skills.

**Reference book:**  
New Japanese (Revised Edition), Zhou Ping, Chen Xiaofeng, Shanghai Foreign Language Education Press

**Basic Japanese II (8 credits)**

**Course code**: b2021048

**Suitable majors**: Japanese

**Instructor**: Quan Yushi, Wu Ting, Zhao Feng

**Brief introduction:**

Basic Japanese is set for four semesters. Through the systematic instruction of basic knowledge of Japanese, explanation and analysis of text, strict training of basic skills, the students are required to progressively improve their reading comprehension ability, understand the expression way and features of different styles of Japanese, expand their vocabulary, get familiar with the common Japanese sentences and cultivate their skillful application of listening, speaking, reading and writing skills.

**Reference book:**  
New Japanese (Revised Edition), Zhou Ping, Chen Xiaofeng, Shanghai Foreign Language Education Press

**Prerequisite**: Basic Japanese I

**Basic Japanese III (8 credits)**

**Course code**: b2021049

**Suitable majors**: Japanese

**Instructor**: Quan Yushi, Wu Ting, Zhao Feng

**Brief introduction:**

Basic Japanese is set for four semesters. Through the systematic instruction of basic knowledge of Japanese, explanation and analysis of text, strict training of basic skills, the students are required to progressively improve their reading comprehension ability, understand the expression way and features of different styles of Japanese, expand their vocabulary, get familiar with the common Japanese sentences and cultivate their skillful application of listening, speaking, reading and writing skills.

**Reference book:**  
New Japanese (Revised Edition), Zhou Ping, Chen Xiaofeng, Shanghai Foreign Language Education Press

**Prerequisite**: Basic Japanese II

**Basic Japanese IV (8 credits)**

**Course code**: b2021050

**Suitable majors**: Japanese

**Instructor**: Quan Yushi, Wu Ting, Zhao Feng

**Brief introduction:**

Basic Japanese is set for four semesters. Through the systematic instruction of basic knowledge of Japanese, explanation and analysis of text, strict training of basic skills, the students are required to progressively improve their reading comprehension ability, understand the expression way and features of different styles of Japanese, expand their vocabulary, get familiar with the common Japanese sentences and cultivate their skillful application of listening, speaking, reading and writing skills.

**Reference book:**  
New Japanese (Revised Edition), Zhou Ping, Chen Xiaofeng, Shanghai Foreign Language Education Press

**Prerequisite**: Basic Japanese III

**Introduction to Japanese Popular Culture (2 credits)**

**Course code**: b2021051

**Suitable majors**: Japanese

**Instructor**: Pei Fengxue, Zuo Wenhai

**Brief introduction:**

Introduction to Japanese Popular Culture focuses on the features of Japanese popular culture and the psychological changes of Japanese people, and introduces the history, society, religion, literature, art, education, custom, technology and others of Japan. The course objective is to help the students master the main features of Japanese culture, and understand the internal and external factors of revoltion of “human and objects” in the Japanese society, the characters of Japanese nations and the living sensibility of Japanese people.

**Reference book:**

Post-war Japanese Popular Culture, Nagai Yoshikazu, Social Science Literature Press

**Introduction to Japan (2 credits)**

**Course code**: b2021052

**Suitable majors**: Japanese

**Instructor**: Pei Fengxue, Lu Zheng

**Brief introduction:**

Introduction to Japan is a course aiming to cultivate the students’ working ability based on the comprehensive knowledge of learned courses. The course contents includes all the aspects of Japan, including geography, history, politics, economy, culture, education, custom and others. the course is beneficial to the communication work in the field of Sino-Japanese politics, economy, culture and education. Through this course, the students are able to comprehensively understand the Japanese society, broaden their academic research field and improve their adaptability in international activities.

**Reference book:**

Introduction to Japan (3rd edition), Liu Xiaoming, Nankai University Press, 2013

**Review of Japanese Famous Works (2 credits)**

**Course code**: b2021053

**Suitable majors**: Japanese

**Instructor**: Zuo Wenhai, Pei Fengxue

**Brief introduction:**

This course is a course combining literature theory and practice for the students majored in Japanese. The course contents include basic Japanese literature knowledge, the theoretical part of reading translation and practical part of famous works analysis, introduction and report submission.

This course starting from the reality of Japanese major in China, gives an overall introduction of modern Japanese literature, introduces the

**Japanese Dialogue I (3 credits)**

**Course code**: b2021055

**Suitable majors**: Japanese

**Instructor**: Zhu Qian, Xu Lijia, Quan Yushi

**Brief introduction:**

This course is set for three semesters focusing on the oral Japanese expression, which requires the students to (1) clearly express their thoughts in Japanese, and apply communication strategy to solve the difficulties when they are not sure of the word or structure; (2) clearly master the communication function like asking, requesting, suggestion and advice; (3) build up the confidence of speaking Japanese and cultivate their interest on the Japanese; (4) progressively speak Japanese accurately and fluently.

**Reference book:**

Intermediate Instruction of New Japanese Dialogue, New World Japanese Instructional and Research Group, East China University of Science and Technology Press

**Japanese Dialogue II (3 credits)**

**Course code**: b2021056

**Suitable majors**: Japanese

**Instructor**: Quan Yushi, Zhu Qian, Xu Lijia

**Brief introduction:**

This course is set for three semesters focusing on the oral Japanese expression, which requires the students to (1) clearly express their thoughts in Japanese, and apply communication strategy to solve the difficulties when they are not sure of the word or structure; (2) clearly master the communication function like asking, requesting, suggestion and advice; (3) build up the confidence of speaking Japanese and cultivate their interest on the Japanese; (4) progressively speak Japanese accurately and fluently.

**Reference book:**

Intermediate Instruction of New Japanese Dialogue, New World Japanese Instructional and Research Group, East China University of Science and Technology Press

**Japanese Dialogue III (3 credits)**

**Course code**: b2021057

**Suitable majors**: Japanese

**Instructor**: Xu Lijia, Zhu Qian, Quan Yushi

**Brief introduction:**

This course is set for three semesters focusing on the oral Japanese expression, which requires the students to (1) clearly express their thoughts in Japanese, and apply communication strategy to solve the difficulties when they are not sure of the word or structure; (2) clearly master the communication function like asking, requesting, suggestion and advice; (3) build up the confidence of speaking Japanese and cultivate their interest on the Japanese; (4) progressively speak Japanese accurately and fluently.

**Reference book:**

Intermediate Instruction of New Japanese Dialogue, New World Japanese Instructional and Research Group, East China University of Science and Technology Press

**Reading and Translation of Japanese Foreign Trade Document (2 credits)**

**Course code**: b2021058

**Suitable majors**: Japanese

**Instructor**: Lu Zheng, Zuo Wenhai

**Brief introduction:**

Reading and Translation of Japanese Foreign Trade Document is a course instructing students on Japanese trade letters and documents and trade negotiation knowledge. The course objective is to help the students learn specialty knowledge of Japanese and firmly master the knowledge of foreign trade, so as to cultivate international complex talents. Right now, the economic communication between Japan and China becomes more and more close; the joint venture becomes more and more active and the communication of letters of trade activity becomes more and more frequent. The students majored in Japanese are necessary to master the Japanese linguistic knowledge and understand the basic Japanese business knowledge. The students are required to master the features of business Japanese, learn to read and translate Japanese foreign trade documents, know the operational procedures, improve practical operational ability to adapt into the requirements of social development.

**Reference book:**

Foreign Trade Business Japanese (Revised Edition), Zhang Xinhua, Ocean University of China Press

**Japanese Grammar I (2 credits)**

**Course code**: b2021059

**Suitable majors**: Japanese

**Instructor**: Lu Zheng, Zhao Feng, Li Lina

**Brief introduction:**

Japanese Grammar is a compulsory course for the major of Japanese. Through two semester’s study, the students are required to have a systematic understanding of the Japanese grammar and meet the TJM4 requirements on grammar application ability, laying a basis for the learning of the following courses. The course contents include: 1. Brief introduction to Japanese (pronunciation, vocabulary, words and others); 2.Japanese lexical usage (auxiliary verb, auxiliary word, conjunction, adverb, interjections and others); 3. Syntax (structure, function and interrelationship of syntagma); 4. Honorific (self-effacing word and others).

**Reference book:**

New Instruction of Japanese Grammar, Pi Xigeng, Shanghai Foreign Language Education Press

**Japanese Grammar II (2 credits)**

**Course code**: b2021060

**Suitable majors**: Japanese

**Instructor**: Li Lina, Lu Zheng, Zhao Feng

**Brief introduction:**

Japanese Grammar is a compulsory course for the major of Japanese. Through two semester’s study, the students are required to have a systematic understanding of the Japanese grammar and meet the TJM4 requirements on grammar application ability, laying a basis for the learning of the following courses. The course contents include: 1. Brief introduction to Japanese (pronunciation, vocabulary, words and others); 2.Japanese lexical usage (auxiliary verb, auxiliary word, conjunction, adverb, interjections and others); 3. Syntax (structure, function and interrelationship of syntagma); 4. Honorific (self-effacing word and others).

**Reference book:**

New Instruction of Japanese Grammar, Pi Xigeng, Shanghai Foreign Language Education Press

**Japanese Reading I (2 credits)**

**Course code**: b2021061

**Suitable majors**: Japanese

**Instructor**: Zhu Qian, Zhao Feng

**Brief introduction:**

Japanese Reading is set for two semesters, with the objective to cultivate their Japanese reading comprehension ability and improve their reading speed, cultivate their ability to observe language and logic thinking ability of hypothetic judgment, analytic summary, reasoning test and others, improve their reading skills, including intensive reading, extensive reading, searching, enlarge their vocabulary and understand linguistic and cultural background information through reading exercises.

**Reference book:**

New Extensive Reading of Japanese, Wang Xiuwen, Li Qingxiang (Japanese), Foreign Language Instructional and Research Press

**Japanese Reading II (2 credits)**

**Course code**: b2021062

**Suitable majors**: Japanese

**Instructor**: Zhu Qian, Zhao Feng

**Brief introduction:**

Japanese Reading is set for two semesters, with the objective to cultivate their Japanese reading comprehension ability and improve their reading speed, cultivate their ability to observe language and logic thinking ability of hypothetic judgment, analytic summary, reasoning test and others, improve their reading skills, including intensive reading, extensive reading, searching, enlarge their vocabulary and understand linguistic and cultural background information through reading exercises.

**Reference book:**

New Extensive Reading of Japanese, Wang Xiuwen, Li Qingxiang (Japanese), Foreign Language Instructional and Research Press

**Business Etiquettes and Communications (2 credits)**

**Course code**: b2021063

**Suitable majors**: Japanese

**Instructor**: Xu Lijia, Zhu Qian

**Brief introduction:**

Business Etiquettes and Communications is a compulsory non-test based course. The course objective is to help the students understand the basic concept of Japanese enterprise operation and management and the basic features of enterprise culture, and master the communication modes and skills of business Japanese through simulation exercises of different business cases. Meanwhile, through a large amount of practical exercise, the students are required to master the basic etiquettes and Japanese honorific expression in business cases and make business activities in Japanese accurately. During the instruction of this course, the course combines the in-class instruction and employment together, theoretical instruction and practical activity together, laying a solid basis for the successful employment and improvement of their core competitiveness.

**Reference book:** Standard Oral Business Japanese, Muheizhenshi, Xiguyou, Dalian University of Science and Technology Press

**Business Applied Writing (2 credits)**

**Course code**: b2021064

**Suitable majors**: Japanese

**Instructor**: Shen Lili, Lu Zheng, Zuo Wenhai

**Brief introduction:**

This is a selective course for the junior undergraduates majored in Japanese. The course objective is to help the students learn applied writing examples, master the commonly used knowledge of applied writing in life and do applied writings correctly in Japanese. The course combines theoretical instruction and practical exercise together, requiring the students to master the applied writing skills of CV, self-promotion (highlights demonstration), recommendation letter, memorandum, small speech, diary and others, understand the meaning and function of common applied writings and write simple common applied writings correctly in accordance with related model essay. This course analyzes, evaluates and compares the related knowledge and function of the questionnaire design at the same time.

**Reference book:**

Business Japanese Writing, Xu Deming, Zhu Haoyu, Dalian University of Science and Engineering Press

**Prerequisite**: Training of Writing Skills I and II

**Practice of Office Skills (1 credit)**

**Course code**: b4021001

**Suitable majors**: English

**Instructor**: part-time instructors

**Brief introduction:**

This course aims to help the students understand the basic theory of office automation and basic knowledge of office facility, get familiar with the office facility and its performance and features, and have good computer application ability and corresponding computer cultural competences through a week’s study. With the speeding up of working rhythm in modern times, the office automation is accepted by people progressively and the office facilities like copier, fax machine, printer, scanner, digital camera and projector become necessary assistant office tools. Through this course, the students are required to master the use and techniques of common office facilities, laying a basis for the adaption into the administrative office work in the future. After the completion of this course, through the operational demonstration and practice, the students shall meet the following requirements:

1. Skillfully master the basic operation of office automation;
2. Master the use and simple maintenance of office automated facility;
3. Skillfully master the use of printer, scanner and graphic editing, use of copier and fax machine.

**Reference book:**

Use and Maintenance of New Modern Office Facility, Yang Hao, South China University of Science and Technology Press

Reference documents:

Use and Maintenance of Modern Office Facility, Tong Jianzhong, Tong Hua, Publishing House of Electronics Industry

**Simulated Operation of International Trade (1 credit)**

**Course code**: b4021002

**Suitable majors**: English

**Instructor**: Cai Yinhua, Wu Huangzhi, Tian Hua

**Brief introduction:**

Simulated Operation of International Trade is a practical course for the major of English, which is an extension of Theory and Practice of International Trade. The course focuses on the basic process of export transaction, with the simulated background of detailed export commodity transaction, introduces the draft of business letters and documents, computation of commodity price, negotiation of transaction conditions, signature of agreement, the shipping and booking of exported goods, the custom declaration and clearance, the approval and modification of letter of credit, making and approval of trade documents and others. The course trains the students to experience the process of commodity export transaction in a simulated international business environment and master the main operational skills of import and export transaction systematically in the practical operational process.

**Reference book:**

Instruction of Simulated Operation of Export Trade, Zhu Wei, Shanghai People’s Publishing House

**Prerequisite**: Theory and Practice of International Trade

**Computer Assistant Translation (1 credit)**

**Course code**: b4021003

**Suitable majors**: English

**Instructor**: Li Zhujun, Hao Liping

**Brief introduction:**

This course mainly introduces the basic concept of computer assistant translation technology, the use of multiple computer assistant translation tools, improve the students’ ability to provide different kinds of language service like translations and others in technological environment, and help them understand the language service work in informationalization times. The course covers the basic introduction of modern language service, the basic concept of translation technology, the information environment and information technology in the execution process of language service projects, how to assist translation with e-dictionary, Internet resources and corpus, the theory and practice of computer assistant tool in narrow and broad sense, quality evaluation of translation, cooperative translation project and translation management. The course is beneficial to the students’ understanding of the modern language service industry, improvement their application ability of all kinds of computer assistant translation tools and improvement of their efficiency of different language service work including translation.

**Reference book:**

Computer Assistant Translation, Qian Duoxiu, Foreign Language Instruction and Research Press

**Prerequisite**: Theory and Practice of Interpretation

**Media English Reading (2 credits)**

**Course code**: b4021004

**Suitable majors**: English

**Instructor**: Li Liping, Hong Shisong

**Brief introduction:**

This course selects articles from different famous English newspapers or magazines reflecting the modern international society, covering the field of culture, art, technology, economy, medicine, education and others, providing the materials in modern English and a chance for the students to understand western society. The course aims to improve the reading and comprehension ability of English newspapers and English news for students of English majors or majors related to international affairs, improve their sense of problems and research, and improve their self-learning ability, innovative ability and critical thinking ability.

**Reference book:**

Media English Reading, Zhang Zhuo, Suzhou University Press

**Business Etiquette (1 credit)**

**Course code**: b4021005

**Suitable majors**: English

**Instructor**: Wu Huangzhi, Tian Hua

**Brief introduction:**

Business Etiquette is a practical course, aiming to help the students master the basic skills of PR etiquettes and understand basic requirements or principles of PR etiquettes, so as to make weighting effects for the employment in the future. The course requires the students to master the related contents of business etiquettes skillfully in oral English and body language. The basic requirements of the course are as follows: understand the basic definition, scope and principle of business etiquettes; understand and master the related technologies of business etiquettes in cross-cultural business activities; master the appropriation principle of body language expression in business activity; master the common business etiquette English vocabulary and basic expressions; have the ability of business etiquette communications in English; have the ability to express the basic theory and practice of business etiquette in English; have the ability to make business etiquette activities with learned knowledge.

**Reference book:**

English Instruction of International Business Etiquette, Zhang Yu, Peking University Press

**Prerequisite**: Basic English

**Simulated Business Negotiation (1 credit)**

**Course code**: b4021006

**Suitable majors**: English

**Instructor**: Tian Hua, Wu Huangzhi

**Brief introduction:**

With the further opening up and China’s entrance into WTO, the international trade and investment business develops rapidly and international business negotiation happens more and more frequently. The course is set to meet the urgent needs of the society, especially the foreign trade companies and international companies on the business negotiation talents. The course basically covers the important contents of each aspect of international business negotiation, especially the different kinds of negotiation projects or problems in contemporary enterprise business activities, including the import and export price negotiation, bidding negotiation, settlement mode negotiation, financing negotiation, agent business negotiation, mergering projects negotiation and others. The course instruction focuses on the related knowledge, negotiation skills, common sentences and terms used in all kinds of negotiation projects with targets and practicability.

**Reference book:**

Practical Business Negotiation English, Zhu Wenzhong, Zhou Xingying, University of International Business and Economics Press

**Prerequisite:** Practice of International Trade

**Practical Translation Workshop (1 credit)**

**Course code**: b4021007

**Suitable majors**: English

**Instructor**: Hao Liping, Li Zhujun

**Brief introduction:**

With the objective to cultivate professional translators, the course provides the students a chance to translate many different real source language texts, so as to fully understand the translation process and procedures (like text analysis, pre-translation editing, translation operation, post-translation editing, revision and proofreading, skillfully apply the translation reference tools, master the translation knowledge and translation skills, improve their ability to identify and solve translation problems with translation strategy accurately, improve their ability to complete translation projects or finish translation tasks independently or collaboratively, and get the translation experiences and qualification.

**Reference book:**

Translation Workshop (Chinese to English), Li Ming, Wuhan University Press

**Literature Reading (2 credits)**

**Course code**: b4021008

**Suitable majors**: English

**Instructor**: Wang Xiaoping, Wu Yue

**Brief introduction:**

The course objective is to instruct the students to understand the concept and classification of literature, learn basic literature searching skills, expand their sensibility of literature application and reading volume, laying a basis for the literature application, writing of literature review and thesis and the improvement of literature reading and application ability after graduation. The course contents focuses on the field of economy and popularized science.

**Prerequisite**: Advanced English

**Practice of English Instruction (2 credits)**

**Course code**: b4021009

**Suitable majors**: English

**Instructor**: Zhou Zhou, Fan Xiaoqing

**Brief introduction:**

This course requires the students to understand the basic history of linguistic research and instructional methods, different schools, different modes and theoretical basis of linguistic instructional theory, history, current status and development trend of China’s foreign language instruction, basic principles of instructional preparation and writing of trail lecturing plan, the changes of relationship between students and teachers and its influences on the in-class instruction management in the background of new course revolution and the accurate application of different class management strategy, the meaning and methods of textbook evaluation and the modification of textbooks, the purpose, standards, principle and methods of instructional evaluation, educational technology and methods, instructional methods, the relationship between instructional effects and efficiency, accurate selection of instructional media, the development history of interactive instructional methods and its advantages or disadvantages, the skillful application of interactive instructional methods to organize English instruction, the function and objective of pronunciation instruction, the basic theory and methods of pronunciation instruction, the function of grammar instruction in foreign language instruction, the basic theory and methods of grammar instruction, the psychological process and feature of lexical learning, the basic strategy of lexical instruction, the basic features of listening comprehension and the basic principle of listening instruction, the basic features of oral English and the task design of oral English, the psychological features and related technological skills of reading, the principles and modes of reading instruction, the activity design of reading instruction, the writing essence and the writing instruction through different activity design, and the meaning or methods of integrated language skills in language instruction.

**Reference book:**

Task-based Language Teaching and Learning, Ellis Rod, Oxford University Press

**Selected Reading and Performance of English Drama**

**Course code**: b4021010

**Suitable majors**: English

**Instructor**: Ling Wenhua, Liu Chang

**Brief introduction:**

This course briefly introduces the western drama, and analyzes the dramatic features and theory of important classical writers and works in the UK and US drama history. The course stresses the features of comprehensive art of drama, combines the theory and practice together and contains education in amusement. In class, the course contents include the introduction of authors and works, the classic drama works, class discussion and appreciation of drama videos. After class, the students are required to search related documents, rehearse part of the dramas, learn, understand and experience English dramas in a joyful way. The course objective is to improve their understanding and appreciation of the English drama language through the learning of selected part of the drama, so as to improve their sensibility of English and cultivate their humanity quality and literature competence through the learning of the relationship between drama and culture. During the instruction, the instructor may recommend some excellent movie works adapted from the US and UK drama, helping the students have a more direct understanding of the US and UK society and culture.

**Reference book:**

Serial Textbook for English Majors in College: Selected Reading of US and UK Drama (including discs), Gao Guangwen, Hu Xiaohua, Chongqing University Press

**Prerequisite**:

Basic English I , Audio-visual-oral English I, Western Society and Culture

**English Speech and Debate (3 credits)**

**Course code**: b4021011

**Suitable majors**: English

**Instructor**: Fan Xiaoqing, Wang Yin

**Brief introduction:**

English Speech and Debate is a practical specialty course for the undergraduates majored in English. In the practical instruction for 3 weeks, the course introduces the basic speech and debate art and technology, stresses the simulation and language lack through practical instructional methods, cultivates the students’ oral expressive ability of fluent expression, logic thinking, reasoning, analysis and summary in English and improves their communication ability and leadership ability. The course contents cover the features of speech language, the structure features of speech draft and the function of non-language factors in speech.

**Reference book:**

Practical Research on English Popular Speech, Fan Xiaoqing, Nanjing Normal University Press

**Graduation Internship and Graduation Design (Thesis) for the Major of English (12 credits)**

**Course code**: b4021012

**Suitable majors**: English

**Brief introduction:**

Graduation thesis is a comprehensive practical instructional step designed in the instructional plan, which cultivates the students’ application ability of the learned knowledge and basic technologies, the ability to analyze and solve practical problems and the elementary scientific research ability through training, so as to meet the cultivation objective for the English talents. The graduation thesis is a systematic training of innovative spirit and English application ability, which pays attention to the following aspects: master the basic English knowledge and the ability to apply English, the ability to investigate, search Chinese and foreign literature and collect documents, the ability of theoretical analysis, design and test plans making, the ability to carry out experimental research and data processing, the ability to analyze, summarize, improve and write scientific thesis, the ability to fluently express thoughts and narrates views in learned foreign language.

**Comprehensive Training of Vocational Ability (2 credits)**

**Course code**: b4021013

**Suitable majors**: English

**Instructor**: Wu Huangzhi, Tianhua

**Brief introduction:**

Based on the need analysis and consideration of the cultivation objective for the major of English, the course cultivates the students’ English pragmatic competence, comprehensive professional quality, adaptability and teamwork collaborative ability, leadership ability, explorative and innovative ability, cross-cultural communication ability and other sustained developing ability for the vocational development needs, with the systematic instructional principles and extended instructional methods, case analysis methods and teamwork instructional methods, in the way of serial lectures given by the experienced management people in the field or enterprise. The course instructs English language skills, specialty theory or knowledge through project design, taking the market and employment field as the labs, and laying a good basis for the students’ employment in the future.

**Prerequisite**: Course and Practice of Language Skills, Business Communication, Business Etiquette

**Simulated Operation of Export Trade (2 credits)**

**Course code**: b4021014

**Suitable majors**: English

**Instructor**: Lu Zheng, Zuo Wenhai

**Brief introduction:**

The course focuses on the basic process of export transaction, with the simulated background of detailed export commodity transaction, introduces the draft of business letters and documents, computation of commodity price, negotiation of transaction conditions, signature of agreement, the shipping and booking of exported goods, the custom declaration and clearance, the approval and modification of letter of credit, making and approval of trade documents and others. The course trains the students to experience the process of commodity export transaction in a simulated international business environment and master the main operational skills of import and export transaction systematically in the practical operational process.

**Reference book:**

Simulated Operation Instruction of Export Trade, Zhu Wei, Cheng Jie, Tan Ying, Shanghai People’s Publishing House

**Japanese Cultural Experience (2 credits)**

**Course code**: b4021015

**Suitable majors**: Japanese

**Instructor**: Zuo Wenhai, part-time instructor

**Brief introduction:**

This course is a practical course for the major of Japanese, covering the Japanese cultural experience, appreciation, field investigation and report making.

The feature of this course emphasizes on the practical ability of the students, instructs the students to understand the difference between Chinese and Japanese culture and learn knowledge from different cultures. Through this course, the students are able to broaden their vision and analyze problems from different points of view.

The course contents include the learning of Japanese cuisine, participation of the baseball competition, the understanding of the popular culture of flower arrangement, learning of Japanese songs and dances, appreciation of Japanese national music and visit the Japanese enterprises, free trade zones and Japanese cultural exhibitions and others. The course provides a chance for the students to experience Japanese culture so as to strengthen their understanding and interest on Japanese learning.

**Reference book:**

Self-edited textbook Japanese Cultural Critics, Zuo Wenhai

**Practice of Japanese Interpretation 1 (2 credits)**

**Course code**: b4021016

**Suitable majors**: Japanese

**Instructor**: Jin Fenghua, Zuo Wenhai

**Brief introduction:**

The course is set for three semesters. Through instructing basic theory, background knowledge and basic skills of interpretation, the students are required to master the basic theory of interpretation and the skills of subject interpretation, learn the memory methods, oral introduction, interpretation note-making and public speech skills, requiring the students to accurately and fluently make Chinese-Japanese interpretation.

**Reference book:**

Practical Chinese Japanese Interpretation, Zhou Dianqing, Dalian University of Science and Technology Press

**Practice of Japanese Interpretation I (2 credits)**

**Course code**: b4021017

**Suitable majors**: Japanese

**Instructor**: Jin Fenghua, Zuo Wenhai

**Brief introduction:**

The course is set for three semesters. Through instructing basic theory, background knowledge and basic skills of interpretation, the students are required to master the basic theory of interpretation and the skills of subject interpretation, learn the memory methods, oral introduction, interpretation note-making and public speech skills, requiring the students to accurately and fluently make Chinese-Japanese interpretation.

**Reference book:**

Practical Chinese Japanese Interpretation, Zhou Dianqing, Dalian University of Science and Technology Press

**Practice of Japanese Interpretation II (2 credits)**

**Course code**: b4021018

**Suitable majors**: Japanese

**Instructor**: Jin Fenghua, Zuo Wenhai

**Brief introduction:**

The course is set for three semesters. Through instructing basic theory, background knowledge and basic skills of interpretation, the students are required to master the basic theory of interpretation and the skills of subject interpretation, learn the memory methods, oral introduction, interpretation note-making and public speech skills, requiring the students to accurately and fluently make Chinese-Japanese interpretation.

**Reference book:**

Practical Chinese Japanese Interpretation, Zhou Dianqing, Dalian University of Science and Technology Press

**Practice of Japanese Language (2 credits)**

**Course code**: b4021019

**Suitable majors**: Japanese

**Instructor**: Gao Yi, Xu Lijia

**Brief introduction:**

Practice of Japanese Language is an important step for the Japanese instruction, which has an important meaning of cultivation of students’ practical ability and innovative thinking ability. Based on the instruction of basic courses, the students are required to meet the requirements of Japanese proficiency examinations with the learned Japanese knowledge. The course includes the training of TJM 4 and TJM8 and the JLPT1 and JLPT2.

**Reference book:**

Serial Instructional Books for the Grade 4 Examination of Foreign Language Majors in College: the Explanations on TJM4 (Revised edition), Serial Instructional Books for the Grade 8 Examination of Foreign Language Majors in College: the Explanations on TJM8 (Revised edition), Xu Huici, Pi Xigeng, Shanghai Foreign Language Education Press

**Japanese Pronunciation Training I (2 credits)**

**Course code**: b4021020

**Suitable majors**: Japanese

**Instructor**: Zhu Qian, Jin Fenghua

**Brief introduction:**

Course objective is to improve the pronunciation level of zero-level beginners of Japanese, help the students understand the basic knowledge and pronunciation rules of Japanese phonetics, laying a basis for the following study of specialty knowledge and especially oral exercise in the future.

**Reference book:**

1. Japanese Pronunciation Textbook Helping You Communicate Freely, Hutianguizi, Zhang Ling, World Books Publishing House;
2. Fifty Tone Graph and Pronunciation of Japanese, Aki Asakura, Zhang Zhuohong, Wang Yichang, Tsinghua University Press
3. Instruction of Japanese pronunciation, Ling Rong, Shanghai Foreign Language Education Press

**Japanese Pronunciation Training II (2 credits)**

**Course code**: b4021020

**Suitable majors**: Japanese

**Instructor**: Zhu Qian, Jin Fenghua

**Brief introduction:**

Based on the Japanese Pronunciation Training 1, the course helps the students master the phonetic, toning and pronunciation rules of Japanese, laying a basis for the following study of specialty knowledge and especially oral exercise in the future.

**Reference book:**

1. Japanese Pronunciation Textbook Helping You Communicate Freely, Hutianguizi, Zhang Ling, World Books Publishing House;
2. Fifty Tone Graph and Pronunciation of Japanese, Aki Asakura, Zhang Zhuohong, Wang Yichang, Tsinghua University Press
3. Instruction of Japanese pronunciation, Ling Rong, Shanghai Foreign Language Education Press

**Graduation Internship and Graduation Design (Thesis) for the Major of Japanese (12 credits)**

**Course code**: b4021022

**Suitable majors**: Japanese

**Brief introduction:**

Graduation thesis is a comprehensive practical instructional step designed in the instructional plan, which cultivates the students’ application ability of the learned knowledge and basic technologies, the ability to analyze and solve practical problems and the elementary scientific research ability through training, so as to meet the cultivation objective for the Japanese talents.

**Writing Skills Training I (2 credits)**

**Course code**: b4021023

**Suitable majors**: Japanese

**Instructor**: Zhao Feng, Pei Fengxue, Shen Lili

**Brief introduction:**

This course includes writing skills training 1 and writing skills training 2; the objective and requirements of the writing skills 1 is to help the students write different types of articles in Japanese accurately and fluently. The course contents include the basic knowledge and rules of Japanese writing.

**Reference book:**

Instruction of Japanese Writing, Geng Tiezhen, Hirakawa Miho, Foreign Language Education and Research Press, 2011

**Writing Skills Training II (2 credits)**

**Course code**: b4021023

**Suitable majors**: Japanese

**Instructor**: Zhao Feng, Pei Fengxue, Shen Lili

**Brief introduction:**

Based on the writing skills training 1, the course requires the students to master different writing features and methods in Japanese, and lays a good basis for the thesis writing and the work in the future. The course contents include writing skills and writing exercises of different types of articles.

**Reference book:**

Instruction of Japanese Writing, Geng Tiezhen, Hirakawa Miho, Foreign Language Education and Research Press, 2012

**Audio-visual-oral News (Economy) (3 credits)**

**Course code**: b4021025

**Suitable majors**: Japanese

**Instructor**: Zhu Haoyu, Gao Yi

**Brief introduction:**

Audio-visual-oral News (Economy) is an important basic course for the juniors majored in Japanese, through special skill training, aiming to improve the students’ listening comprehension and oral expression step by step, cultivate their practical application ability, strengthen their understanding of the Japanese society (economy) with the help of modern video and audio documents, broaden their vision and lay a good basis for the overall improvement of their Japanese proficiency. The course requires the students to distinguish the pronunciation correctly, master the phonetic difficulty, accept and get used to the ordinary speaking speed, improve their comprehension, listening and speaking ability of Japanese and understand the economic knowledge, terms and social and economic background of Japan.

**Reference book:**

Self-edited textbook, Zhu Haoyu

**Audio-visual-oral News (Social Culture) (3 credits)**

**Course code**: b4021026

**Suitable majors**: Japanese

**Instructor**: Gao Yi, Zhu Haoyu

**Brief introduction:**

Audio-visual-oral News (Social Culture) is an important basic course for the juniors majored in Japanese, through special skill training, aiming to improve the students’ listening comprehension and oral expression step by step, cultivate their practical application ability, strengthen their understanding of the Japanese society (culture) with the help of modern video and audio documents, broaden their vision and lay a good basis for the overall improvement of their Japanese proficiency. The course requires the students to distinguish the pronunciation correctly, master the phonetic difficulty, accept and get used to the ordinary speaking speed, improve their comprehension, listening and speaking ability of Japanese and understand the economic knowledge, terms and social and economic background of Japan.

**Reference book:**

Self-edited textbook, Zhu Haoyu

**Comprehensive Training of Vocational Ability (1 credit)**

**Course code**: b4021027

**Suitable majors**: Japanese

**Instructor**: Zhao Feng, Zhu Qian, Lu Zheng

**Brief introduction:**

The course introduces the training contents for the secretary certificate examination, which is divided into the theoretical and practical part.

**Reference book:**

Self-edited textbook

**Sino-Japanese Cross-cultural Communication (1 credit)**

**Course code**: b4021028

**Suitable majors**: Japanese

**Instructor**: Quan Yushi, part-time instructor

**Brief introduction:**

China and Japan are neighbors, which is a unchangeable reality. Through the comparison of two countries’ culture, the students are required to understand the difference between Chinese and Japanese culture, understand the culture and international relationship of Japan, understand the thoughts and cultural origins of Japan. The course instructs the students to realize the difference between two countries from the perspective of culture and not to judge the other by imagination or forethoughts.

**Reference book:**

Comparison between Chinese and Japanese Customs and Cultures, Qing Mingwu, China Architectural Industrial Press

**School of Sciences**

**Insurance Actuarial Studies**

**Course code**: b2022001

**Suitable majors**: Applied Statistics

**Instructor**: Wang Ruiping, Wang Weixiang

**Brief introduction:**

This course is set for the major of statistics, finance and economics. The contents are divided into two parts: insurance autuary and non-insurance autuary. The course instructs the students to find out the statistic rules of random events with mathematical and statistical methods, so as to provide theoretical basis for the reasonable price making of different insurance policy to ensure the stable operation of the insurance organization. Through this course, the students are required to master the basic concept, theory and methods of autuary. From the perspective of contents, the course requires the students to understand the basic concept, theory and basic analysis methods of life and non-life insurance autuarial studies systematically. From the perspective of methods, the course requires the students to learn the basis of applied mathematical statistics more logically and research the risk of life and non-life insurance and the distribution rules of losses, so as to solve the computation of insurance fee and accumulated responsible capital and other problems. Finally, the core requires the students to combine the theory and methods together and understand the application of insurance actuarial theory in reality.

**Reference book:**

Theory and Practice of Insurance Actuary (3rd edition), Wang Xiaojun, Meng Shengwang, China Renmin University Press

**Bayesian statistics (2 credits)**

**Course code**: b2022002

**Suitable majors**: Applied Statistics

**Instructor**: Liu Xiaomei, Fang Hong

**Brief introduction:**

This course is a selective specialty course for the major of statistics. Bayesian statistics is a statistic method developing from the Bayesian theorem so as to systematically explain and solve statistical problems. The course is divided into two parts: Bayesian inference method and Bayesian strategy method, which mainly introduces the brief introduction to the Bayesian statistics, the selection and determination of prior distribution, computation of post distribution, the estimation of Bayesian parameter point, the Bayesian method in statistical model, Bayesian interval estimation and hypothetic testing estimation, helping the students understand the basic concept and theory of Bayesian statistics and master some common Bayesian methods, so as to lay a good basis for the application and research of Bayesian statistics.

**Reference book:**

Bayesian Statistics, Luan Shisong, China Statistical Press

**Prerequisite**: Introduction to Probability

**Basic Game Theory (2 credits)**

**Course code**: b2022003

**Suitable majors**: Applied Statistics

**Instructor**: Gui Shenghua, Fan Jing

**Brief introduction:**

Game Theory is a branch of applied economics, which researches on the behavioral rules of human beings when they face problems of interest. The main course contents include complete information statistic game, complete information dynamic game, incomplete information statistic game and incomplete information dynamic game and others. The objective of learning the course is to help the undergraduates master the basic concept, methods and theory of game theory and analyze new theoretical and practical problems with the thoughts of game theory.

**Reference book:**

Game Theory, Yao Guoqing, Higher Education Press

**Prerequisite**: Linear Algebra

**Public Finance (2 credits)**

**Course code**: b2022004

**Suitable majors**: Applied Statistics

**Brief introduction:**

Through this course, the students are required to master the new knowledge system of public finance and try to master the China public financial system framework. The students are especially required to master the basic theory of public finance, like concept of public finance, market and public finance, the function and principle of public finance, get familiar with the basic modes and main contents of public financial revenues and expenditures and related theory of public financial balance, understand the management system of China’s public finance, the public financial policy, and the development process of government bond system. Bases on that, the course analyzes and discusses the revolution perfection strategies from the perspective of supply and demand policy of public products, government function, public expenditure system, public revenue system, public budget management system, pubic debt management and national capital management. On the prerequisite of cultivating the students’ good theoretical basis, the course improves the students’ ability to analyze and solve problems, laying a solid basis for the learning of following courses.

**Reference book:**

Modern Public Finance, Hu Qingkang, Du Li, Fudan University Press

**Sampling Technology and Application (2 credits)**

**Course code**: b2022005

**Suitable majors**: Applied Statistics

**Instructor**: Zhang Xuanhao, Fang Hong

**Brief introduction:**

The course is a methodological course researching on the theory and technology of sampling investigation and estimation methods, which is one of the core specialty courses for the undergraduates of statistics. Through this course, the students are required to master the basic theory of sampling investigation, basic technology of sampling and basic methods of estimation so as to form certain application ability. The course contents include the basic knowledge of sampling investigation, simple random sampling, layering sampling, group sampling, multiphase sampling, unequal probability sampling and equal distance sampling.

**Reference book:**

Sampling Technology, Jin Yongjin, Du Zifang, Jiang Yan, China Renmin University Press

**Prerequisite**: Probability Basis, Statistics

**Non-parameter Statistics (2 credits)**

**Course code**: b2022006

**Suitable majors**: Applied Statistics

**Instructor**: Zhang Xuanhao, Fang Hong

**Brief introduction:**

Non-parameter Statistics is a new and active branch of statistics corresponding to the parameter statistics, which is widely applied in practice with plenty statistical thoughts. Non-parameter statistic method doesn’t rely on the overall distribution and its parameters. Non-parameter statistic method is suitable for the data of different types and only requires some general hypothesis for statistical inference, thus it has good stableness and is more effective than parameter method.

The course objective is to help the students understand the more and more important function of non-parameter statistics in statistical inference system. The course requires the students to master the basic knowledge, concept theory and methods of this course, and solve some simple practical problems with non-parameter statistical methods. The course emphasizes on the cultivation of students’ statistical thinking ability and practical ability, educates the students to pay attention to the completeness and accuracy of original document and take rigorous and serious attitudes. The course contents include single sample inference problem, double sample inference problem multiple sample inference problem, relativity and regression.

**Reference book:**

Non-parameter Statistics, Wu Xizhi, Zhao Fujuan, China Statistical Press

**Prerequisite**: Probability Basis, Statistics

**Risk Management (2 credits)**

**Course code**: b2022007

**Suitable majors**: Applied Statistics

**Instructor**: Liu Xiaomei, Wang Weixiang

**Brief introduction:**

It is a selective specialty course for the major of statistics. With the development of financial integration and economic globalization and the complication and diversification of financial risks, the financial risk management becomes more and more important and the requirements on risk management keep rising. The course mainly introduces the basic theory and technology of financial risk management, helping the students have a macro understanding of the special influence of financial risks in market economy and financial economy, master the general method of financial risk identification and financial risk measurement, master the common risk measurement methods like market risk, credit risk, operational risk and flowability risk, so as to make scientific risk management plans for financial organization with the learned theoretical methods of financial risk management and lay a solid theoretical basis for the economic work in the future.

**Reference book:**

Financial Risk Management, Zhang Jinqing, Fudan University Press

**Basic Probability (3 credits)**

**Course code**: b2022008

**Suitable majors**: Applied Statistics

**Instructor**: Fang Hong, Zhan Xiaoling

**Brief introduction:**

This course is an important basic theoretical specialty course for the major of statistics, covering the contents like random event and its probability, distribution and digital features of single dimensional random variable and double dimensional random variable, law of large numbers and central limit theorem. The course requires the students to master the basic concept, theory and application of probability, making necessary preparation and laying a theoretical basis for the following courses and providing theory and methods for the solution of practical problems.

**Reference book:**

Probability Basis, Li Xianping, Higher Education Press

**Prerequisite**: Calculus, Linear Algebra

**Management (2 credits)**

**Course code**: b2022009

**Suitable majors**: Applied Statistics

**Instructor**: part-time instructor

**Brief introduction:**

The course requires the students to master the basic function, theory and methods of management and lay a basis for the learning of specialty course in the future.

**Reference book:**

Instruction of Management, Zhou Jianlin, Shanghai University of Finance and Economics Press

**National Economic Statistics (2 credits)**

**Course code**: b2022010

**Suitable majors**: Applied Statistics

**Instructor**: Wang Ruiping, Wang Weixiang

**Brief introduction:**

The course is set for the major of statistics, finance, economics and management. Starting from the operational process of national economy, the course introduces the national economy systematically and comprehensively by describing different types of data and analyzing problems quantitatively. The course contents are divided into 8 parts: introduction, resource statistics of national economy, total amount statistics of national economy, process analysis of national economy, dynamic statistics of national economy, structural statistics of national economy, relationship statistics of national economy, accounting system of national economy and others. Through the course, the students are required to understand the operational process of national economy, know the judgment of national economic operational status from different perspectives, and master the meaning and computation of economic index around the world and the economic problems reflected by the index. Finally, the students are required to master the basic analyzing methods to analyze the relationship between different kinds of economic data and index.

**Reference book:**

National Economic Statistics (2nd edition), Qiu Dong, Higher Education Press

**Accounting Theory (2 credits)**

**Course code**: b2022011

**Suitable majors**: Applied Statistics

**Instructor**: Wang Weixiang, Wang Ruiping

**Brief introduction:**

The course mainly introduces the basic theory, methods and operational skills of accounting and explains on the accounting procedures and account procedures taking the economic business in industrial enterprise as an example. In detail, the course contents include the basic concept of accounting, the function, object, elements, equations and basic hypothesis and general principles of accounting and other basic theoretical knowledge, the account structure and the basic theory of double-entry bookkeeping, the account classification, basic application procedures and methods of accounting documents and accounting book, basic compiling methods of financial statement and the basic analyzing methods of financial statement, the application procedures and methods of accounting adjusting, account squaring, trial balancing, the basic operational procedures of accounting business processing and basic concept and principles of management accounting. Besides, the students are required to skillfully process the basic accounting business with basic accounting methods and master the basic methods of cost computation in management accounting.

**Reference book:**

Accounting Theory, Sun Ling, Cheng Li, Shanghai University of Finance and Economics Press

**Financial Engineering (2 credits)**

**Course code**: b2022012

**Suitable majors**: Applied Statistics

**Instructor**: Xia Zhengwei, Liu Lili

**Brief introduction:**

Financial Engineering is a new financial discipline born in western countries in 1990s, which applies the methods of engineering technology to design, develop and execute new financial products and solve financial problems innovatively. The history of financial engineering is not long, however, due to the import of engineering thoughts into the research on financial science, and the integration of modern financial science, information technology and engineering methods, it develops into a new interdiscipline rapidly, promoting the research on financial science to a new development stage and have a long-lasting influence on the financial industry even the whole economic field.

The main contents include: 1. Basic theory and method of derivative financial products; 2. basic theory and methods of hedging and arbitrage with the derivative financial products; 3. Basic methods of risk identification, measurement and management; 4. Application of random process and data methods in finance.

**Reference book:**

Financial Engineering, Li Fei, China Machine Press

**Prerequisite**: Mathematical Analysis, Probability Basis, Statistics

**Financial Statistic Analysis (2 credits)**

**Course code**: b2022013

**Suitable majors**: Applied Statistics

**Instructor**: Wang Ruiping, Fang Hong

**Brief introduction:**

The course is set for the undergraduates majored in statistics, finance and economics. Financial Statistical Analysis is a complete knowledge system integrating financial theory, financial statistic index, data, statistical analysis methods and financial cases, so as to provide basic theory and method for modern financial quantitative analysis. The course contents include: financial statistical analysis, bank statistical analysis, currency statistical analysis, insurance statistical analysis, security market statistical analysis, foreign financial statistical analysis and financial stable statistical analysis and others. Through this course, the students are required to understand the financial statistical framework, classification of financial tools and its accounting method, the basic methods and theory of financial statistics from different financial market. Finally, the course helps the students master the methods of analyzing the financial stableness based on the contents of financial statistical analysis, bank statistical analysis, currency statistical analysis, insurance statistical analysis, security market statistical analysis, foreign financial statistical analysis.

**Reference book:**

Modern Financial Statistical Analysis, Li Yong, Southwestern University of Finance and Economics Press

**Interest Theory (2 credits)**

**Course code**: b2022014

**Suitable majors**: Applied Statistics

**Instructor**: Liu Xiaomei, Wang Weixiang

**Brief introduction:**

This is a selective specialty course for the major of statistics. The course contents include: basic computation of interest, annuity, income rate, debt payment, bond and random interest rate. Through this course, the students are required to understand the basic concept and theory of interest theory, master the basic financial computation principle, learn the interest computation and quantitative analysis methods of financial products related to interest in financial field with mathematical model and master the quantitative financial analysis methods based on the currency time value in financial mathematics, so as to help the students master the basic thoughts and methods of interest processing and lay a basis for the following learning of courses of insurance actuarial mathematics, investment analysis and others.

**Reference book:**

Interest Theory, Zhang Lianzeng, Nankai Press

**Social Statistical and Social Investigation Method (3 credits)**

**Course code**: b2022015

**Suitable majors**: Applied Statistics

**Instructor**: Fang Hong, Zhang Xuanhao

**Brief introduction:**

This course is a practical specialty course for the major of statistics, with the main purpose to help the students master the general theory, basic procedures and main methods of social investigation research, master the methods of social investigation, master the basic knowledge of social statistical analysis. The course improves the students’ ability to search and collect, process and analyze the social information, improve their practical ability of social investigation, improve their observation and understanding of the social system and social phenomenon, laying a good basis for the work in the field of social management, social work and social research in the future.

**Reference book:**

Social Investigation and Social Statistics, Dong Haijun, Wuhan University Press

**Prerequisite**: Statistics

**Marketing (2 credits)**

**Course code**: b2022016

**Suitable majors**: Applied Statistics

**Instructor**: Part-time instructor

**Brief introduction:**

Through this course, the students are required to master the basic theory, concept and knowledge of modern marketing and the ability of market investigation, market analysis and market exploration, and qualify for the marketing planning, execution and management in different kinds of enterprises.

**Reference book:**

Marketing (3rd edition), Xu Dingya, Fudan University Press, 1st edition in June of 2004

**Test Design and Analysis (2 credits)**

**Course code**: b2022017

**Suitable majors**: Applied Statistics

**Instructor**: Zhang Xuanhao, Zhan Xiaoling

**Brief introduction:**

Test Design and Analysis is a branch in the field of natural science research methodology. The correct design of test plan and acquisition of investigation data is a necessary ability for the research workers so as to do scientific statistical analysis. Especially nowadays when the technology is witnessing a rapid development, how to acquire the concerned information at the lowest cost, learn, master and apply the course knowledge is particularly important. The course contents: basic concept, variance analysis and regession analysis of test design, 2K and 3K factor design, orthogonal test design and optimal robust design.

**Reference book:**

Test Design and Analysis, Chen Kui, Tsinghua University Press

**Prerequisite**: Probability Basis, Statistics, Applied Regression Analysis

**Data Mining (3 credits)**

**Course code**: b2022018

**Suitable majors**: Applied Statistics

**Instructor**: Zhan Xiaoling, Fang Hong

**Brief introduction:**

Statistical Mining is the most active and latest part of the data analysis field. The course requires the students to understand the concept and basic procedures of data mining, master the multiple important data mining technology, get familiar with the demonstration of data mining achievements, skillfully and effectively analyze the case or true data with data mining technology and acquire valuable information from a large amount of statistical data with the statistical software.

**Reference book:**

Clementine Data Mining Methods and Application, Xue Wei, Chen Huange, Publishing House of Electronics Industry

**Prerequisite**: Statistics, Applied Multiple Statistical Analysis

**Mathematical Analysis I (6 credits)**

**Course code**: b2022019

**Suitable majors**: Applied Statistics

**Instructor**: Dou Wenqing, Gao Meina, Xie Xiaoqiang, Ma Zhiyong, Luo Ling

**Brief introduction:**

Mathematical Analysis I is an important basic specialty course for the major of statistics and information computing science. The course helps the students master the basic thoughts of mathematical analysis and processing of problems, master the basic knowledge and methods of mathematical analysis, have the thinking and inference ability and the ability to analyze and solve problems, laying a basis for the learning of other specialty courses.

Mathematical Analysis I is divided into several parts of limit theory, :single variable differential calculus, single variable integral calculus and others. Through this course, the students are required to understand the basic theory of completeness of real number, master the concept, basic theory and methods of sequence and function limit, master the theory, computing methods of single variable differential calculus and the mean-value theorem, master the concept of indefinite integral and different integration methods, master the concept, computation and application of definite integral and master the concept and computation of improper integral.

**Reference book:**

Mathematical Analysis I, Ouyang Guangzhong, Zhu Xueyan, Jin Fuling, Chen Chuanzhang, Higher Education Press

**Mathematical Analysis II (6 credits)**

**Course code**: b2022020

**Suitable majors**: Applied Statistics

**Instructor**: Gao Meina, Dou Wenqing, Xie Xiaoqiang, Ma Zhiyong, Luo Ling

**Brief introduction:**

Mathematical Analysis II is the most important basic course for the major of applied mathematics, computing mathematics and applied statistics. On one hand, the course provides basic knowledge for the following courses; on the other hand, the course provides necessary trainings for the cultivation of the students’ independent work (with mathematical tools). Learning the basic contents and methods of this course plays a key role in the study in the future. Through this course, the course requires the students to master the basic concept, theory and computation of the calculus and cultivates the students’ ability of thinking, proving, computing of the mathematical problems, and the ability to analyze and solve problems independently, laying a good basis for the learning of other specialty courses. The course contents include the number series, function series, power series, multivariate function limit and series, derivative of multivariate function and perfect differential, extreme and conditional extreme, multiple integral and others.

**Reference book:**

Mathematical Analysis II, Ouyang Guangzhong, Zhu Xueyan, Jin Fulin, Chen Chuanzhang, Higher Education Press

**Prerequisite**: Mathematical Analysis I

**Taxation (2 credits)**

**Course code**: b2022021

**Suitable majors**: Applied Statistics

**Instructor**: Wang Weixiang, Liu Xiaomei

**Brief introduction:**

Taxation is a course systematically reflecting the theory, policy, system and management of tax, with the objective to help the students master the basic theory, knowledge and methods of tax, understand the role and function of taxes in socialism market economy from the theoretical perspective, master the rules and principles of tax distribution, skillfully master the tax policy and system, improve their ability to analyze and judge the problems of taxes correctly and the ability to solve tax problems with tax theory and method.

The first part of taxation is the tax theory, introducing the tax features, tax function, tax development, tax principle, tax elements, tax burden and tax effect, tax efficiency and principle of fairness, theory of tax incidence and tax structure; the 2nd part is tax system, introducing the basic policies and systems of all kinds of taxes in China; the 3rd part is tax management, introducing the main policies of tax management and tax administration.

**Reference book:**

Taxation, Hu Yijian, Shanghai University of Finance and Economics Press

**Prerequisite**: Microeconomics, Macroeconomics, Public Finance, Accounting Theory, Management Theory, Financial Accounting

**Statistics (4 credits)**

**Course code**: b2022022

**Suitable majors**: Applied Statistics

**Instructor**: Fang Hong, Zhan Xiaoling

**Brief introduction:**

This course is a basic specialty course for the major of statistics, researching on how to measure, observe, summarize and express the quantitative features of objective phenomenon and to infer the overall quantitative features in accordance with the sampling data. Through this course, the students are required to understand the property, features and classification of statistics, understand the basic concept and basic thoughts of statistical description and master the basic methods of statistical description systematically, and know how to quantize and observe the features of phenomenon, research on how to infer the overall quantitative features in accordance with the sampling data and make inference in accordance with the unknown quantitative features of the statistics in the expression way of probability based on the description of sampling data, including parameter estimation and hypothetic test and others.

**Reference book:**

Statistics, Jia Junping, China Renmin University Press

**Prerequisite**: Probability Basis

**Statistic Forcast and Decision (2 credits)**

**Course code**: b2022023

**Suitable majors**: Applied Statistics

**Instructor**: Liu Xiaomei and Fang Hong

**Brief introduction:**

Statistic Forecast and Decision is a selective specialty course for the major of statistics. The course is divided into three parts: qualitative forecast, quantitative forecast and statistic decision. The contents include Delphi forecasting method, scenario forecasting method, regression forecasting method, time series decomposition and trend extrapolation, time-series smooth forecasting method, intervention analysis model forecasting method, barometer methods, gray forecasting method, state space forecasting methods and kalman filtering, forecasting precision measurement and forecasting evaluation and risky decision method, undetermined decision method, and multi-purpose decision method. Through this course, the students are required to master the common quantitative forecasting methods, make scientific forecasts and strategies of economic phenomenon with those methods and improve their ability to solve reality problems with statistic forecasting and decision methods.

**Reference book:**

Statistic Forecasting and Decision, Xu Guoxiang, Shanghai University of Finance and Economics Press

**Western Economics (3 credits)**

**Course code**: b2022024

**Suitable majors**: Applied Statistics

**Brief introduction:**

The course focuses on the theory of modern western economics with the background of market economic operation, systematically introduces the theory of microeconomics and macroeconomics, emphasizes on the introduction of basic concept of economics and the application of macro policy. Through the instruction and learning of this course, the students are required to master the research objects of economics and the problem analyzing methods, helping the students have an overall understanding of the basic theory and concept of microeconomics and macroeconomics, the operational system and methods of the above theory and the methods of macro-economic regulation.

**Reference book:**

Brief Introduction to Western Economics, Yin Bocheng, Shanghai People’s Publishing House

**Linear Algebra (4 credits)**

**Course code**: b2022025

**Suitable majors**: Applied Statistics

**Instructor**: Liu Lili, Zhang Feng

**Brief introduction:**

This course is a compulsory basic specialty course for the major of applied statistics. Through the course, the students are required to master the basic knowledge and theory of linear algebra, get familiar with the abstract, strict algebra system and methods, understand the dialectical relationship between detailed and abstract, special and ordinary, finite and infinite, improve their ability of abstract thinking, logic reasoning and computing ability. The course contents include determinant, matrix, linear system of equations, quadratic and linear space and linear transformation and other basic concepts and theory.

**Reference book:**

Advanced Algebra, Wang E’fang, Shi Shengming, Higher Education Press

**Applied Multi-statistic Analysis (3 credits)**

**Course code**: b2022026

**Suitable majors**: Applied Statistics

**Instructor**: Zhan Xiaoling, Liu Xiaomei

**Brief introduction:**

Applied Multi-statistic Analysis is an important branch of statistics, which is developing rapidly based on probability and mathematical statistics and supported by computer application technology. Through this course, the students are required to master the basic concept and cluster analysis, judgment analysis, principal component analysis, factor analysis and other mainstream methods in multi-statistic analysis, understand the analysis methods and have the elementary modeling ability of practical problems with multi-statistic methods through the close combination of quantitative and qualitative analysis.

**Reference book:**

Multi-statistic Analysis, He Xiaoqun, China Renmin University Press

**Prerequisite**:

Statistics, Probability

**Applied Regression Analysis (2 credits)**

**Course code**: b2022027

**Suitable majors**: Applied Statistics

**Instructor**: Zhang Xuanhao, Fang Hong

**Brief introduction:**

Applied Regression Analysis is an important branch of statistics, researching on the statistic regularity of variables with interrelationships. The course is also an important basic course for the major of statistics. Through this course, the students are required to master the classic linear regression modeling methods and regression diagnosis methods, understand the biased estimation methods about ridge regression in modern regression analysis and general processing methods of non-linear regression. The course objective and requirements: master the basic theory and methods of regression analysis and lay a solid basis for the following courses and improvement of professional levels in the future, cultivate the ability to solve practical problems with statistic methods. Course contents: introduction of regression analysis, single variable linear regression, multi variable linear regression, violation of basic hypothesis, self-variable selection and progressive regression, multiple mutual linear problems and solution, ridge regression, non-linear regression, regression model including qualitative variables.

**Reference book:**

Analysis of Applied Regression, He Xiaoqun, Liu Wenqing, China Renmin University Press

**Prerequisite**: Probability Basis, Statistics

**Applied Time-series Analysis (2 credits)**

**Course code**: b2022028

**Suitable majors**: Applied Statistics

**Instructor**: Zhan Xiaoling, Wang Ruiping

**Brief introduction:**

Time-series analysis is an important branch of statistics, which is developing rapidly based on probability and mathematical statistics and supported by computer application technology. Through this course, the students are required to master the basic concept, theory and modeling procedures of time-series analysis, understand the analysis methods and have the elementary modeling ability to analyze, solve and process practical problems with time series analysis methods, skillfully master the related theory and basic modeling methods of AR (p), MA (q), ARMA (p, q), SARIMA and other models in all kinds of stationary time series.

**Reference book:**

Applied Time Series Analysis, Wang Yan, China Renmin University Press

**Prerequisite**: Probability, Applied Regression Analysis

**Operational Research (2 credits)**

**Course code**: b2022029

**Suitable majors**: Information and Computing Science

**Instructor**: Fan Jing, Gui Shenghua

**Brief introduction:**

Through this course, the students are required to master the most basic modeling technology, quantitative analysis and optimization method, solve basic operational research problems, get familiar with the modeling conditions, steps and techniques, abstract accurate models from practical backgrounds, and have the elementary ability to solve practical problems with quantitative methods, laying a good basis for the study of specialty courses and providing necessary tools or methods.

The course contents include linear planning, simplex methods, artificial variable method, dual problem, precision analysis, economic explanation of dual variable, traffic and transportation problem, assignment problem, dynamic planning problem, smallest supportive tree problem, shortest path problem, largest flow problems and others.

**Reference book:**

Operational Research, Operational Research Textbook Editing Group, Tsinghua University Press

**Prerequisite**: Mathematical Analysis, Linear Algebra

**Security Investment Analysis (3 credits)**

**Course code**: b2022030

**Suitable majors**: Applied Statistics

**Instructor**: Wang Ruiping, Xia Zhengwei

**Brief introduction:**

This course is set for the undergraduates majored in statistics, finance and economics. The course contents include: 1. Concept, classification and features of different kinds of securities; 2. The basic theory of investment environment, security market, investment portfolio and capital pricing, the value analysis, macro analysis, technical analysis of securities, behavioral analysis of investors and risk management. The course introduces the security investment comprehensively from multiple perspectives, making the analysis more systematic and reliable. Through this course, the students are required to master the construction of capital pricing model and different risk management control model based on the understanding of basic definition of security, theory of security investment science, different index system of security classification. Meanwhile, the students shall be able to analyze the short-time performance of stocks in all the operational graph of different stocks. The bilingual textbook helps the students understand the English expression of some terms in accordance with the 12th five-year plan of the country.

**Reference book:**

Security Analysis (6th edition), Benjamin Graham, China Renmin University Press

**Quality Management Statistic Methods (3 credits)**

**Course code**: b2022031

**Suitable majors**: Applied Statistics

**Instructor**: Fang Hong, Zhang Xuanhao

**Brief introduction:**

This course is a specialty course for the major of applied statistics, introducing the introduction of modern industrial statistics, statistic technology and process ability analysis, sampling test, statistical process controlling chart, test design and data processing, reliability analysis, 6 sigma execution cases which are commonly used in quality management, reflecting the application of modern statistic methods in industry.

**Reference book:**

Modern Industrial Statistics and Quality Management, Wang Geng, China Renmin University Press

**Prerequisite**: Statistics

**Property Data Analysis (2 credits)**

**Course code**: b2022032

**Suitable majors**: Applied Statistics

**Instructor**: Wang Ruiping, Fang Hong

**Brief introduction:**

This course is set for the major of statistics, finance and mathematics. The course contents include: property data, single property classification data, fourfold table, two-dimensional contingency table, high-dimensional contingency table, logistic regression model, log-linear model, corresponding analysis of contingency table, Bayesian statistic inference of property data and others. The textbook also make some supplements to part of the theoretical proving in the textbook. The course also introduces the application of statistic methods with the statistic software Excel, Minitab, SPSS and SAS, helping the students combine the theoretical knowledge and practice together.

**Reference book:**

Property Data Analysis (6th edition), Wang Jinglong, Liang Xiaojun, Wang Liming, Higher Education Press

**Basic Physics (3 credits)**

**Course code**: b2022033

**Suitable majors**: Applied Statistics

**Instructor**: Teng Qing, Xu Chengnian and others

**Brief introduction:**

Basic Physics is an important general educational course, which requires the students to master the scientific logic thinking methods and spirit contained in the knowledge of physics and understand the meaning of physical rules and improve their scientific literacy like experimental skills and the ability to analyze and solve problems by learning the basic theory and knowledge of physics.

**Reference book:**

College Physics, Zhu Feng, Tsinghua University Press

**Database Application (3 credits)**

**Course code**: b4022001

**Suitable majors**: Applied Statistics

**Instructor**: part-time instructor  
**Brief introduction:**

The course requires the students to systematically master the basic theory and technology of database system and skillfully operate database in one database management system with SQL language, master the database design methods and steps and have the ability of designing database models based on the learning of basic concepts of database system.

**Reference book:**

Instruction of Database Theory and Application (3rd edition), He Yujie, China Machine Press

**Mathematic Software (2 credits)**

**Course code**: b4022002

**Suitable majors**: Applied Statistics

**Instructor**: Fan Jing, Fang Hong

**Brief introduction:**

Mathematic Software is a new course after the introduction of computer technology and mathematic software into instruction. The setting of mathematical experimental course in college is one of the important requirements of “21st Century Instructional Contents and Course System Revolution Plan for Higher Education”. The course is a compulsory course for the major of mathematics, with the main learning objective of MATLAB and its application, aiming to help the students master the basic grammar, common function and programming methods, and the application of MATLAB in theoretical and practical problems. The course contents include: MATLAB basic grammar, two/three dimensional drawing, elementary programming, the application in Advanced Mathematics, linear algebra and simple optimization problems.

**Reference book:**

MATLAB Mathematical Experiment, Hu Liangjian, Sun Xiaojun, Higher Education Press

**Prerequisite**: Mathematical Analysis, Linear Algebra, C Language, Data Structure

**Comprehensive Training of Statistic Investigation and Analysis (4 credits)**

**Course code**: b4022003

**Suitable majors**: Applied Statistics

**Instructor**: Fang Hong, Zhan Xiaoling

**Brief introduction:**

This course is one of the most important practical courses for the major of statistics, requiring the students to make market investigation on one detailed social problem after the systematic mastering of the SPSS statistical software operation. The main tasks include the questionnaire design of market investigation, data collection, statistic analysis and analysis report writing in accordance with the analysis result, so as to cultivate the students’ ability to solve practical problems with statistic software and methods and improve their ability to describe and analyze problems and discuss statistic results, laying a good theoretical and practical basis for the solution of more complicated practical problems in the future.

**Reference book:**

Market Investigation Method and Technology, Jin Yongjin, Jiang Yan, China Renmin University Press

**Prerequisite**: Statistics, Sampling Technology and Application

**Analysis and Writing of Statistic Modeling (2 credits)**

**Course code**: b4022004

**Suitable majors**: Applied Statistics

**Instructor**: Zhan Xiaoling, Wang Ruiping

**Brief introduction:**

Statistic modeling ability is the skill for students majored in applied statistics and statistic writing ability is the expressive ability for the students. The course aims to cultivate their ability of problem definition, problem understanding, statistic modeling and analysis, result demonstration and conclusion writing for the statistic application. The students are required to write statistic investigation reports with clear structure, logic, emphasis and accurate analysis with the comprehensive application of knowledge of multiple variable statistics, regression analysis, time series and others.

**Reference book:**

Statistic Application of Social Research, Li Peiliang, Social Scientific Literature Press

**Prerequisite**: Statistics, Applied Multiple Variable Statistic Analysis

**Basic Statistic Software (2 credits)**

**Course code**: b4022005

**Suitable majors**: Applied Statistics

**Instructor**: Sun Weiping, Fang Hong

**Brief introduction:**

The course helps the students learn statistic knowledge with the statistic function and analysis tools of Excel, analyze practical problems with statistic methods and explains the results from the perspective of statistic meaning.

The course contents are divided into two parts. The 1st part is the basic knowledge and operation of Excel, so as to make students understand the function of Excel in statistic analysis; the 2nd part focuses on the statistic theory and introduces the application of Excel in statistic analysis and decision, which provides direct demonstration of statistic theory and the data analysis of practical cases. This is the main content of the course. The course requires the students to fully understand the statistic theory and demonstrate the abstract statistic theory and complicated formula directly and life likely; meanwhile, the students shall be able to do statistic analysis with Excel and understand the practicability and simplicity of Excel.

**Reference book:**

Excel Statistic Analysis and Decision, Yu Hongyan, Liu Jinxing, Higher Education Press

**Statistic Software Practice I (3 credits)**

**Course code**: b4022006

**Suitable majors**: Applied Statistics

**Instructor**: Zhan Xiaoling, Fang Hong

**Brief introduction:**

Through the introduction and analysis of SPSS statistic analysis methods, software and application cases, the students are required to understand the statistic analysis methods and master the use of SPSS software, especially the core functions and analysis methods rapidly and apply it into the data analysis and scientific decision. The main contents of the course include the construction and management of SPSS data documents, the basic steps of data analysis with SPSS software, the preprocessing methods of SPSS data analysis, SPSS basic statistic analysis methods, parameter testing methods of SPSS and non-parameter testing methods of SPSS.

**Reference book:**

SPSS Statistic Analysis Methods and Application, Xue Wei, Publishing House of Electronics Industry

**Prerequisite**: Statistics, Applied Multiple Variable Statistic Analysis

**Statistic Software Practice II (2 credits)**

**Course code**: b4022007

**Suitable majors**: Applied Statistics

**Instructor**: Zhan Xiaoling, Fang Hong

**Brief introduction:**

After the learning of Statistic Software Practice I, the main contents of the course include the variance analysis, correlation analysis, regression analysis, cluster analysis, factor analysis and others. Through the course, the students are required to use the multiple variable statistic methods with the statistic software and do statistic analysis of the results given by software. The course cultivates the students’ statistic modeling ability of problem description, problem analysis and problem solution, laying a good theoretical basis and practical basis for the solution of complicated practical problems.

**Reference book:**

SPSS Statistic Analysis Methods and Application, Xue Wei, Publishing House of Electronics Industry

**Prerequisite**: Statistics, Applied Multiple Variable Statistic Analysis

**Statistic Software Practice III (3 credits)**

**Course code**: b4022008

**Suitable majors**: Applied Statistics

**Instructor**: Wang Ruiping, Zhan Xiaoling

**Brief introduction:**

This course is set for the undergraduates majored in statistics, finance and mathematics, which is also an important practical course for the major of applied statistics with 3 credits and 72 course hours. The course requires the students to master the application of R software and improve their statistic analysis ability of practical cases through learning the basic use of R software and multiple variable statistic analysis methods of R language. R software is a free and open source software belonging to GUN system, an excellent tool for the statistic computation and drawings. With stress on the application of actual cases and statistic thoughts, the course comprehensively and systematically introduces the practical methods describing the statistic analysis, regression analysis, variance analysis, linear model analysis, multiple variable statistic analysis and regression analysis, logic analysis, survival analysis and non-linear curve fit and others. With dfferent cases, the course introduces the practical operational process of R language of different statistic methods one by one.

**Reference book:**

Introduction to R Language Statistics (2nd edition), Peter Dalgaard, Posts & Telecom Press

**Graduation Internship and Graduation Design (Thesis) for the Major of Applied Statistics (12 credits)**

**Course code**: b4022009

**Suitable majors**: Applied Statistics

**Brief introduction:**

Graduation Thesis (Design) is an important instructional step, aiming to cultivate the students’ ability to analyze and solve actual problems and innovative ability with the learned basic theory, knowledge and skills, meet the requirements on senior technical talents and have the elementary ability to work on posts of production and scientific research. It is a practical internship transiting from the college learning to the independent working, which is the final test of the students before they start to work and is a bridge connecting college and society. Thus, the graduation thesis (design) plays an important role in the realization of the cultivation objective of college engineering education.

**Department of Humanities**

**Public Relations Writing (2 credits)**

**Course code**: b2023001

**Suitable majors**: Public Relations

**Instructor**: Li Ming, Wang Lu

**Brief introduction:**

Public Relations Writing is one of the most important basic specialty courses for the undergraduates majored in public relations, which cultivates the students to become the talents qualifying for the writing of different styles. The course requires the students master the ability to write in English for some certain audiences, website and write crisis management plans.

**Reference book:**

Public Relations Writing, Li Ming, Self-edited

**Communication Ethic and Laws (2 credits)**

**Course code**: b2023002

**Suitable majors**: Public Relations

**Instructor**: Qian Pei, Yu Ping

**Brief introduction:**

Communication Ethic and Law can reflect the latest research trends about public communication law, which is completely in accordance with the most updated laws and regulations in China. The course is a practical course, introducing a large amount of true cases and explaining the related theories by connecting theory to practice. The course objective is to help the students majored in PR understand the laws and regulations in PR and related field, providing a legal basis for the employment in PR industry in the future.

**Reference book:**

Public Communication Law—21st Communication Research Series, Wu Fei, Zhejiang University Press

**Communication (3 credits)**

**Course code**: b2023003

**Suitable majors**: Public Relations

**Instructor**: Qian Pei

**Brief introduction:**

Communication is a science researching on the information and its operational rules of human society with high practicability. The course not only researches on the history of human society communication, the factors of communication process (communicator, audience, information, media, effect and feedback) and its related theory, communication process mode and systematic structure, but also researches on the different communication types in modern information society (intrapersonal communication, interpersonal communication, group communication, organization communication, public communication, Internet communication, international communication and global communication and others), different schools and theories in the development history of communication. The course mainly aims to help the students pay attention to the cases in reality and learn from practice so as to master the knowledge and ability of communication for the collection, processing and output of different information, explore and discover the scientific methods of overcoming the communication obstacles to realize correct and effective communication and promote the positive circulation of social information system.

**Reference book:**

Instruction to Communication, Guo Qingguang, China Renmin University Press

**Service Marketing (2 credits)**

**Course code**: b2023004

**Suitable majors**: Public Relations

**Instructor**: Zhu Xiaoling

**Brief introduction:**

Service Marketing is a selective course for the undergraduates majored in public relations. From the perspective of the thoughts system, it belongs to the marketing of traditional markets; from the perspective of research contents, it is an extension and enrichment of the marketing. There’re some obvious differences between service marketing and marketing. The service marketing has its own features: strong characteristics of the era, strong sense of historical mission, broad field with innovativeness. The research on service marketing behaviors is definitely going to become the dynamics and theoretical basis for the development of public relations out of the needs of development of knowledge economy in the new century.

**Reference book:**

Service Marketing, Guo Guoqing, Higher Education Press

**Investigation and Evaluation of Public Relations (2 credits)**

**Course code**: b2023005

**Suitable majors**: Public Relations

**Instructor**: Zhu Xiaoling, Qian Pei

**Brief introduction:**

This course is a selective specialty course for the undergraduates majored in public relations, which researches on the basic rules and methods of enterprise PR, brand image investigation and forecasting with high practicability. The course requires the students to learn the basic theory and method of market investigation and research, understand the public image of enterprise, cultivate their ability of PR investigation and evaluation and improve their ability of acquiring, summarizing and using market information.

The course requires the students to make clear of the important role of PR investigation and evaluation in enterprise business management and marketing activity, learn to make investigations on certain PR problems, master the basic theory and common research methods or techniques of market research, like the operational process of market investigation, the detailed implementation of some commonly used investigation methods (questionnaire, focus group, deep interview and observation methods).

**Reference book:**

Market Investigation and Forecasting, Chen Qijie, Shanghai University of Finance and Economics Press

**Public Relations Practice and Cases (2 credits)**

**Course code**: b2023006

**Suitable majors**: Public Relations

**Instructor**: Chen Qing, Zhang Huibin

**Brief introduction:**

This course is a basic specialty course for the major of public relations, which is an extension and deepening of the course of Public Relations, with the features of applicability, practicability and feasibility. The basic requirements of the course is to help the students skillfully master the basic knowledge of different steps of the PR working procedures, master the basic skills and operational methods of practical work of PR like PR investigation research, PR planning, PR plan implementation and evaluation, PR topic activity (news release conference, exhibition, celebration organization, social commonwealth sponsorship), and new media PR; the students are also required to make actual PR practical operations skillfully with the PR case study, laying a basis for the PR work in the future.

**Reference book:**

Public Relations Theory and Practice (2nd edition), Yao Huizhong, Peking University Press

**Prerequisite**: Communication, Public Relations, Advertising

**Public Relations Psychology (2 credits)**

**Course code**: b2023007

**Suitable majors**: Public Relations

**Instructor**: Zhu Xiaoling, Zhang Huibin

**Brief introduction:**

The course researches on the subject and object of PR and its special psychological status and activity rules in the communication. The course helps the PR workers master the most necessary basic knowledge of different PR psychology in PR activities, and understand the special psychological status and its rules of social organization and public audiences in PR activities. It is an applied discipline integrating the knowledge and theory of behavioral science, communication, marketing and others with PR as the prerequisite, aiming to help the students improve their ability to analyze and solve practical PR problems and build up good image for the social organization and enterprises.

**Reference book:**

PR Psychology, Zhang Yun, Capital University of Economics and Business Press

**Public Relations (3 credits)**

**Course code:** b2023008

**Suitable majors**: Public Relations

**Instructor:** Yu Ping, Wang Lu

**Brief introduction:**

Public Relations mainly introduces the basic theory of PR practical activity and its applications in socialism market economy, aiming to help the students understand the public relationship with PR sensibility, communicate and coordinate well in the socialism market economy, and apply PR theory into practice. The course contents include understanding of PR, PR origins, growth and development, basic concept and core elements of PR, constitutional elements of PR, function and principle of PR, practical operation of PR, crisis PR and others.

**Reference book:**

Public Relations, Ju Yan’an, Fudan University Press

**Public Relation Language and Writing (Chinese) (2 credits)**

**Course code**: b2023009

**Suitable majors**: Public Relations

**Instructor**: Li Ming, Dai Congxi

**Brief introduction:**

This is a compulsory course for the major of public relations, which includes basic theory of PR writing (including laws and morals, contents and styles, pyramid theory of PR writing), writing of small style (communication or coordination style mainly), writing of medium style, writing of information communication style and investigation evaluation, writing of large style (PR plan writing mainly).

**Reference book:**

Practical Public Relations Writing, Doug Newsom, China Machines Press

**Public Management (3 credits)**

**Course code**: b2023010

**Suitable majors**: Public Relations

**Instructor**: Wang Lu, Yu Ping

**Brief introduction:**

This course introduces the internal and external management elements of public management, general rules of public strategy and basic knowledge of public ethics. Based on that, the students are required to master the main framework and theoretical knowledge of public management, including the basis for public management as independent disciplines, development of public management theory and practice, main body of public management organization and individuals, function and process of public management, performance of public management, responsibility and monitoring of public management, public goods management, new strategy of public management and others. The students are also required to apply those knowledges into practice.

**Reference book:**

Public Management (2nd edition), Xu Shuangmin, Peking University Press

**Public Ethics (3 credits)**

**Course code**: b2023011

**Suitable majors**: Public Relations

**Instructor**: Li Ming, Qian Pei

**Brief introduction:**

The course objective is to help the students understand and master the basic knowledge, related concepts and basic theories of public ethics. The main contents include: public ethics and management ethics, subject and object of public ethics, system arrangement and public ethics, public rights and public ethics, public affairs and public responsibility, quality of public management people, public ethic construction and others.

**Reference book:**

Public Ethics, Gao Li, Higher Education Press

**Prerequisite**: Public Management

**Public Policy (2 credits)**

**Course code**: b2023012

**Suitable majors**: Public Relations

**Instructor**: Yu Ping, Zhu Xiaoling

**Brief introduction:**

It is a specialty course for the major of public relations. Public strategy is a marginal interdisciplinary, covering many contents in the field of social science and natural science. Considering the completeness of theoretical system, the course introduces the basic knowledge of public strategy and development future, around the management property of public relations so as to broaden the students’ vision. On one hand, the students are required to strengthen their understanding the basic view and methods of Marxism and Deng Xiaoping theory and build up correct sensibility of public relations. Meanwhile, through the learning and training of public policy, the students are required to master the basic methods of understand and analyze the public policy and have the basic ability to analyze the public policy, laying a basis for the systematic theory and complete technology of policy analysis work in the future.

**Reference book:**

Introduction to Public Policy (2nd edition), Xie Ming, China Renmin University Press

**Public Etiquette (2 credits)**

**Course code**: b2023013

**Suitable majors**: Public Relations

**Instructor**: Zhang Huibin, Chen Qing

**Brief introduction:**

It is a selective course for the major of public relations, with general applicability. The course contents focus on the cultivation of basic sustainable development ability of PR persons, which is a reflection of basic quality of individuals. Through this course, the students are required to cultivate their public relation sensibility, have and apply good social networking etiquettes, so as to demonstrate themselves better in the future and interact or cooperate with others confidently, sincerely and politely.

**Reference book:**

Public Relations Etiquette, Zheng Jian’er, Cellsi Abradu, Zhejiang University Press

**Advertising Planning and Creative Design (2 credits)**

**Course code**: b2023014

**Suitable majors**: Public Relations

**Instructor**: Zhang Huibin, Chen Qing

**Brief introduction:**

This is one of the selective specialty courses for the major of public relations, which cultivates the students’ basic advertising planning and creative design ability through the instruction and learning of the whole process of advertising planning and process of advertising creative design, like analyzing the market and target consumption group, analyzing the adverting products, making advertising strategy, selecting the advertising media and making advertising media plans, making advertising plans and others. Through the course, the students are required to master the basic theory and methods of advertising planning and creative design, not only including the inner meaning, theoretical background, compositional part of advertising planning, the inner meaning, methods of advertising creative design and creative rules of different media modes, but also including the research, analysis and summary of advertising plans and creative design cases from the perspective of practice; the students are also trained to improve their practical ability of acquiring and analyzing planning information, teamwork planning, design and communication and others.

**Reference book:**

Advertising Planning and Creative Design, Yu Mingyang, Chen Xianhong, Fudan University Press

**Prerequisite**: Advertising

**Advertising (2 credits)**

**Course code**: b2023015

**Suitable majors**: Public Relations

**Instructor**: Zhang Huibin, Chen Qing

**Brief introduction:**

It is a basic compulsory specialty course for the major of public relations. The course tries to introduce the latest development and theoretical trends of advertisement in the world and introduce the latest research and development achievements into instructional activity timely, emphasizes on the organic combination of fundamentality and advancement of the adverting theory, classic and modern nature of the contents. Meanwhile, the course pays attention to the combination of advertising theory and practice, integrates the knowledge of advertisement, marketing, communication and consumer together, and stresses the cultivation and improvement of practical advertising ability of the students. The course objective is to help the students master the basic features and theories of adverting activity, require the students to have an overall understanding of the theory and operations of the advertising activity and master the ability to solve practical advertising problems; meanwhile, the students are required to understand the relationship between the advertisement and knowledge of communication, marketing, consumer behaviors and master the essence of advertising operation scientifically and accurately.

**Reference book:**

Introduction to Modern Advertising, Ding Junjie, Kang Jing, China Media University Press

**Customer Relations Management (2 credits)**

**Course code**: b2023016

**Suitable majors**: Public Relations

**Instructor**: Li Ming, Wang Lu

**Brief introduction:**

The course instructs the basic theory and methods of customer relations management systematically from the theoretical and practical perspective. On one hand, it pays attention to the basic theory and technology; on the other hand, it supplements and updates the instruction with latest knowledge and practice of customer relation management. The course contents starts from the concept of customer relation management and discusses the whole process of customer relations management. The course is divided into two parts. The 1st part introduces the basic theoretical knowledge of CRM, including the basic theory, definition and inner meaning, application system of CRM, and the marketing, sales, customer service, data mining in CRM. The 2nd part introduces the execution process of CRM system, including CRM project planning, plan selection and project evaluation and others.

**Reference book:**

Customer Relations Management, Wu Qing, Fudan University Press

**Media Analysis and Planning (2 credits)**

**Course code**: b2023017

**Suitable majors**: Public Relations

**Instructor**: Qian Pei, Chen Qing

**Brief introduction:**

Media plays a more and more important role in the development of social life and economy. Nowadays, the information flow constructed by media has a deep influence on the human behaviors and social system. Communication is the main contents of public relations; organization is to complete the objective and mission of PR through the communication of information. The course emphasizes on the general index and its operational methods of public media research, introduces the features of traditional media like TV, broadcasting, newspaper and the Internet new media and researches on the index and its operational methods. It is a course with high applicability. The task is to help the students understand and master the features and operational methods of main PR media and make optimal PR communication strategy for different PR topics or objectives to make optimal PR communication effects.

**Reference book:**

Introduction to Communication (2nd edition), Wang Wenke, Zhejiang University Press

**Brand Strategy and Broadcasting (2 credits)**

**Course code**: b2023018

**Suitable majors**: Public Relations

**Instructor**: Qian Pei, Chen Qing

**Brief introduction:**

This course mainly researches on how the social organizations (mainly enterprise) make scientific orientation and strategic planning based on the identification of market and social role, and make harmonious and mutual beneficial relationship and sustainable development with consumers and society through multiple communication ways like marketing communication, advertising, public relations, new media self use. The course introduces the brand theory system in accordance with the basic procedures of practical brand planning, including the basic branding theory, brand orientation planning, brand characters identification planning, brand image identification planning, brand communication strategy and others. The students are required to master the basic knowledge of brand, the importance of brand, brand planning and communication.

**Reference book:**

Brand Planning and Management (2nd edition), Cheng Yuning, China Renmin University Press

**Enterprise CI Strategy and Application (2 credits)**

**Course code**: b2023019

**Suitable majors**: Public Relations

**Instructor**: Yu Ping, Hu Guangmei

**Brief introduction:**

The course aims to require the students to understand the concept of enterprise image planning, the history and development trend of enterprise image planning and cultivate their ability of systematic planning of the enterprise image in accordance with the business thoughts and development needs of the enterprise, make corresponding management rules and make plan promotion and plans of CIS import program with the learned knowledge, laying a basis for the work in the field of PR and learning of other related courses. The course contents include: the introduction to enterprise image, inner meaning and principle, scientific flow, thought identification, visual identification, behavioral identification, image plan development trend and others.

**Reference book:**

Enterprise Image Planning, Ye Wanchun, Wan Houfeng and others, Northeast University of Finance and Economics Press

**Interpersonal Communication (2 credits)**

**Course code**: b2023020

**Suitable majors**: Public Relations

**Instructor**: Qian Pei, Hu Guangmei

**Brief introduction:**

Interpersonal Communication is a discipline researching on the features and rules of interpersonal communication and influences. The course introduces the basic theory, objective, principle, mode, speech, negotiation skills, social networking etiquette, language communication, non-language communication, management communication, applying for employment and the basic principle and strategy of cross-culture communication. The course instructs the methods and thoughts, strengthens the practice and improves the operational skills of the students through case analysis.

**Reference book:**

Interpersonal Communication, Geng Yan, Tsinghua University Press

**Business Planning (2 credits)**

**Course code**: b2023021

**Suitable majors**: Public Relations

**Instructor**: Zhang Huibin, Zhu Xiaoling

**Brief introduction:**

Business Planning is one of the specialty courses for the undergraduates majored in Public Relations. Through the systematic learning of the course, the students are required to understand the systematic thoughts and inner logic of modern business planning, form the thinking mode for the modern business planning, master the technology of modern business planning and have the ability of modern business planning with the views, methods and tools of other disciplines.

**Reference book:**

Business Planning, Wan Jun, Tsinghua University Press

**Business Negotiation (2 credits)**

**Course code**: b2023022

**Suitable majors**: Public Relations

**Instructor**: Hu Guangmei, Wang Lu

**Brief introduction:**

Business Negotiation is an applied specialty course combining the theory to practice closely with the features of broadness, lawfulness, practicability and systematicalness, introducing the related knowledge, technology and methods related to business negotiation, which is also a core course for the major of public relations. Through the course, with many business negotiation case study, the students are required to master the basic theory and practice of business negotiation, understand the procedure, contents, ethics, process and etiquettes of business negotiation and skillfully and innovatively apply the negotiation strategy and skills, so as to qualify the students for the requirements of business negotiators and make preparations for the accumulation of customer communication and business negotiation skills in the PR industry in the future.

**Reference book:**

Business Negotiation: Theory, Technology and Cases, Wang Junqi, China Renmin University Press

**Marketing (2 credits)**

**Course code**: b2023023

**Suitable majors**: Public Relations

**Instructor**: Chen Qing, Zhang Huibin

**Brief introduction:**

Marketing is the basic specialty course for the undergraduates majored in public relations. Marketing is a mixed discipline of economics, behavioral science and managment, researching on the marketing activity of enterprises focusing on the requirements of consumer needs and its rules, with the basic, whole process, comprehensive and practical natures. The course mainly introduces the basic theory and practical knowledge of marketing, playing a pioneering and basic role in the course module of sales and planning for the major of pubic relations. The course includes the four main parts: the basic theoretical part of marketing, strategic planning part of marketing (marketing analysis, consumer market and purchasing behavioral analysis, market competitive strategy, market , target market selection and market strategy), market combination part (product strategy, price strategy, channel strategy, promotion strategy) and the extended part of marketing theory.

**Reference book:**

Marketing, Wu Jian’an, Higher Education Press

**Statistics (2 credits)**

**Course code**: b2023024

**Suitable majors**: Public Relations

**Instructor**: Zhan Xiaoling, Zhang Xuanhao and others

**Brief introduction:**

The course systematically introduces the basic theory and methods of modern statistics. Through this course, the students are required to master the basic theory and methods of statistics, have the ability to make investigation on social economic problems in accordance with the detailed tasks and conditions, make quantitative analysis based on qualitative analysis, so as to meet the requirements of empirical research, scientific decision and economic management of different problems in the socialism market economy.

**Reference book:**

Statistics—Searching, Collection and Analysis of Data, Sun Yunwu, Shanghai University of Finance and Economics Press

**Crisis Management (2 credits)**

**Course code**: b2023025

**Suitable majors**: Public Relations

**Instructor**: Zhang Huibin, Li Ming

**Brief introduction:**

Crisis Management not only statistically researches on the definition, features, classification of crisis, the crisis stakeholders, crisis communication system and crisis organization, but also researches on the crisis warning, crisis management strategy, crisis management plan and execution, media management and communication management of crisis, crisis recovery management dynamically, providing a clear principle and framework for the public crisis management and enterprise crisis management, and the strategy, methods and skills in practice.

The course objective is to help the students apply the learned theoretical knowledge into practice. Thus, the two tasks of the course are as follows: master the basic concept, knowledge, theory and typical cases of modern society; analyze and solve different crisis frequently happened in reality with the crisis communication management theory.

**Reference book:**

Crisis Communication Management, Hu Baijing, China Media University Press

New Media Communication (2 credits)

**Course code**: b2023026

**Suitable majors**: Public Relations

**Instructor**: Hu Guangmei, Yu Ping

**Brief introduction:**

This is a core course for the major of public relations, aiming to cultivate the PR workers qualified for the needs and revolutions of public media, constantly changing media environment, new media information construction and communication business with creative strategy and conception. Thus, we set the course to help the students get familiar with the features and operational rules of new media. The instruction is based on the deep understanding of traditional media and pays attention to the essential property, communication features of new media, summarizes and analyzes the detailed application of new media in marketing and PR field and its development trend with rich case analysis. It is a comprehensive, interdisciplinary and practical course.

**Reference book:**

Introduction to Internet Communication, Peng Lan, China Renmin University Press

**Prerequisite**: Communication

**New Media Information Edit (2 credits)**

**Course code**: b2023027

**Suitable majors**: Public Relations

**Instructor**: Li Hongyan, Li Ming  
**Brief introduction:**

Starting from the new media concept, new media editing, new media editing quality and policies and laws necessary for the new media editing, the course helps the students understand how to make information filtering, content editing, content creation and integration for new media drafts. There’re three main information sources for the new media: picture, audio and video; the course introduces the format, feature and the editing methods of the above three sources. Meanwhile, the course stresses the introduction of collection and editing technology of new media information, webpage making, website structure design, Internet electric publishing technology and new media information publishing technology.

**Reference book:**

New Media Information Editing, Tan Yunming, Tsinghua University Press

**New Media Marketing (2 credits)**

**Course code**: b2023028

**Suitable majors**: Public Relations

**Instructor**: Chen Qing, Hu Guangmei

**Brief introduction:**

This course mainly introduces the basic knowledge, latest development and related theory of new media marketing, the latest development of new media marketing and stresses the introduction of concept, feature and operational method of new media marketing, including portal marketing, Internet video marketing, search engine marketing, email marketing, Internet forum marketing, blog marketing, microblog marketing, wechat marketing, mobile phone media marketing and digital media marketing.

**Reference book:**

The New Rules of Marketing and PR (4th edition), David Meerman Scott, translated by Zhao Li, China Machine Press

**Integrated Marketing Communication (2 credits)**

**Course code**: b2023029

**Suitable majors**: Public Relations

**Instructor**: Hu Guangmei, Chen Qing

**Brief introduction:**

As a senior course for the undergraduates majored in PR, the course can integrate the contents of other courses for this major. The course helps the students pay attention to the function and values of integrated marketing communication, have the elementary sensibility and thoughts of integrated marketing communication, master the basic procedures and detailed requirements of integrated marketing communication and make integrated marketing communication plans for certain brands with the learned theory, through the instruction of integrated marketing communication marketing theory and practice. The detailed course contents include the development of integrated marketing communication theory, the integrated marketing communication process and plans, the ultimate value pursuit of integrated marketing communication, touching point theory, database and direct marketing, advertising strategy and execution, preference in promotion, integrated application of PR, network advertising communication mode (including virtual community) and others.

**Reference book:**

Theory and Practice of Integrated Marketing Communication, Wei Junying, Capital University of Economics and Business Press

**Prerequisite:** Communication, Marketing, Practice and Cases of Public Relations, Advertising, Public Relations

**Organizational Culture (2 credits)**

**Course code**: b2023030

**Suitable majors**: Public Relations

**Instructor**: Wang Lu, Yu Ping

**Brief introduction:**

As the basic course for the major of public relations, the course aims to research on the related theory of organizational culture, which provides a new point of view to understand the organization and the customers in the future from the perspective of management. The students are required to have a systematic understanding of the organizational culture so as to better adapt into the organizational culture, especially to apply the organizational culture into the PR practice in the future consciously. The course contents include: the theoretical basis of organizational culture, values, national culture and organizational culture, systematic view of organizational culture, externalization and internalization of organizational culture, composition of organizational culture, the holding and heritance of organizational culture, revolution of organizational culture, culture conflicts and integration in organizations and others.

**Reference book:**

Organizational Culture, Shi Wei, Fudan University Press

**Prerequisite**: Public Relations

**Graduation Internship and Graduation Design (Thesis) for the Major of Public Relations (12 credits)**

**Course code**: b4023001

**Suitable majors**: Public Relations

**Brief introduction:**

Graduation Thesis is a comprehensive training of the students, an important way to improve and test the learning quality of the students, which cultivates the students’ ability to independently complete the project with learned PR knowledge and lays a basis for the work in the future. The objective mainly includes: strengthen and expand the basic theory and specialty knowledge of PR, cultivate their ability to analyze and solve practical problems with learned knowledge, have the elementary sensibility and experiences of PR operation and management, cultivate their ability to make PR investigation, analyze and solve problems with the investigation and research methods, improve their ability and skills of document application, data processing, reading and translation of foreign documents, application of computers, word expression, oral expression and others.

**PR Project Planning (3 credits)**

**Course code**: b4023002

**Suitable majors**: Public Relations

**Instructor**: Zhang Huibin

**Brief introduction:**

PR Project Planning selects the topic of different PR related competitions as the main planning topics, organizes and instructs the students to finish a relatively complete PR planning project as required by the competition through practical training, helping the students to further understand and apply the four-step methods of PR project planning (especially the PR planning process, public media communication plan making), so as to use the learned theoretical knowledge and find shortages through practice and motivate the students the sense of self-study.

**PR Industry Practice (2 credits)**

**Course code**: b4023003

**Suitable majors**: Public Relations

**Instructor**: Qian Pei, Hu Guangmei

**Brief introduction:**

This is one of the main practical courses, which helps the students have a sensible understanding of different operational steps of the enterprise through the practice inside or outside the college, so as to accumulate their understanding of the business PR operation, business PR industry and other background knowledge, and lay a basis for the execution of following practical instructional steps.

The course objective is to help the students understand the development of China’s PR industry by visit, the development of PR industry in Shanghai, Beijing, Guangzhou and other cities, the business scope and procedures of some famous PR company, the professional ethics and professional quality of the PR workers, have a direct and sensible understanding of the business PR industry, public enterprise and PR work, so as to make preparations for the study of following basic specialty courses.

**Thesis Writing for the Major of PR (2 credits)**

**Course code**: b4023004

**Suitable majors**: Public Relations

**Instructor**: Li Ming

**Brief introduction:**

As one of the most important practical courses for the major of public relations, the course cultivates the students’ ability of PR investigation and research and the ability to write thesis based on the investigation results through practice inside or outside the college. The main contents are as follows: 1. Apply the learned knowledge and theory to the analysis of some topics in the field of PR; 2. Do analysis and research rigorously; 3. Write an academic thesis of 4000-5000 words.

**Internship for the Major of PR (3 credits)**

**Course code**: b4023005

**Suitable majors**: Public Relations

**Instructor**: Wang Lu

**Brief introduction:**

The course carries out the internship in PR department of enterprise, PR company, consultation and planning company after mastering a large amount of theoretical PR knowledge and skills. During the internship, the students experience the customer communication and coordination, PR investigation, PR planning, PR execution, effect evaluation and other practical work during the whole process for a long time, so as to required the students to combine PR theories to practice, improve their practical operational ability of business PR, meet the requirements of PR department/posts as soon as possible, and make corresponding preparation for the PR work in the future. The contents include: PR service work internship—customer communication, PR investigation work internship—investigation plan making and execution, PR investigation work internship—investigation analysis and report writing.

**Practice of Company Image Planning and Management (2 credits)**

**Course code**: b4023006

Suitable major: Public Relations

**Instructor**: Yu Ping

**Brief introduction:**

This is one of the practical specialty courses for the major of PR, which introduces the ideas, thoughts, procedures, strategy and effects of corporate image planning, image promotion. Through this course, the students are required to not only master the overall rules and operational practice of CIS, but also to design the overall image of company by themselves and make PR communications with corresponding strategy and accurate media.

**Practice of New Media PR and Brand Promotion (2 credits)**

**Course code**: b4023007

**Suitable majors**: Public Relations

**Instructor**: Zhu Xiaoling

**Brief introduction:**

The course is an important part of the practical instructional step for the major of PR. In accordance with the instructional cultivation plans for the major of PR, the course objective is to help the students strengthen and skillfully use the professional knowledge and practical operational skills of courses of Introduction to New Media, Market Investigation and Research, Public Relations, Marketing, Brand Planning and Management and Communications learned before. Meanwhile, the course makes preparations for the study of following courses through the investigation and planning of new media PR and brand communication and promotion, and the training of public media communication plan design with the help of new media platform, so that the students can better learn and master the theoretical knowledge and skills of PR planning.

**Information Investigation and Analysis (3 credits)**

**Course code**: b4023008

**Suitable majors**: Public Relations

**Instructor**: Chen Qing, Zhang Huibin

**Brief introduction:**

This is one of the main practical courses for the major of public relations, which is an extension of the compulsory basic specialty course Market Investigation and Research and the basis of other practical courses. The course requires the students to skillfully make and execute information investigation plans on practical problems with the learned basic theory, knowledge and skills of information investigation, do effective analysis of information based on the scientific collection of data, and provide basis of decision for the solution of practical problems.

*Specialty Course*

School of Economics and Management

**SPSS Operation and Application (2 credits)**

**Course code**: b2030001

**Suitable majors**: E-commerce

**Instructor**: Yu Yin, Jiang Wenrong

**Brief introduction:**

Based on the brief understanding of SPSS theory, the course requires the students to master the SPSS operational process with the theory of statistics, explain and prove the hypothesis according to the results and make relatively normal statistical analysis. The course contents include: elementary statistics, construction and management of SPSS data documents, basic processing of SPSS data documents, operation and management of SPSS output windows, SPSS basic statistic analysis, SPSS correlation analysis and linear regression analysis and others.

**Reference book:**

SPSS Software Application, Zhang Rongyan, Gao Shan, Gao Yunfei, Tsinghua University Press

**Prerequisite**: Applied Statistics, Probability and Mathematical Statistics

**Bonded Logistics (2 credits)**

**Course code**: b2030002

**Suitable majors**: Logistics Management

**Instructor**: Zhou Yanjun, Meng Qi

**Brief introduction:**

The course mainly introduces the operational practice of bonded logistics, the key points of Custom approval and policy requirements for the business optimization of bonded logistics company, taking the key points and difficult points of practical operation as the research object. The course contents include the free tax zone (comprehensive free tax zone), free tax logistics zone and other, basically covering all the modes of bonded logistics. The students are required to seriously learn and compare the difference of related policies, compare the policy functions of special zones and free tax zones of different types one by one, master the difference and key points among them, and select the most suitable logistics rapidly. The course aims to cultivate the students’ ability of corresponding operational business of bonded logistics, the theoretical knowledge and operational skills of performing corresponding responsibilities of bonded logistics in management authority.

**Reference book:**

Practical Operation and Skills for Special Supervision Zone of Custom and Free Tax Supervision Places, Editing Committee of “Custom Matters Processing Trade Series”, China Custom Press

**Financial Analysis (2 credits)**

**Course code**: b2030003

**Suitable majors**: Credit Management

**Instructor**: Bian Lingling, Tang Haiou, Liu Weiqing and others

**Brief introduction:**

Through this course, the students are required to get familiar with the financial statement system of enterprises, master the inner meaning of main projects reflecting the financial status and business achievements of the enterprises, skillfully apply the financial analysis methods to analyze all kinds of statistic and dynamic information in financial statements, evaluate the operational efficiency and growth potential of the enterprises and provide some reference for information user’s judgment of enterprise values.

**Reference book:**

Financial Analysis, Zhang Xianzhi, Northeast University of Finance and Economic Press

**Prerequisite**: Accounting Theory

**Financial Analysis (3 credits)**

**Course code**: b2030004

**Suitable majors**: Financial Management

**Instructor**: Bian Lingling, Tang Haiou

**Brief introduction:**

Through this course, the students are required to get familiar with the financial statement system of enterprises, master the inner meaning of main projects reflecting the financial status and business achievements of the enterprises, skillfully apply the financial analysis methods to analyze all kinds of statistic and dynamic information in financial statements, evaluate the operational efficiency and growth potential of the enterprises and provide some reference for information user’s judgment of enterprise values. The main contents include balance sheet analysis, income statement analysis, cash flow statement analysis, consolidated financial analysis, comprehensive analysis of financial statements and others.

**Reference book:**

Financial Statement Analysis, Zhang Xinmin, Qian Aimin, China Renmin University Press

**Prerequisite**: Accounting Theory, Financial Accounting I, Financial Accounting II

**Financial Management I (3 credits)**

**Course code**: b2030005

**Suitable majors**: Financial Management

**Instructor**: Wang Hui, Liu Weiqing

**Brief introduction:**

Through the course, the students are required to master the basic knowledge and methods of financial management and firmly build up the basic thoughts of financial management. In instruction, the course pays attention to the training of basic skills so as to meet the cultivation objective of applied talents, lay a basis for the learning of following courses and specialty courses, and provide necessary tools and methods. The main course contents include financial management objects, objectives and , financial management environment, time-value concept, risk income concept and cost effect concept, fund-raising concept, classification and principle, equity financing and debt financing, financing scale and financing timing, capital cost and financing risk, capital structure, fixed asset investment decision, depreciation policy, classification and investment introduction of fixed assets.

**Reference book:**

Financial Cost Management, China Associations of Certified Public Accountants, Economy and Science Press

**Prerequisite**: Accounting Theory, Calculus B1

**Financial Management II (3 credits)**

**Course code**: b2030006

**Suitable majors**: Financial Management

**Instructor**: Wang Hui, Liu Weiqing

**Brief introduction:**

Through the course, the students are required to master the basic knowledge and methods of financial management and firmly build up the basic thoughts of financial management. In instruction, the course pays attention to the training of basic skills so as to meet the cultivation objective of applied talents, lay a basis for the learning of following courses and specialty courses, and provide necessary tools and methods. The main course contents include: concept, feature and classification of flow asset, cash management, receivable management, inventory management, operational capital management, classification of security investment, investment risk and income, combined investment strategy, target profit planning, target sales and target cost planning, profit distribution and dividend policy management.

**Reference book:**

Financial Cost Management, China Associations of Certified Public Accountants, Economy and Science Press

**Prerequisite**: Accounting Theory, Calculus B2, Financial Management I

**Financial Management (3 credits)**

**Course code**: b2030007

**Suitable majors**: Credit Management

**Instructor**: Bian Lingling, Tang Haiou, Liu Weiqing and others

**Brief introduction:**

The course helps the students to understand the important role of financial management in the promotion of healthy development of market economy and the improvement of enterprise’s operational management level and economic income, understand the basic contents of financial management, get familiar with different kinds of financial activities and financial relationship, master different kinds of business activity of financial management, and learn to apply the knowledge and skills of financial management to serve for the operational management decision of the enterprise.

**Reference book:**

Financial Management, Jin Xin, Wang Huacheng, Liu Junyan, China Renmin University Press

**Prerequisite**: Accounting Theory

**Financial Accounting I (3 credits)**

**Course code**: b2030008

**Suitable majors**: Financial Management

**Instructor**: Cheng Li, Li Jun

**Brief introduction:**

Through the course, the students are able to master the basic theory of financial accounting and deal with general financial accounting problems with the basic methods of financial accounting, laying a basis for the learning of following courses and providing necessary tools and methods. The main course contents include the basic features of financial accounting, the general principles of accounting, the property and scope of currency capital, the accounting of receivables, the detailed accounting of receivables, bad accounting, accounting of notes receivable, prepayment and accounting of other receivables, classification and accounting of financial capital, property and classification of inventory, valuation of inventory, accounting of long-term equity investment.

**Reference book:**

Accounting: Textbook for 2014 CFA Examination, China Associations of Certified Public Accountants, China Public Finance and Economy Press

**Prerequisite**: Accounting Theory

**Financial Accounting II (3 credits)**

**Course code**: b2030009

**Suitable majors**: Financial Management

**Instructor**: Cheng Li, Li Jun

**Brief introduction:**

Through the course, the students are able to master the basic theory of financial accounting and deal with general financial accounting problems with the basic methods of financial accounting, laying a basis for the learning of following courses and providing necessary tools and methods. The main course contents include classification and valuation of fixed asset, property and classification of flow debt, property and classification of long term debt, the features and composition of stakeholder’s equity, concept and determination methods of income, total profit accounting, income tax accounting and profit distribution accounting, types of financial statements for enterprises, function, structural theory, project sequence and compiling methods of different kinds of financial statements, the basic contents, debt restructuring, accounting policy, accounting estimation and changes, accounting errors and correction and the accounting processing of events occurring after the balance sheet date and related accounting information declaration.

**Reference book:**

Accounting: Textbook for 2014 CFA Examination, China Associations of Certified Public Accountants, Economy and Science Press

**Prerequisite**: Accounting Theory, Financial Accounting I

**Public Finance (2 credits)**

**Course code**: b2030010

**Suitable majors**: Credit Management

**Instructor**: Tang Jiping, Wei Wenjing

**Brief introduction:**

Through the course, the students are able to master and understand the basic rules of public finance, including the rules of “making money, managing money, and using money” and the detailed theory of macro public financial policy, understand the economic phenomenon and economic policy related to government, so as to lay a good basis for the learning of specialty courses and improve their ability to analyze and solve economic problems.

**Reference book:**

Public Finance (5th edition), Chen Gong, China Renmin University Press

**Prerequisite**: Finance, Western Economics

**Purchasing and Supply Chain Management (3 credits)**

**Course code**: b2030011

**Suitable majors:** Logistics Management

**Instructor**: Li Hehua, Liu Zhenchao, Chen Zhigang

**Brief introduction:**

The course contents include the challenges to purchasing and supply management, objectives and organization of effective purchasing and supply management, purchasing strategy, purchasing and supply business procedures, plans, organization and controlling of purchasing and supply, relationship of vendors and suppliers and the supply chains, international purchasing, public purchasing, purchasing of capital assets and services, the application of information technology in the purchasing and supply management.

**Reference book:**

Management of Modern Purchasing and Supply, Li Hehua, Shanghai University of Finance and Economics Press

**Prerequisite**:

**Exhibition Attending Practice (3 credits)**

**Course code**: b2030012

**Suitable majors**: Exhibition Economy and Management

**Instructor**: Wang Shengying, Zhao Jun

**Brief introduction:**

Exhibition Attending Practice is a specialty course related to modern exhibition economy, the core course and main specialty course for the major of exhibition economy in colleges. The course introduces the basic rules and methods of exhibition activities step by step in accordance to the basic exhibition procedures form the perspective of exhibitors and enterprise integrated sales strategy. The contents of exhibitor project management are divided into three stages of pre-exhibition preparation, on-exhibition management, and after-exhibition coordination, introducing the working emphasis of different stages from the function of exhibition, the relationship and difference between exhibition attending, enterprise activity and other sales activity, to the general procedures of attending an exhibition. Through this course, the students are able to have an overall understanding of the enterprise’s exhibition attending procedures and common skills.

**Reference book:**

Exhibition Attending Practice, Wang Chunlei, Higher Education Press

**Warehouse and Distribution Management (3 credits)**

**Course code**: b2030013

**Suitable majors**: Logistics Management

**Instructor**: Wu Xinggen, Zhan Wei

**Brief introduction:**

The course is a specialty course for the major of logistics management, researching on the methods, theory and modes of commodity storage, the systematic composition of distribution center and its operational management analysis methods or modes. Through this course, the students are required to master the acceptance, maintenance, warehouse-out technology, management technology of inventory control, the operation of different systems and using managements of facilities in the main working procedures of distribution center, laying a good basis for the learning of other specialty courses and work in the field of logistics management in the future.

**Reference book:**

Storage and Distribution Management, Wu Xinggen, Fudan University Press

**Industrial Economics (2 credits)**

**Course code**: b2030014

**Suitable majors**: Exhibition Economy and Management

**Instructor**: Wang Shengying, Gu Yingkang, Zhao Jun

**Brief introduction:**

Industrial Economics is a new applied economic theory of modern economics used to analyze the actual economic problems, which focuses on the industry research and serves for the making of national economic development strategy and industrial policy. The course introduces the industry structure, industry relationship, industry organization and industry policy, helping the students understand and master the common economic index and basic methods and have the ability to analyze some economic phenomenon and problems with basic theory.

**Reference book:**

Instruction of Industrial Economic (Revised Edition), Yang Gongpu, Xia Dawei, Shanghai University of Finance and Economics Press

**Basic Program Design (Java) (4 credits)**

**Course code**: b2030015

**Suitable majors**: E-commerce

**Instructor**: Chen Jian, Jiang Wenrong, Yan Jihong, Pan Hailan, Wu Cuihong and others

**Brief introduction:**

The course requires the students to master the thoughts and methods of object-oriented program design and design programs in Java language, including: 1. Program structure 2. Array character and character string 3. Process and function 4. Class and object 5. Input and output 6. Class reuse and polymorphism.

**Reference book:**

Basis for Java Language Program Design, (US) Liang, China Machine Press

**German (3 credits)**

**Course code**: b2030016

**Suitable majors**: Hospitality Management

**Brief introduction:**

The students are required to understand the brief introduction of German history, culture and education, master certain amount of vocabulary, grammar knowledge and have certain reading ability, the ability to make simple conversations in German and the ability of listening, speaking and writing.

**Reference book:**

College German, 1st volume, Zhang Shuliang, Higher Education Press

**Second Foreign Language I (2 credits)**

**Course code**: b2030017

**Suitable majors**: International Business

**Brief introduction:**

The students majored in International Business may select the course of Second Foreign Language to substitute the basic English course set in 2nd Grade after the completion of English courses in 1st Grade and passing the CET6. The detailed language type and instructor will be arranged by the college of arts and sciences.

**Second Foreign Language II (2 credits)**

**Course code**: b2030018

**Suitable majors**: International Business

**Brief introduction:**

The students majored in International Business may select the course of Second Foreign Language to substitute the basic English course set in 2nd Grade after the completion of English courses in 1st Grade and passing the CET6. The detailed language type and instructor will be arranged by the college of arts and sciences.

**E-commerce (3 credits)**

**Course code**: b2030019

**Suitable majors**: International Business

**Instructor**: Jiang Hua, Chen Wei

**Brief introduction:**

This course introduces the topics of electric learning, electric government affairs, web-based supply chains, business collaboration and others, covering rich documents and cases and discussing the industrial structure, competition changes in the web2.0 environment and its influences on the society. Besides, the course also covers the consumer behavior, business collaboration, Internet safety, Internet transaction and CRM, EC strategy, providing latest information of modern E-commerce practice.

**Reference book:**

E-commerce: View of Management and Social Networking (7th edition), Efraim Turban, translated by Shi Qiliang, Peisheng Press

**E-Commerce Safety Technology and Management (3 credits)**

**Course code**: b2030020

**Suitable majors**: E-commerce

**Instructor**: Wu Cuihong, Jiang Wenrong, Dai Jieqiang

**Brief introduction:**

The students are required to understand and master the inner meaning, principle, objective and realization of e-commerce safety, get familiar with the technology of e-commerce and the safety management methods, so as to cultivate the complex talents knowing the safety technology and management. The course contents include: Internet safety, encryption technology, safety verification, safety agreement, safety management, mobile commerce safety and others.

**Reference book:**

E-commerce Safety, Zhu Jianming, China Machine Press

**E-commerce Case Analysis (1 credit)**

**Course code**: b2030021

**Suitable majors**: International Business

**Instructor**: Chen Jian, Jiang Hua

**Brief introduction:**

The course selects the e-commerce innovative enterprises from 2008-2013 in China and analyzes its business mode and business starting process. The course contents include: B2B e-commerce cases, B2C e-commerce cases, O2O e-commerce cases, tourism e-commerce cases, 3rd party payment and mobile payment cases, mobile e-commerce cases and traditional enterprise’s e-commerce cases. Through this case analysis, the students are able to understand the business mode of e-commerce and the theory of value creation, the business starting process and its rules of e-commerce.

**Reference book:**

Case Analysis of E-Commerce, Jiang Kai, Science Press

**E-commerce Case Analysis (1 credit)**

**Course code**: b2030022

**Suitable majors**: E-commerce

**Instructor**: Chen Jian, Jiang Hua

**Brief introduction:**

The course selects the e-commerce innovative enterprises from 2008-2013 in China and analyzes its business mode and business starting process. The course contents include: B2B e-commerce cases, B2C e-commerce cases, O2O e-commerce cases, tourism e-commerce cases, 3rd party payment and mobile payment cases, mobile e-commerce cases and traditional enterprise’s e-commerce cases. Through this case analysis, the students are able to understand the e-commerce enterprise model and the influences of model and structure of e-commerce system on the customer flow and supply chain management, and master the influences of e-commerce characterization and online community on the development of e-commerce. The detailed course contents include: 1. e-commerce enterprise model design, 2. E-commerce statistics and structure, 3. E-commerce model and electric bidding, 4. Customer flow, 5. Supply chain and logistics, 6. E-commerce characterization, 7. Online community and online market research

**Reference book:**

Typical Case Analysis of E-Commerce Website, Jiang Jianzheng, Xidian University Press

**E-commerce Law (2 credits)**

**Course code**: b2030023

**Suitable majors**: E-commerce, International Business

**Instructor**: Jiang Wenrong

**Brief introduction:**

The course objective is to help the students understand the legal problems in the development of e-commerce, the generation and development of e-commerce law and the objects and scope of legal regulation, master the legal regulation problems of e-signature and authentication, e-contract, e-payment, discuss and understand the problems like special e-commerce legal regulation, online illegitimate competitive behaviors and Internet intangible asset ownership protection, the consumer right protection in e-commerce, e-commerce tax law, jurisdiction in e-commerce and others.

**Reference book:**

Instruction of E-commerce Law, Yang Jianzheng, Higher Education Press

**Introduction to E-commerce (2 credits)**

**Course code**: b2030024

**Suitable majors**: E-commerce

**Instructor**: Wu Cuihong, Chen Jian

**Brief introduction:**

Through this course, the students are required to master the basic theory and knowledge of e-commerce, skillfully master the business procedures of e-commerce and make e-commerce solutions specially for enterprises through applying the theories into practice. The course contents include: concept and basic knowledge of e-commerce, e-commerce technology basis, e-commerce safety, Internet sales, online payment and settlement, e-commerce logistics, e-commerce law and others.

**Reference book:**

Introduction to E-commerce, Li Hongxin, Northeast University of Finance and Economics Press

**E-commerce Development Technology (3 credits)**

**Course code**: b2030025

**Suitable majors**: E-commerce

**Instructor**: Pan Hailan, Yan Jihong, Jiang Wenrong, Chen Jian and others

**Brief introduction:**

Through this course, the students are required to master the development methods of JavaBean, Servlet and JSP technologies, learn the basic skills of problem analysis, overall structural design, users’ interface design, dynamic webpage program design and cultivate their teamwork spirit and software engineering design standards. Meanwhile, the students are required to understand and master the technology so as to develop dynamic business websites rapidly so as to meet the needs of society and market. The course contents include: JSP operational environment and other dynamic webpage technology, JSP basic grammar and built-in object, database and JDBC technology, JavaBean technology, Java Servlet and its arrangement and development, event monitor and filter, combined cases of Jsp and JavaBean and Servlet and others.

**Reference book:**

Java Web Programming Technology, Shen Zegang, Qing Yuping, Tsinghua University Press

**Prerequisite**: Data Structure and Algorithm, Foreground Design Practice of E-commerce, Basic Database Application

**E-commerce Logistics (2 credit)**

**Course code**: b2030026

**Suitable majors**: E-commerce, Logistics Management

**Instructor**: Wu Cuihong

**Brief introduction:**

E-commerce Logistics Management mainly includes the introduction of e-commerce logistics management, e-commerce logistics market and logistics mode, Traffic and Transportation and storage, packaging, loading and delivery management, e-commerce logistics distribution management, e-commerce logistics technology basis, e-commerce logistics information management system, new style logistics, supply chain management, logistics management methods and others. Through this course, the students are able to understand the basic theory and technology of e-commerce logistics operation and management, expand their thoughts, strengthen their understanding of the theoretical knowledge and improve their self-study ability through case study.

**Reference book:**

E-commerce Logistics Management, Ge Xiaomin, China Water & Power Press

**Multimodal Traffic and Transportation (2 credits)**

**Course code**: b2030027

**Suitable majors**: Logistics Management

**Instructor**: Cai Weiwei, Ling Huidan, Zhou Yanjun

**Brief introduction:**

This course introduces the basic theory, laws and operational practice of international container multimodal Traffic and Transportation. The course contents include basic knowledge, plan design, coordination and control, document business, business procedure, fee-collecting business, insurance business, claim and claim settlement of container multimodal Traffic and Transportation.

**Reference book:**

Practice of International Container Multimodal Traffic and Transportation, Yang Zhigang, People’s Traffic and Transportation Press

**French (3 credits)**

**Course code**: b2030028

**Suitable majors**: Hospitality Management

**Brief introduction:**

The students are required to understand the brief information of French history, culture and education, master a certain amount of vocabulary, grammar and some reading ability for the simple conversation in French and have the ability of listening, speaking and writing.

**Reference book:**

New College French I, Li Zhiqing, Higher Education Press

**Crisis Management (2 credits)**

**Course code**: b2030029

**Suitable majors**: Financial Management, International Business

**Instructor**: Tang Haiou

**Brief introduction:**

Through study of this course, the students are able to understand and master different kinds of basic concepts of crisis, the important function of crisis and the basic theory of crisis activity. Based on that, the course aims to improve the students’ ability to research and solve practical problems in crisis identification and management practice, including crisis management basis, crisis theory, crisis of the enterprise, practice of crisis management, crisis cost and objective of crisis management and others.

**Reference book:**

Crisis Management, Liu Xinli, Peking University Press

**Prerequisite**: Management

**Introduction to Golf (2 credits)**

**Course code**: b2030030

**Suitable majors**: Hospitality Management

**Instructor**: Ling Xuqiang, Duan Muhai

**Brief introduction:**

The course researches on the basic concept, development history and related rules of golf and its service or management, which is one of the specialty courses for the major of hospitality management. Through this course, the students are able to have a relatively complete knowledge framework to serve the customer requiring golf service, and have a complete understanding of the scope or basic methods of attracting and serving the customers of segment markets, laying a basis for the specialty internship in the future.

**Reference book:**

Introduction to Golf, Han Liebao, Tourism Education Press

**Prerequisite**: Introduction to Hospitality Management, Introduction to Hospitality Industry

**Advanced Business English (2 credits)**

**Course code**: b2030031

**Suitable majors**: International Business

**Instructor**: Yan Chunrong, Xu Li, Yao Li and others

**Brief introduction:**

This course is set for the high grade students, which requires the students to meet the mid-level or above of BEC. The course fully reflects the instructional idea of business English, in the context of business knowledge, focusing on the business skills and integrates the business topic, situational dialogue, language function, writing mode, business practice and humanity spirit together. The textbook has the feature of systemization, interaction, relativity, topicality and fashionableness.

**Reference book:**

New BEC, John Hughes, Economy and Science Press

**Personal Credit Management (2 credits)**

**Course code**: b2030032

**Suitable majors**: Credit Management

**Instructor**: Song Huiwang, Wang Yuhan

**Brief introduction:**

The students are required to master and understand the important meaning of credit to individuals, the types of personal credit, the decision of personal credit and others. Through this course, the students are required to have a complete personal credit management sense with personal credit management knowledge and practical ability.

**Reference book:**

Consumer Credit Management, Tang Mingqing, Higher Education Press

**Prerequisite**: Introduction to Credit

**Public Relations (2 credits)**

**Course code**: b2030033

**Suitable majors**: Hospitality Management

**Instructor**: teachers from the department of PR

**Brief introduction:**

The course is a new comprehensive social applied discipline to analyze and research on the rules of public activity and its communication modes, aiming to help the students understand the basic concept, theoretical knowledge of public relations, build up correct PR sensibility, get familiar with the contents and working methods of PR affairs, understand and master the basic theory of PR, including PR introduction, generation and development of modern PR, three elements of PR, PR organization and working procedures of PR. Meanwhile, the course stresses the discussion on PR practice and skills, so that the students have a clear understanding of the organizational image analysis and design, PR processing, PR crisis processing, topic PR activity and PR communication and self-promotion.

**Reference book:**

PR—Theory, Practice and Skills, Zhou Anhua, China Renmin University Press

**Prerequisite**: Western Economics, Marketing

**Enterprise Governance (2 credits)**

**Course code**: b2030034

**Suitable majors**: Credit Management

**Instructor**: Wei Wenjing, export in the field

**Brief introduction:**

This course helps the students understand and master the agent problem, capital structure, equity structure, internal balancing organization, motivation system, market for corporate control, information declaration, organization investors’ participatory governance, group corporate governance, corporate governance mode and the corporate governance of economic transition countries.

**Reference book:**

Enterprise Governance, Li Weian, Higher Education Press

**Prerequisite**: Management

**Supply Chain Management (2 credits)**

**Course code**: b2030035

**Suitable majors**: International Business

**Instructor**: Li Hehua, Hao Hao

**Brief introduction:**

1. Combine the thoughts of strategic management and actual operation of supply chain management together and consider the design, planning and operation of supply chain together; 2. The contents are systematic and complete, imposing six driving factors of supply chain performance – facility, storage, Traffic and Transportation, information, purchasing and pricing and providing corresponding supply chain management knowledge; 3. Introduce many quantitative analysis tools and explanatory methods for the readers to analyze and solve actual supply chain management problems; 4. Each chapter designs the learning objective and detailed explanation of concept with rich cases; at the end of each chapter, there’re discussing exercise, exercises, reference literature and case analysis for the reader’s study and research.

**Reference book:**

Supply Chain Management (5th edition), Sunil Chopra, Peter Meindl, translated by Chen Rongqiu, China Renmin University Press

**Prerequisite**: Management

**Management Cost Accounting (4 credits)**

**Course code**: b2030036

**Instructor**: Tang Haiou, Shi Meiling

**Brief introduction:**

This is a selective specialty course for the major of financial management, which is a comprehensive interdiscipline integrating modern scientific management and accounting and plays a more and more important role in modern economic management. It is also a core course for the major of accounting and financial management. The course aims to help the students master the basic theory, knowledge and skills of cost accounting and modern management, the general methods and application of enterprise production economy forecasting and production operational decision, master the basic procedure, contents and methods of management cost accounting’s analyzing the past, controlling the current and planning the future, and apply the learned knowledge flexibly in accordance with the detailed environment and condition of the enterprise, laying a solid theoretical and practical basis for the economic management. The main contents include: variable cost approach, cost-volume-profit analysis, business forecasting, business decision, accumulation and distribution of product cost, activity-based cost system, overall budget and BSC system.

**Reference book:**

Management Cost Accounting, Zhang Tao, Economy and Science Press

**Prerequisite**: Accounting Theory

**Management (3 credits)**

**Course code**: b2030037

**Suitable majors**: Financial Management, E-commerce, International Business, Exhibition Economy and Management, Hospitality Management, Logistics Management, Credit Management

**Instructor**: Song Huiwang, Tao Rengquan, Hao Hao and others

**Brief introduction:**

This course is an important basic specialty course for the School of Economics and Management. Through this course, the students are able to master the basic function, theory and methods of management, laying a basis for the further learning of specialty course.

**Reference book:**

Management, Zhou Sanduo, Fudan University Press

**Management Operational Research (2 credits)**

**Course code**: b2030038

**Suitable majors**: International Business

**Instructor**: Chen Zhigang, Wang Bin

**Brief introduction:**

Through this course, the students are required to master the most basic modeling techniques, quantitative analysis and optimization method of operational research, improve their ability to solve practical problems with quantitative methods, laying a basis and providing necessary tools and methods for the learning of specialty course.

**Reference book:**

Operational Research and Application, Zhu Qiuchagn, Wuhan University Press

**Prerequisite**: Linear Algebra

**Management Consultation (2 credits)**

**Course code**: b2030039

**Suitable majors:** Financial Management

**Instructor**: Wang Kaiyun, Jing Fang

**Brief introduction:**

Through this course, the students are required to understand the related theory of management consultation, master the basic methods of management consultation and understand the main requirements and key contents of management consultation of different stages in the development of enterprise. The course mainly researches on the consultation theory, methods and technology of diagnosis and analysis of management problems of enterprises and other non-profit organizations in a relatively complete market economy. The course contents include the basis of consultation, operational type, consultation theory and tool, document collection, plan forming and execution and others. The main tasks of the course is to analyze and cultivate the students’ ability to analyze the internal and external environmental problems of the enterprises in the diagnosis and consultation of enterprise in different stages and make scientific consultation reports and conclusions with multiple technologies and methods.

**Reference book:**

Management Consultation, Ding Donghong, Tsinghua University Press

**Prerequisite**: Management

**International Freight Forwarding (2 credits)**

**Course code**: b2030040

**Suitable majors**: Logistics Management

**Instructor**: Liu Xiaorui, Cai Weiwei, Jing Ping

**Brief introduction:**

International Freight Forwarding is a core specialty course for the major of logistics. The course aims to cultivate the international freight forwarding workers with strong vocational ability, specialty knowledge and good vocational quality. Through this course, the students are required to systematically learn the theory and practical knowledge of international freight forwarding, master the order taking, space booking, cargo, Traffic and Transportation and LCL and other practical skills and scientific international freight operation and management methods, so as to provide better international freight service, ensure the safe and reasonable completion of freight, improve the freight quality and economic effect to face the more and more serious competition in the field of international freight. The course lays a solid basis for the future employment in the field of international freight forwarding and import and export business and becoming the technical talents with high quality.

**Reference book:**

International Freight Forwarding, Liu Xiaohui, Shanghai University of Finance and Economics Press

**Prerequisite**: International Trade Practice, Traffic and Transportation Management

**International Technology and Service Trade (1 credit)**

**Course code**: b2030041

**Suitable majors:** International Business

**Instructor**: Chen Ling, Yan Chunrong

**Brief introduction:**

The course is divided into two parts. The first part is international technology trade, introducing the basic concept, related theory, contents, agreement articles, transaction procedures, price and payment, laws and convention of international technology trade; the 2nd part is international service trade, introducing the basic scope, related theory of international service trade, the contents of Service Trade Agreement and the development of China’s service trade, the main international service trade industry.

**Reference book:**

International Technology and Service Trade (2nd edition), Li Jun, China Renmin University Press

**Prerequisite**: International Business, International Economics

**International Settlement (2 credits)**

**Course code**: b2030042

**Suitable majors**: Financial Management, International Business, Credit Management

**Instructor**: Wang Yuhan

**Brief introduction:**

The course objective is to help the students get familiar with all kinds of activities of international settlement, improve their practical ability. The course contents include: bill, remittance, collection, letter of credit settlement mode and the documents in international trade.

**Reference book:**

International Settlement, Su Zongxiang, China Finance Press

**Prerequisite**: International Finance

**International Finance (3 credits)**

**Course code**: b2030043

**Suitable majors**: Credit Management

**Instructor**: Wang Yuhan, Zhao Yingdong

**Brief introduction:**

The course requires the students to master the basic concept and theory of international expenses and receipts, foreign exchange rate, rate policy, foreign exchange storage, international financial market, international financial coordination, master the foreign exchange transaction business, knowledge and skills of international financial crisis management business, systematically and accurately understand the international expense and receipt balance, rate decision, international capital flowing, international financial crisis, international currency system revolution and other latest development of modern international financial theory.

**Reference book:**

12th Five-year Plan National Planning Textbook for Undergraduates- Excellent Series Textbook for Main Courses of Finance Majors: International Finance (3rd edition), Yang Shenggang, Yao Xiaoyi, Higher Education Press

**Prerequisite**: Finance

**International Economics I (English) (3 credits)**

**Course code**: b2030044

**Suitable majors**: International Business

**Instructor**: Yan Chunrong, Zhuang Wei, Jiang Hua and others

**Brief introduction:**

The course objective is to help the students master the basic concepts of international trade, the basic information of international division of labor and global market, the classic international trade theory, modern international trade theory and trade protection theory, international trade policy, regional economic integration, trade agreement and world trade organization.

**Reference book:**

International Economics (1st volume)—International Trade, Paul R Krugman, China Renmin University Press

**Prerequisite**: International Business, Western Economics

**International Economics II (English) (3 credits)**

**Course code**: b2030045

**Suitable majors**: International Business

**Instructor**: Yan Chunrong, Zhuang Wei, Jiang Hua and others

**Brief introduction:**

The course objective is to help the students master the basic concepts, knowledge and skills of international finance, China’s policy of international finance and the operation of the international finance system, so as to improve the students’ ability to analyze and solve the international finance problems correctly and lay a solid basis for the employment in related fields and further study in the future.

**Reference book:**

International Economics (2nd volume)—International Finance, Paul R Krugman, China Renmin University Press

**Prerequisite**: International Economics II

**Practice of International Trade (2 credits)**

**Course code**: b2030046

**Suitable majors**: Credit Management

**Instructor**: Yao Li, Yan Chunrong

**Brief introduction:**

Based on the mastering of basic theory of international trade, through case analysis and document examples, the course requires the students to understand how to solve practical business problems with learned theory, understand the international trade terms, international goods transaction agreement articles, negotiation and performances and international trade modes and others.

**Reference book:**

12th Five-year Plan National Planning Textbook for Undergraduates- Import and Export Trade Practice (7th edition), Wu Baifu, Xu Xiaowei, Gezhi Press, Shanghai People’s Publishing House

**International Trade Practice (3 credits)**

**Course code**: b2030047

**Suitable majors**: International Business, Logistics Management

**Instructor**: Chen Ling, Yao Wei, Zhuang Wei

**Brief introduction:**

International Trade Practice is a discipline researching on the detailed process of international commodity exchanges, which is a comprehensive applied science with the features of international activity and practicability. The course contents include theory and policy of international trade, international trade law and convention, international finance and settlement, international transport and insurance. It is a compulsory basic specialty course for the major of international business.

**Reference book:**

Instruction of Import and Export Trade Practice, Wu Baifu, Shanghai People’s Publishing House

**Prerequisite**: International Economics, Marketing and others

**International Commercial Law (2 credits)**

**Course code**: b2030048

**Suitable majors**: International Business

**Instructor**: Yu Tong, Meng Qi, Zhu Xiaocong and others

**Brief introduction:**

The course introduces the latest development of theory and practice of international commercial law, which stresses both the theoretical learning and practical application, especially a large amount of cases and reading materials covering 185 countries or areas. Through the course, the students are able to read the original English precedents and bridge the gap between lawyers of developed countries and China.

**Reference book:**

International Commercial Law, Ray August, Don Mayer, China Machine Press

**Prerequisite:** Economics

**International Business (English) (3 credits)**

**Course code**: b2030049

**Suitable majors**: International Business

**Instructor**: Yao Li, Xu Li, Jiang Hua and others

**Brief introduction:**

The course mainly researches on the business activities between countries. The main contents include cross-national economic activity and business activity. The main task of this course is to help the students understand and master the basic concept and research topic of international business, the brief information of international business activites nowadays, main types of international competition, advantages of international competition and origin, international process, selection of target market, entry strategy of market, cultural factors and its management in international business, legal factors and its management in international business, foreign exchange factors and its management in international business, the internal management of international business.

**Reference book:**

International Business, Charles Hill, China Renmin University Press

**Prerequisite**: Management

**Lectures on Frontiers of International Business (1 credit)**

**Course code**: b2030050

**Suitable majors**: International Business

**Instructor**: Yao Li, Qing Baoyan, Yan Chunrong and others

**Brief introduction:**

The course gives lectures on different topics about the hot problems and frontiers in the field of international business nowadays, so as to cultivate the students’ professionalism and sense of perspective.

**Reference book:**

Self-edited Textbook

**International Investment (2 credits)**

**Course code**: b2030051

**Suitable majors**: International Business

**Instructor**: Xu Li, Zhuang Wei, Yao Li

**Brief introduction:**

International Investment is an economic discipline researching on the international investment operation and rules and its influences on the world economy or the economy of different countries. The course objective is to help the students master the basic concept and theory of international investment, the basic concept, type, investment mode and development trend of international direct investment and international security investment, the business strategy, organizational structure and investment strategy of international company, the environment and laws and regulations of international investment, the identification and management of crisis, the development status and trend of the investment with foreign capital and investment abroad in China.

**Reference book:**

International Investment, Bruno Solnik Dennis Mcleavey, China Renmin University Press

**Prerequisite**: International Business, International Economics

**International Logistics Management (2 credits)**

**Course code**: b2030052

**Suitable majors**: Logistics Management

**Instructor**: Liu Xiaohui, Cai Weiwei, Jing Ping

**Brief introduction:**

The course is a specialty course for the undergraduates majored in logistics management, which systematically introduces the basic theory, knowledge and skills of international logistics, the transport document, transport expense, transport procedure, related international covenant, Chinese laws and regulations, transport insurance, foreign trade storage, circulation processing, loading, uploading and delivery, inspection and quarantine and custom clearance business and others. The course objective is to help the students understand the basic theory and main methods of international logistics management and cultivate their ability to solve practical problems.

**Reference book:**

International Logistics Management, Xu Liang, Zhao Xiaopeng and others, China Machine Press

**Prerequisite**:

**Custom Affairs Practice (2 credits)**

**Course code**: b2030053

**Suitable majors**: International Business

**Instructor**: Chen Ling, Xu Li, Yan Xun and others

**Brief introduction:**

Custom Affairs Practice is a discipline researching on the detailed process of China’s import and export goods custom declaration, introducing Custom management policy, regulation system of import and export goods, Custom clearance system of import and export goods, Custom taxation system, inspection and quarantine system of import and export goods.

**Reference book:**

China Custom Clearance Practice, Zheng Juntian, China Business Press

**Prerequisite**: International Trade Practice

**Korean (3 credits)**

**Course code**: b2030054

**Suitable majors**: Hospitality Management

**Brief introduction:**

The students are required to understand the brief information of Korean history, culture and education, master certain amount of vocabulary and grammar knowledge, have certain reading ability, the ability to make simple conversation in Korean and the ability of listening, speaking and writing.

**Reference book:**

College Korean I, Niu Lingjie, Peking University Press

**Prerequisite**:

**Internet Finance (2 credits)**

**Course code**: b2030055

**Suitable majors**: Credit Management

**Instructor**: Li Zhijun, Zheng Xiujun

**Brief introduction:**

The students are required to understand the six types of Internet Finance—Financial Internalization, mobile payment and third party payment, Internet currency, big data based credit investigation and Internet loans, P2P Internet Loan, public financing, discuss the application of big data in investment and crisis management and analyze typical Internet financial cases.

**Reference book:**

Self-edited Textbook

**Prerequisite**: Finance

**Basic Chemical Industry (2 credits)**

**Course code**: b2030056

**Suitable majors**: Logistics Management

**Instructor**: Zhan Wei, Liu Zhenchao

**Brief introduction:**

This course is a basic theoretical course researching on the composition, structure, property and changing rules of materials. Through this course, the students are required to systematically understand and master the basic knowledge, theory and skills of chemistry, cultivate their comprehensive analysis ability together with the related knowledge of energy, environment, materials and others, and form a serious, rigorous and practical scientific attitude and rigorous working style, laying a basis for the study of following basic specialty courses.

**Reference book:**

General Chemistry, Instruction and Research Group of General Chemistry of Zhejiang University, Higher Education Press

**Packaging Traffic and Transportation and Warehousing Management of Chemicals (2 credits)**

**Course code**: b2030057

**Suitable majors**: Logistics Management

**Instructor**: Yang Tao, Zhan Wei, Wu Xinggen

**Brief introduction:**

This course mainly introduces the Traffic and Transportation laws and regulations of dangerous goods, types and main features of dangerous goods, Traffic and Transportation packaging and marks of dangerous goods, the instruction of safety technology of chemicals, warehousing management of dangerous chemicals, marine freight safety management of dangerous chemicals, air freight safety management of dangerous chemicals, road freight safety management of dangerous chemicals, railway freight management of dangerous chemicals, pipeline freight practice of dangerous goods, logistics Traffic and Transportation accident management of chemical industry, emergency rescue and handling, logistics Traffic and Transportation risk evaluation of chemical industry, Traffic and Transportation management information system of dangerous chemicals. The course cultivates the students’ ability to work in the field of logistics of dangerous chemicals.

**Reference book:**

Logistics Traffic and Transportation Management of Chemical Industry, Ling Huidan, Shanghai University of Finance and Economics Press

**Logistics Service and Operation of Chemicals (2 credits)**

**Course code**: b2030058

**Suitable majors**: Logistics Management

**Instructor**: Hao Hao, Zhan Wei

**Brief introduction:**

This is a specialty course for the major of logistics management (special product logistics). The course mainly researches on the general rules of logistics service and operational management of dangerous chemicals and analyzes the inner meaning and management methods of logistics service enterprise from the perspective of logistics enterprise and service procedures. Through the course, the students are able to systematically master the strategy and operational mode of dangerous chemical logistics service, learn the logistics safety management, staff management and quality management of dangerous chemicals, master the basic theory and practice of logistics service operational management, skillfully complete the whole business operation process of the logistics service operation of dangerous chemicals, laying a solid basis for the study of following courses and the work in the future.

**Reference book:**

Logistics Service Operational Management of Chemical Industry, Hao Hao, Shanghai University of Finance and Economics Press

**Prerequisite**: Basic Chemical Industry, Dangerous Chemicals Packaging, Traffic and Transportation and Warehousing Management

**Logistics System Safety Management of Chemicals (2 credits)**

**Course code**: b2030059

**Suitable majors**: Logistics Management

**Instructor**: Ling Huidan, Liu Zhenchao

**Brief introduction:**

The students are required to understand the logistics system safety of special products and the inner meaning or features of its safeguarding system, the basic theory and methods of special product logistics system safety management, learn to think and solve problems with the engineering methodology of special product logistics safety system, master the basic theory and methods of analysis, evaluation and management of special product logistics system, have the basic ability of analyzing and processing different kinds of special product logistics system safety problems and build up the sense of “Safety First and Precaution Crucial”.

**Reference book:**

Traffic and Transportation Safety Management, Qing Jin, Central South University Press

**Accounting Theory (3 credits)**

**Course code**: b2030060

**Suitable majors**: Financial Management, E-commerce, International Business, Exhibition Economy and Management, Hospitality Management, Logistics Management, Credit Management

**Instructor**: Tang Haiou, Zhao Junhong, Wang Diyun and others

**Brief introduction:**

The course mainly introduces the basic theory of accounting, the composition of manual bookkeeping system and the basic operational procedure, basic management methods and basic accounting skills of that system. The main course contents include: introduction to accounting, double-entry bookkeeping, account setting, filling and approval of accounting documents, account book registration, trial balancing, adjustment and reversal, property inspection, accounting statement, accounting program and organization and others.

**Reference book:**

Accounting, Sun Ling, Cheng Li, Shanghai University of Finance and Economics Press

**Conference Oragnization and Management (2 credits)**

**Course code**: b2030061

**Suitable majors**: Exhibition Economy and Management

**Instructor**: Zeng Xuehui, Wang Shangjun

**Brief introduction:**

Conference Organization and Management is the random selective course for the major of exhibition economy and management. The course objective is to cultivate the students’ ability of planning, organization and operational management of professional conference. The course introduces the professional conference international standards, and the conference planning and management knowledge systematically from the perspective of conference organizers based on the development needs of the industry. Meanwhile, the course trains the students’ ability of professional conference project operational management. The course contents include the whole working procedures of setting of conference objective, conference need analysis, conference topic planning, venue selection, budget, conference product supplier cooperation and management, conference onsite service, conference registration, conference crisis solution plan and conference evaluation.

**Reference book:**

Self-edited Textbook, Shan Xuehui

**Exhibition Financial Management (3 credits)**

**Course code**: b2030062

**Suitable majors**: Exhibition Economy and Management

**Instructor**: teachers from the department of financial management

**Brief introduction:**

Through this course, the students are able to understand the basic contents of exhibition financial management, get familiar with different exhibition financial activities and financial relations, master the different business methods of exhibition financial management, learn the knowledge and skills of exhibition financial management, and serve for the exhibition enterprise’s business and management decision.

**Reference book:**

Financial Management, Jin Xin, Wang Huacheng, Liu Junyan, China Renmin University Press

**Exhibition Hall Operation and Management (2 credits)**

**Course code**: b2030063

**Suitable majors**: Exhibition Economy and Management

**Instructor**: Wang Shengying, Feng Lan

**Brief introduction:**

This is a selective specialty course for the major of exhibition economy and management. The course objective is to help the students master the basic theory and methods of exhibition hall operation and management, including the exhibition hall planning and venue selection, construction period control and plan management of exhibition hall, the business orientation, management methods and modes, staff management, logistics management and service and crisis management of exhibition hall.

**Reference book:**

Exhibition Hall Management, Zeng Hua, China Machine Press

**Introduction to Exhibition (3 credits)**

**Course code**: b2030064

**Suitable majors**: Exhibition Economy and Management

**Instructor**: Ling Xuqiang, Wang Shangjun

**Brief introduction:**

This course mainly introduces the basic concept and related basic knowledge of exhibition, including the brief introduction, concept and inner meaning of exhibition, exhibition industry and economy, exhibition project and management, aiming to help the students have a macro understanding of the exhibition and related knowledge and have a basic understanding of exhibition phenomenon.

**Reference book:**

Introduction to Exhibition, Gong Ping and others, Fudan University Press

**Exhibition Advertisement Planning and Making (2 credits)**

**Course code**: b2030065

**Suitable majors**: Exhibition Economy and Management

**Instructor**: Feng Lan

**Brief introduction:**

The course is a selective specialty course for the major of exhibition economy and management. The course objective is to help the students systematically learn and understand the related knowledge and skills of exhibition advertisement planning and making, including the exhibition advertisement plan, exhibition invitation advertisement planning and promotion, exhibition brand image planning and execution, exhibitor 3D advertisement planning, exhibition booth advertisement planning and making and others.

**Reference book:**

Exhibition Advertisement Planning and Making, Jiang Hong, University of International Business and Economy Press

**Exhibition Human Resources Management (2 credits)**

**Course code**: b2030066

**Suitable majors**: Exhibition Economy and Management

**Instructor**: Zhao Jun, Wang Shangjun, Sun Yan

**Brief introduction:**

Human Resources Management is a compulsory basic specialty course for the major of exhibition economy and management, including the development process and trend of modern human resources management, basic theory, technology and methods of human resources management and others. Human resources management plays an important role in the operation and management process of different exhibition enterprises. Through this course, the students are required to comprehensively and systematically master the basic theory, technology and methods of human resources management and skillfully apply those knowledge in the posts of the future.

**Reference book:**

Human Resources Management, Chen Weizheng, Higher Education Press

**Exhibition Writing (3 credits)**

**Course code**: b2030067

**Suitable majors**: Exhibition Economy and Management

**Instructor**: Feng Lan

**Brief introduction:**

The course is a specialty course for the major of exhibition economy and management. The course objective is to cultivate the students’ skillful exhibition writing ability and the collection ability of exhibition information and documents, laying a basis for the further learning and research. The course contents include the writing skills and examples of exhibition market investigation report, exhibition project plan, exhibition project feasibility report, exhibition plan, exhibition invitation plan, exhibition invitation letter, exhibition participation instruction, related activity plans of the exhibition, exhibition financial budget statement, exhibition promotional plan, exhibition advertisement, exhibition communication, exhibition period plan, exhibition news, exhibition questionnaire design, exhibition contract, exhibition agreement, exhibition evaluation report, after-exhibition summary.

**Reference book:**

Exhibition Writing and Evaluation, Xiang Guomin, East China Normal University Press

**Exhibition Onsite Service and Management (2 credits)**

**Course code**: b2030068

**Suitable majors**: Exhibition Economy and Management

**Instructor**: Wang Shangjun

**Brief introduction:**

The course mainly introduces the basic concept and inner meaning of exhibition service, the exhibition service system and service facility, exhibition service etiquette, exhibition onsite service flow and management, aiming to help the students master the basic requirements and practical operational ability of exhibition service.

**Reference book:**

Exhibition Service Management, Zhang Yuming, Zhongshan University Press

**Exhibition Project Planning (3 credits)**

**Course code**: b2030069

**Suitable majors**: Exhibition Economy and Management

**Instructor**: Gu Yingkang, Feng Lan

**Brief introduction:**

The course mainly introduces the basic knowledge, theory and methods of exhibition project planning, requires the students to master the basic procedures and skills of market investigation and plan making of exhibition projects like conference, exhibition, festival and special event, and have the ability to independently make exhibition project plans.

**Reference book:**

Exhibition Plan (2nd edition), Xu Chuanhong, Fudan University Press

Classic Cases of Exhibition Activity Plan and Management, Wang Qijing, Nankai University Press

**Prerequisite**: Introduction to Exhibition, Market Investigation and Analysis, Project Management

**Exhibition Sales (3 credits)**

**Course code**: b2030070

**Suitable majors**: Exhibition Economy and Management

**Instructor**: Wang Shangjun, Gu Yingkang

**Brief introduction:**

The course focuses on the theory of marketing, combines the marketing theory and features of exhibition activity together, from the perspective of exhibition sales object, exhibition market segment and orientation, exhibition sales strategy, exhibition sales mode, exhibition sales plan and others, introduces the basic theory and skills of exhibition sales, and cultivates the students’ exhibition market development ability, business negotiation ability, foreign language proficiency and good communication ability.

**Reference book:**

Exhibition Sales, Liu Songping, University of Electric Science and Technology Press

**Exhibition Information Management (3 credits)**

**Course code**: b2030071

**Suitable majors**: Exhibition Economy and Management

**Instructor**: Gu Yingkang, Feng Lan

**Brief introduction:**

The course mainly introduces the theory, technology and methods of exhibition information management, including the basic knowledge of exhibition information management, database and Internet, information management of exhibitor organizer and exhibition hall, exhibition management information system development and maintenance and the application of e-business and new media in exhibition enterprise’s information management, requiring the students to understand and master the basic theory and methods of exhibition information management and the procedures of exhibition information management.

**Reference book:**

Exhibition Management Information System (2nd edition), He Gang, Jin Bei, China Business Press

**Exhibition English (3 credits)**

**Course code**: b2030072

**Suitable majors**: Exhibition Economy and Management

**Instructor**: Zeng Xuehui, Feng Lan

**Brief introduction:**

Exhibition English is a compulsory course for the major of exhibition economy and management, with the objective to cultivate the students’ English reading ability related to exhibition and the English communication ability related to exhibition business activity. The course contents include the conference English and exhibition English. Conference English part includes the training of conference planning and operation and training of conference communication skills. Exhibition English part includes the learning of sponsor’s exhibition planning and training of exhibition project management skills.

**Reference book:**

Self-edited Textbook, Zeng Xuehui

**Exhibition Policy and Laws (2 credits)**

**Course code**: b2030073

**Suitable majors**: Exhibition Economy and Management

**Instructor**: Feng Lan, Gu Yingkang

**Brief introduction:**

This course is a selective specialty course for the major of exhibition economy and management. The course mainly researches on the regulations of current policy and laws on the exhibition economic and management activity and its application. Through this course, the students are able to understand the current exhibition industry policy, the exhibition management law system, master the general laws related to exhibition and its application in exhibition industry, skillfully master the special laws and regulations of exhibition industry and its operation, and cultivate their legal sensibility and professional quality.

**Reference book:**

Exhibition Policy and Laws, Cao Yong, Chongqing University Press

**Wedding Ceremony Planning and Management (2 credits)**

**Course code**: b2030074

**Suitable majors**: Exhibition Economy and Management

**Instructor**: Gu Yingkang, Wang Shangjun, Zeng Xuehui

**Brief introduction:**

Through the instruction of the planning procedures and management of wedding ceremony, the course helps the students understand the key points of wedding ceremony planning activity and management and master the basic ability of wedding ceremony planning, organization and management.

**Reference book:**

Self-edited Textbook

**Performance Management (2 credits)**

**Course code**: b2030075

**Suitable majors**: Financial Management

**Instructor**: Tang Haiou, Shi Meiling

**Brief introduction:**

Through the course, the students are required to understand the related theory of performance management, master the basic methods of performance management and understand the key index and contents of performance management of different development stages of enterprises. The course contents include: concept of performance, performance appraisal, performance management, the objective, meaning and function of performance management, the historical development of performance appraisal and performance management, the transmission from performance appraisal to performance management, the methods, technology and procedures of performance management, MBO and its application, BSC and its application, KPI and its application, detailed performance appraisal technology, 360 degree appraisal feedback and its application, FDM and its application, performance management communication technology and its application, construction and operation of performance management system.

**Reference book:**

Performance Management, Ling Xinqi, Northeast University of Finance and Economics Press

**Prerequisite**: Management

**Econometrics (3 credits)**

**Course code**: b2030076

**Suitable majors**: Financial Management, Credit Management

**Instructor**: Zheng Xiujun, Zhao Yingdong

**Brief introduction:**

The course is a basic course for the major of economics. The course requires the students to understand the role of econometrics in the course system of economics, master the basic theory and methods of econometrics and have the elementary ability to analyze and research on the actual economic problems with the econometric methods and the basic ability to operate econometric application software.

**Reference book:**

Econometric, Pan Wenqing, Li Zinai, Higher Education Press

**Organization and Management of Festival and Special Event (2 credits)**

**Course code**: b2030077

**Suitable majors**: Exhibition Economy and Management

**Instructor**: Wang Shangjun, Feng Lan, Gu Yingkang

**Brief introduction:**

The course starts from the introduction of different festivals and special events, through the analysis of features, organization and management of activities and the influences of holding venues, requires the students to understand and master the development status and market values of festivals and special events, improve their innovative thoughts and their ability of activity planning, organization and operation.

**Reference book:**

Self-edited Textbook (bilingual), Wang Shangjun

**Financial Engineering (2 credits)**

**Course code**: b2030078

**Suitable majors**: Financial Management

**Instructor**: Li Jun, Cheng Li

**Brief introduction:**

Through the course, the students are required to understand the function and roles of financial engineering in the company operation and related basic knowledge and concepts, master the basic methods and technology of design and implement the company’s financial strategy and new financial products, and master the general skills of solving the actual financial problems of the company. The course contents are as follows: basic method and theory of financial engineering, covering the concept, features and function of financial engineering, methodology, crisis and management of financial engineering, and theoretical basis of financial engineering; the features, pricing and its applications in crisis management of forward, option, future, swap and other main financial tools; the basic theories and methods of applying different financial engineering tools to construct different financial engineering structure so as to meet different financial goals.

**Reference book:**

Financial Engineering, Jiang Ping, University of International Business and Economics Press

**Prerequisite**: Finance

**Credit Management of Financial Organization (2 credits)**

**Course code**: b2030079

**Suitable majors**: Credit Management

**Instructor**: Zeng Ming, Zheng Xiujun

**Brief introduction:**

The course focuses on the different credit crisis facing the financial organization, requires the students to master the types, causes, management measures, methods and solutions of different credit crisis of different financial organizations in the business operation and management activity, so as to improve the credit management level of the financial organization and reduce the credit crisis.

**Reference book:**

Credit Management of Financial Organization, Jiao Pupu, The Open University of China Press

**Prerequisite**: Introduction to Credit

**Financial Logistics (2 credits)**

**Course code**: b2030080

**Suitable majors**: Logistics Management

**Instructor**: Ling Huidan, Zhou Yanjun

**Brief introduction:**

The course mainly introduces the basic theoretical framework, basic theory and operational mode of logistics finance and pays attention to the cultivation of students’ understanding and actual operational ability. Through this course, the students are required to have an overall and deep understanding of the basic theories of logistics finance, systematically master the basic scopes of hypothecation, “1+N” mode, crisis management, organizational structure, financial biology, financial logistics and others, master the correct methods of observing and analyzing logistics finance, cultivate their ability to discriminate the logistics finance theory and solve logistics financial practical problems and improve their quality in social practice.

**Reference book:**

Financial Logistics, Fu Xudong, New World Press

**Prerequisite**:

Finance, Traffic and Transportation Management, Warehouse and Distribution Management

**Finance (3 credits)**

**Course code**: b2030081

**Suitable majors**: Financial Management, E-commerce, International Business, Exhibition Economy and Management, Hospitality Management, Logistics Management, Credit Management

**Instructor**: Tang Jiping, Li Zhijun, Zheng Xiujun and others

**Brief introduction:**

Through the course, the students are required to master the general concept, basic theory, basic structure and basic functions of finance, get familiar with the basic knowledge of finance and feature of different financial tools, so as to meet the acutual needs of improving business and management ability and provide better scientific management services for companies.

**Reference book:**

Finance, Wei Wenjing, Shanghai University of Finance and Economics Press

**Economic Law (3 credits)**

**Course code**: b2030082

**Suitable majors**:

Financial Management, E-commerce, International Business, Exhibition Economy and Management, Hospitality Management, Logistics Management and Credit Management

**Instructor**: Qing Baoyan, Yu Tong, Zhou Yanjun and others

**Brief introduction:**

The students are required to master the basic concept, theory, laws and theoretical system framework of economic law, get familiar with the basic theory of economic law, basic economic laws and regulations and different analysis methods or views, laying a basis for the further learning and research and make preparation for the learning of following courses, so as to help the economic management workers understand the current status of China’s economic laws and regulations, master the basic laws and regulations and improve their ability to solve detailed economic legal problems.

**Reference book:**

Economic Law, Zhou Yanjun, Shanghai University of Finance and Economics Press

**Hotel Catering Service and Management (2 credits)**

**Course code**: b2030083

**Suitable majors**: Hospitality Management

**Instructor**: Duan Muhai, Xu Lingceng

**Brief introduction:**

This is a selective specialty course for the major of tourism and hospitality management (hospitality management). Based on the catering management theories, focusing on the business operational activity, the course requires the students to master the catering business practice, including the organizational structure, staff, marketing, business plan, raw material purchasing and supplying, production, product sales service, beverage sales service, banquet management and product exhibition and the detailed operation and management of product price, cost accounting and control and other steps.

**Reference book:**

Hotel Catering Management, Wang Tianyou, Tsinghua University Press

**Prerequisite**: Introduction to Hospitality Industry

**Introduction to Hospitality Management (2 credits)**

**Course code**: b2030084

**Suitable majors**: Hospitality Management

**Instructor**: Ling Xuqiang, Duan Muhai

**Brief introduction:**

The course researches on the basic concept, theory, current status and development rules of hotels and its management, which is one of the core basic specialty courses for the major of hospitality management. Through the course, the students are required to build up a complete knowledge framework of the origin, development and current status, inner meaning, operation and conditions of hotels, have an overall understanding of the scope and basic methods of hospitality management, and master the identification of hotel operation and management phenomenon and the essence and rules of hotel operation and management, laying a basis for the learning of following specialty courses.

**Reference book:**

Introduction to Hotel Management, Ding Ling, Henan People’s Publishing House

**Prerequisite**: Management, Introduction to Hospitality Industry, Microeconomics, Macroeconomics

**Hotel Conference Service and Management (2 credits)**

**Course code**: b2030085

**Suitable majors**: Hospitality Management

**Instructor**: Xu Aiping

**Brief introduction:**

The course applies new service management theory, introduces the actual experiences of hotel business management operation, the inner meaning, types, sensibility, service skills and related planning and organizational management ideas of hospitality service and management, explains on the main body service procedures and management behaviors of some detailed posts in lobby, guest room, catering, health care and refreshment, business and sales, discusses the overall strategic management of hospitality industry, interactive service quality management and dynamic evaluation and measuring methods of quality work, analyzes the related service complaint handling, and systematically analyzes and explores the new ideas of hotel service sales.

**Reference book:**

Conference Organization Management and Sales, Yang Se, Liaoning Science and Technology Press

**Prerequisite**: Introduction to Hospitality Management

**Hotel Guestroom Service and Management (2 credits)**

**Course code**: b2030086

**Suitable majors**: Hospitality Management

**Instructor**: Xu Lingling

**Brief introduction:**

The course focuses on the hotel guestroom service and management, through theoretical and practical instruction, requires the students to systematically and comprehensively master the business knowledge of guestroom operation and management, master the basic methods of guestroom service operational skills and basic level management, learn to solve the general problems in the guestroom service and management, and cultivate their practical application ability. The course contents include the understanding of guestroom and guestroom department, the organizational structure and staff of guestroom department, the clearance service of guestroom department and laundry room management, the facility management, safety management, HR management, environmental management and sustainable development of guestroom department.

**Reference book:**

Housekeeping Management, Matt A. Casado, John Wilsey & Sons, INC., Matt A. Casado, John Wiley & Sons, INC

**Hotel Lobby Service and Management (2 credits)**

**Course code**: b2030087

**Suitable majors**: Hospitality Management

**Instructor**: Xu Aiping

**Brief introduction:**

This is a compulsory specialty course for the major of hospitality management, which systematically and comprehensively introduces the theory and methods of hotel lobby service and management, focusing on the hotel lobby guest service management activity. The course contents include the basic theory of hospitality industry management (development, classification and organization of hospitality industry), lobby operational practice (lobby communication, lobby reservation service and management, lobby reception service and management, customer account management, night audit and others), lobby management (hotel information management, hotel HR management, hotel environmental management and hotel overall quality management and others). Through this course, the students are required to master the basic theory of modern lobby service and management, build up a scientific sense of service management, laying a theoretical and practical basis for the practical service management work in the future.

**Reference book:**

Self-edited Textbook

**Hotel Income Management (2 credits)**

**Course code**: b2030088

**Suitable majors**: Hospitality Management

**Instructor**: Chen Liying, Xu Aiping

**Brief introduction:**

During the economic recession, the maximization of hotel income with the income management strategy has a illuminating meaning for each professional manager of hotels. During the economic prosperous period, how to effectively get the maximum income through the best segment and combination of product, market and sales channel and the reasonable pricing with the income management strategy is a topic of this course.

**Reference book:**

Income Management, Hu Zhijian, Tourism Education Press

**Introduction to Hospitality Industry (2 credits)**

**Course code**: b2030089

**Suitable majors**: Hospitality Management

**Instructor**: Duan Muhai, Xu Lingling

**Brief introduction:**

Introduction to Hospitality and Tourism Industry is a compulsory specialty course for the major of tourism, with the objective to help the students master the segment of hospitality and tourism industry. The course contents include: the history, development and current status of hotel, private club, cruise ship, casino, theme park and other main segments of tourism industry, laying a basis for the better understanding and mastering of the development rules of tourism industry and providing references for the vocational selection in the future.

**Reference book:**

Discovering Hospitality and Tourism, Jack D. Ninemeier & Joe Perdue, Pearson Prentice Hall

**Hospitality English (2 credits)**

**Course code**: b2030090

**Suitable majors**: Hospitality Management

**Instructor**: Xu Lingling

**Brief introduction:**

This is one of the compulsory courses for the major of hospitality management in the school of economics and management. The course objective is to cultivate the students’ practical English skills necessary for the hospitality work based on the mastering of basic hospitality knowledge. The course stresses the practicability, oral-speaking ability and the skill learning. The course contents include the basic knowledge of lobby service, guestroom service, canteen service, bar service and others.

**Reference book:**

Collins Modern Hospitality Industry English, Mike Seymour, Foreign Language Instruction and Research Press

**Hotel Operational Analysis (2 credits)**

**Course code**: b2030091

Suitable major: Hospitality Management

**Instructor**: teachers from the department of financial management

**Brief introduction:**

The course focuses on the construction of financial statement analysis framework with the company financial status quality analysis theory, combines the financial statement analysis contents and the concept system and statement system of current accounting principles, integrates the latest accounting idea contained in the accounting revolution into the related steps of financial statement analysis. The main course contents include the asset quality analysis, income quality analysis, capital structure quality analysis, cash flow quality analysis, statement analysis of changes in stakeholder’s equity, consolidated financial statement analysis and others.

**Reference book:**

Financial Statement Analysis, Self-edited

**International Company’s Finance (2 credits)**

**Course code**: b2030092

**Suitable majors**: International Business

**Instructor**: Cheng Li, Wang Hui, Chen Mingdi

**Brief introduction:**

The course pays attention to the decision making in the international environment, provides a concept framework for the analysis of the main financial strategy of international company and explains on the solution of international financial problems with financial analysis and inference from the perspective of data and theory through a large amount of examples. The course also discusses all the traditional fields of company’s financial management, including operational capital management, capital budge, capital cost and finance structure, pays attention to the decision factors seldom faced by domestic company, including multiple currencies whose foreign exchange rate changes frequently and different kinds of inflation rate, different taxation system, multiple currency market, foreign exchange controlling system and political risk and others.

**Reference book:**

Basic Finance Basis of International Company (6th edition), Alan C Shapiro, Atulya Sarin, translated by Jiang Ping, China Renmin University Press

**International Company’s Finance (3 credits)**

**Course code**: b2030093

**Suitable majors**: Financial Management

**Instructor**: Cheng Li, Wang Hui, Chen Mingdi

**Brief introduction:**

Through the course, the students are able to understand the international company’s finance is a new field of modern financial management. With the development of economic globalization, international company has become the main driver for the economic globalization. The mastering of international company’s finance knowledge has an important meaning for the improvement of competitiveness of international company and groups in China. Through the course, the students are also required to understand the basic contents of the international company’s finance, master all kinds of business of international company’s finance, and serve for the company’s operational and management decision with the application of finance knowledge and skills of international company.

**Reference book:**

Basic Finance Management of International Company, Alan C. Shapiro, China Renmin University Press

**Prerequisite**: Financial Management I, Financial Management II

**Cross-border E-commerce (2 credits)**

**Course code**: b2030094

**Suitable majors**: E-commerce

**Instructor**: Chen Wei, Wu Cuihong

**Brief introduction:**

The course helps the students understand and master the knowledge and contents closely related to the cross-boarder e-commerce with the latest trend in the field of e-commerce. The course contents include the new thoughts of foreign trade, policy analysis of cross-border e-commerce, marketing of cross-border e-commerce, logistics operation in cross-border e-commerce, the settlement of cross-border e-commerce company and case analysis of cross-border e-commerce company and field visit.

**Reference book:**

Cross-border E-commerce—Sales Bible of Alibaba, Sumaitong University, Electric Industry Press

**Express Delivery Operation and Management (2 credits)**

**Course code**: b2030095

**Suitable majors**: Logistics Management

**Instructor**: Liu Xiaohui, Cai Weiwei

**Brief introduction:**

The course systematically introduces basic theory, business operational procedures and corresponding management skills of express delivery. The contents focusing on the express delivery service process, are divided into 8 parts, including introduction, etiquette, business operation of receiving and sending, express processing, express delivery business operation, express insurance and compensation, express delivery service promotion and customer management, express and e-commerce and others. The course objective is to help the students understand and master the basic theory, business operational procedures and management skills of express delivery with strong practicability.

**Reference book:**

Operation and Management of Express Delivery Business, Wang Yangjun, Chemical Industry Press

**Framework Development Technology (2 credits)**

**Course code**: b2030096

**Suitable majors**: E-commerce

**Instructor**: Pan Hailan, Chen Jian, Yan Jihong

**Brief introduction:**

The course objective is to help the students understand and master the background and related knowledge of e-commerce project construction, master the working theory and methods of core parts of e-commerce project, complete the construction of e-commerce website with the J2EE open source framework and database knowledge, so as to master the process of developing and maintaining a e-commerce website and integrating the knowledge of e-commerce website operation and management into the process of website development.

**Reference book:**

Java EE-based E-commerce Website Construction, Pan Hailan, Wang Anbao, Xidian University Press

**Prerequisite**: E-commerce Development Technology

**Ethics and Vocational Moral (2 credits)**

**Course code**: b2030097

**Suitable majors**: Financial Management

**Instructor**: Wang Hui, Zhao Junhong

**Brief introduction:**

The course comprehensively analyzes the importance of business ethics and accounting vocational morals in the work of accounting with a large amount of vivid cases based on the actual situation of social and economic life at home and abroad. The course contents are divided into four parts: the 1st part includes morals, business ethics, importance of accounting vocational morals and the necessity of accounting vocational morals; 2nd part is the basic theory of ethics and morals, including morals, business ethics and accounting vocational morals; the 3rd part is business ethics and credit sensibility, including the 8 aspects of business ethics and morals principle design, the external and internal management ethics and morals of enterprises, providing a blueprint for the construction of company’s credit management system; 4th part is accounting vocational moral standards system, including the strengthening of accounting vocational education, constructing a good social moral environment for the accounting industry and the detailed requirements on the vocational morals of accountants under the market economic environment.

**Reference book:**

Business Ethics and Accounting Vocational Moral, Leonard J Cruise, China Renmin University Press

**Internal Control (2 credits)**

**Course code**: b2030098

**Suitable majors**: Financial Management

**Instructor**: Bian Lingling, Li Jun

**Brief introduction:**

The course introduces the basic theory and practice of internal control, helps the students master knowledge including the objective and contents of modern company’s internal control, internal control system framework, organizational control, financial control, tangible assets control, staff control, financial risk protection control and budget management, and master the basic knowledge, skills and operational ability of enterprise financial management especially the financial control. The students are required to meet the following requirements: master the basic concepts of internal control and budget management, master the basic factors of enterprise’s internal control, master the accounting control and monitoring of enterprise’s main business procedures.

**Reference book:**

Enterprise Internal Control, Zheng Hongtao, Northeast Finance and Economics Press

**Prerequisite**: Management, Accounting Theory

**Tax Planning (2 credits)**

**Course code**: b2030099

**Suitable majors**: Financial Management

**Instructor**: Wang Diyun, Zhao Junhong

**Brief introduction:**

Tax Planning is a comprehensive applied discipline based on the disciplines of taxation, accounting, investment principles and management, which is a boundary discipline. The course requires the students to learn the tax planning and save tax cost for the company based on the mastering of basic tax knowledge. The course contents include: the basic knowledge and theoretical contents of tax planning, like the inner meaning, meaning of tax planning, the fifernece between tax planning and related tax saving behaviors, the relationship between tax planning and tax accountants, the basic skills and methods of tax planning, the main steps and other contents of tax planning, the technical instructional knowledge of practical operational business of tax plans, the explanation on the value-added tax, consumption tax, business tax, income tax and other main taxes.

**Reference book:**

Tax Planning, Wang Shufeng, Lixin Accounting Press

**Prerequisite**: Tax Law and Tax Accounting

**Enterprise Business Account Management (2 credits)**

**Course code**: b2030100

**Suitable majors**: Credit Management

**Instructor**: Wei Wenjing, experts from the field, Zeng Ming

**Brief introduction:**

The students are required to master the knowledge about causes of receivables, risk prevention, cleaning, the development and management of China’s receivables and analyze the cases of receivable management.

The course requires the students to firmly master the basic knowledge and theory of this course, and learn the business account management with the learned receivable management methods based on the actual situation of China.

**Reference book:**

Enterprise Credit Management, Gao Xiuping, Shanghai University of Finance and Economic, 1st edition (July 1 of 2013)

**Prerequisite**: Introduction to Credit, Accounting Theory

**Enterprise Strategy Management (2 credits)**

**Course code**: b2030102

**Suitable majors**: Financial Management, Credit Management

**Brief introduction:**

The course helps the students understand the basic thoughts, theory and concepts of enterprise strategy management in the mixed way of theoretical instruction and case analysis or discussion. The students are required to master the basic methods and operational skills of enterprise strategy, so as to lay a basis for the work of strategy management in the cross-functional field. The course contents include introduction to strategy management, external environmental analysis, internal environmental analysis, mission and strategic objective, strategy selection, competition strategy selection and others.

**Reference book:**

Enterprise Strategy Management—Theory and Cases, Yang Xihuai, Higher Education Press

**Prerequisite**: Management

**Human Resources Management (2 credits)**

**Course code**: b2030103

**Suitable majors**: International Business, Hospitality Management

**Instructor**: Tao Rengquan and others

**Brief introduction:**

This is a basic compulsory specialty course for the major of financial management. Through this course, the students are able to have an overall understanding of the basic theory, methods and working contents of HR management.

**Reference book:**

HR Management, Qing Zhihua, China Renmin University Press

**Prerequisite**: Management

**Japanese (3 credits)**

**Course code**: b2030104

**Suitable majors:** Hospitality Management

**Brief introduction:**

The students are required to understand the brief information of Japanese history, culture and education, master a certain vocabulary, grammar knowledge, have certain reading ability and have the ability to make simple conversations in Japanese and the elementary ability of listening, speaking and writing.

**Reference book:**

College Japanese (1st volume), Li Qiang, Peking University Press

**Business Communication (2 credits)**

**Course code**: b2030105

**Suitable majors**: International Business

**Instructor**: Zhuang Wei, Yao Li

**Brief introduction:**

The course covers the topics of modern business communication, interpersonal communication, business writing, business lettering, business report, oral communication and employment communication. The course helps the students analyze communication tasks, instruct the students to use communication strategy and steps and process the task in a most effective way through case analysis focusing on the main business communication modes and methods. The course helps the students to learn the way of problem thinking and solution and the students are able to deeply understand the sensibility of communication and apply them in the business practice.

**Reference book:**

Business Communication (7th edition), Scot Ober, Qian Feng, World Books Publishing House

**Business Database Technology and Application (2 credits)**

**Course code**: b2030106

**Suitable majors**: E-commerce

**Instructor**: Yan Jihong, Chen Jian, Jiang Wenrong

**Brief introduction:**

The course is a basic selective specialty course for the major of e-commerce. Through the course, the students are able to understand the basic concept of business database, master the basic knowledge and skills of business database and the main application technologies of business database. The main contents include: programming of DB2 with Java, development of Java application program and small application program with JDBC, construction of dynamic SQL and statistic SQL program, DB2 trigger, SQLJ programming, DB2 storage process, UDT, UDF and large object.

**Reference book:**

Business Database Technology and Application, Department of E-commerce, Self-edited

**Prerequisite**: Basic Program Design (Java), Basic Database Application

**Business Negotiation Techniques and Business Etiquette (2 credits)**

**Course code**: b2030107

**Suitable majors**: Hospitality Management

**Instructor**: Xu Aiping

**Brief introduction:**

The course systematically introduces the negotiation theory, practice, rules, etiquette and art in business activities. Through this course, the students are required to master the basic theory and practice of business negotiation, understand and master the contents, program, rules, strategy of different stages, skills and etiquettes of business negotiation and master negotiation skills and strategies through case analysis and discussion, have the ability to operate and apply the business negotiation theories and have the basic negotiation quality and ability.

**Reference book:**

Business Negotiation, Li Ljevic, China Machine Press

**Business Negotiation and Skills (3 credits)**

**Course code**: b2030108

**Suitable majors**: Exhibition Economy and Management

**Instructor**: Feng Lan, Wang Shengying, Zeng Xuehui

**Brief introduction:**

The course is a specialty course for the major of exhibition economy and management. The course objective is to help the students understand the basic procedures of business negotiation, master the related skills of business negotiation, including the preparation, opening, discussion, ending and signature, psychology of business negotiation.

**Reference book:**

Business Negotiation Skills, Liu Yan, Posts & Telecom Press

**Business English Listening and Speaking (2 credits)**

**Course code**: b2030109

**Suitable majors**: International Business

**Instructor**: Yao Li, Yao Wei, Zhang Qing and others

**Brief introduction:**

The course provides a new way of learning, which is learning business English from experiences so as to improve the students’ ability of business communication in English.

**Reference book:**

Experiencing Business English (Instruction for Listening and Speaking 2), Editing Group of Experiencing Business English, Evans. D. Strutt.P, Higher Education Press

**Business Intelligence (Bilingual) (2 credits)**

**Course code**: b2030110

**Suitable majors**: E-commerce, International Business

**Instructor**: Chen Jian, Jiang Wenrong

**Brief introduction:**

Through the course, the students are required to master the basic concept and related basic technology of business intelligence. The basic course contents include: business intelligence project management, basic concept of data warehouse, basic concept and technology of data mining. Through the course, the students are able to have an overall understanding of the related concept of business intelligence and the basic technology of data mining, like the associative rules, classification and forecasting, cluster group and others and master its application into practical problems.

**Reference book:**

Business Intelligence, Zhao Weidong, Tsinghua University Press

**Prerequisite**: Probability and Mathematical Statistics, General English III, General English IV

**Business Intelligence (2 credits)**

**Course code**: b2030111

**Suitable majors**: Hospitality Management

**Instructor**: teachers from e-commerce department

**Brief introduction:**

The business intelligence and data mining is the hot points of enterprise informationalization in recent years, including the introduction of business intelligence, core technology of business intelligence, business intelligence and knowledge management, application of business intelligence, data mining basis, objective and task of data mining, technology of data mining, web mining technology, the application of data mining in e-commerce. The course combines the contents of statistics, machine learning, database, artificial intelligence and others, with the interdisciplinary features and integration of technology and management.

**Reference book:**

Business Intelligence, Zhao Weidong, Tsinghua University Press

**Business Factoring (2 credits)**

**Course code**: b2030112

**Suitable majors**: Credit Management

**Instructor**: Zeng Ming, Yang Jun

**Brief introduction:**

The students are required to master the structure and procedures of business factoring, product management, risk management, operational management, capital flow management and development trends of business factoring, and understand detailed business factoring cases.

**Reference book:**

Operational Practice of Business Factoring, Qing Guoyong, China Law Press

**Business Banking Business (2 credits)**

**Course code**: b2030113

**Suitable majors**: Credit Management

**Instructor**: Xiao Zhirun, Gao Xiuping

**Brief introduction:**

The students are required to understand the origin and development, organizational structure of business banks, the supervision of government on the banking industry, master the business and management of business banks’ source of funds (including the capital management and debt management), the asset business and management of business banks, the performance evaluation of business banks and understand the merging of international banking industry and China’s banking market and the development trend of the banking industry in the future.

**Introduction to Luxury Products (2 credtis)**

**Course code**: b2030114

**Suitable majors**: Hospitality Management

**Instructor**: Sun Yan, Xu Lingling

**Brief introduction:**

With the speeding up of economic globalization and internationalization, the luxury products has entered into people’s daily life, covering the field of auto manufacturing, product design, yacht, cruise and others. As the students majored in hospitality management of applied college, the students are required to understand and master the related knowledge so as to improve the level of hospitality production and service development. The course introduces the history of luxury brands, select classic works and cases, explains the extreme beauty and the features of production, operation, design and sales, so as to help the students appreciate the stunning classic works from history and feel the deep-rooted history from classicalness, so as to understand the true inner meaning of luxury products and lay a good basis for the successful service.

**Reference book:**

Luxury Talent Management, Michel Gutsat, Palgrave Macmillan

**Social Credit (2 credits)**

**Course code**: b2030115

**Suitable majors**: Credit Management

**Instructor**: Rao Minghua, Wang Yuhan

**Brief introduction:**

The students are required to master the knowledge of other business credit besides the financial credit, understand the information and cases of social credit, administrative affairs credit and judicial integrity, so as to promote the students’ overall understanding of China’s social credit system construction.

**Reference book:**

Self-edited Textbook

**International Project Management (2 credits)**

**Course code**: b2030116

**Suitable majors**: International Business

**Instructor**: Tao Rengquan, Jiang Hua, Chen Zhongyi

**Brief introduction:**

The course introduces the basic theory and concept of project management, dicusses the latest development trend in the field of international business and covers all the key fields of international project management.

**Reference book:**

Project Management: Systematical Methods of Planning, Scheduling and Controlling), Kerzner H. translated by Yang Aihua, Wang Lizhen, Hong Yu and Li Mengting, Publishing House of Electronics Industry

**Auditing (4 credits)**

**Course code**: b2030117

**Suitable majors**: Financial Management

**Instructor**: Bian Lingling, Shi Meiling

**Brief introduction:**

Through the course, the students are required to master the basic theory and methods of auditing, understand the importance and necessity of auditing in China, and acquire the basic knowledge, skills and operational ability necessary for the auditing work. The course contents include: basic concept of auditing, CFA management and legal responsibility, auditing objective determination, auditing evidence acquisition and sampling technology, auditing plan making and internal control test, auditing report making, auditing of sales, purchasing, production, fund-raising and investment.

**Reference book:**

Auditing, China Association of Certified Public Accountants, Economy and Science Press

**Prerequisite**: Financial Accounting I, Financial Accounting II, Financial Analysis

**World Architectural Aesthetics (2 credits)**

**Course code**: b2030118

**Suitable majors**: Hospitality Management

**Instructor**: Ji Xiaoliang

**Brief introduction:**

The course is a basic cultural course for the cultivation and improvement of students’ aesthetical quality and ability. Through the course, the students are required to understand the origin and development of domestic and foreign architectures, master the basic knowledge of architecture, the elements of architectural aesthetics and the features of different architectural styles so aso to acquire certain architectural aesthetic quality and lay a basis for the work in the field in the future. The course contents include the basic concept of architecture and the typical architectures in different stages, like the European architecture, Islam architecture, China and East Asian architecture, Indian and South Asian architecture and the world’s modern architectures.

**Reference book:**

Architectural Aesthetics, Shen Fuxu, China Architectural Industry Press

**Market Investigation and Analysis (3 credits)**

**Course code**: b2030119

**Suitable majors**: Exhibition Economy and Management

**Instructor**: Gu Yingkang, Feng Lan

**Brief introduction:**

The course mainly introduces the function, subject and object, procedure, error control and other basic theoretical knowledge of market investigation, focuses on the development features and needs of exhibition industry, helps the students understand the main methods or skills of market investigation design, sampling, data collection, measurement and data processing and have the ability to carry out market analysis and estimation based on the investigation data.

**Reference book:**

Market Investigation and Analysis Forecasting (2nd edition), Zhang Canpeng, Guo Jianchagn, Tsinghua University Press, Peking Jiaotong University Press

**Market Investigation and Forecasting (1 credit)**

**Course code**: b2030120

**Suitable majors**: International Business

**Instructor**: Yao Li, Zhuang Wei, Zeng Jing

**Brief introduction:**

This is a practical course, which mainly includes the basic concept of market investigation and market forecasting, design of market investigation plans, methods and sampling technology of market investigation, collection and analysis of market investigation documents, market forecasting theory, qualitative and quantitative forecasting and others. The course pays attention to the enlightening of students and improvement of their basic knowledge and skills, which lays a solid basis for the practical work in the field of market investigation and forecasting.

**Reference book:**

Market Investigation and Forecasting, Luo Hongqun, Wang Qinghua, Tsinghua University Press

**Prerequisite**: Marketing

**Marketing (2 credits)**

**Course code**: b2030121

**Suitable majors**: Hospitality Management

**Instructor**: Xu Aiping, Duan Muhai

**Brief introduction:**

The course covers all the aspects of enterprise’s marketing sales and management with the feature of project instruction, including the core concept of marketing and different ideas of marketing, the environmental analysis of marketing, purchasing behavior analysis of consumers, market investigation and forecasting, marketing strategy, product strategy, price strategy, distribution strategy and promotion strategy. The course requires the students to cultivate their correct marketing ideas starting from the industry or fields they are familiar with, understand the importance of strengthening the marketing management, understand and analyze the marketing environment, research on basic procedures and methods of market purchasing behaviours, making combined marketing strategy, organizing and controlling the marketing acitivity, improve their basic ability to solve the marketing problems with the marketing theory, systematically master the basic methods and strategy of marketing activity, so as to lay a basis for the students to meet the requirements of the marketing management and provide reference or instructions for the actual work.

**Reference book:**

Marketing, Wu Sizong,Tsinghua University Press

**Marketing (2 credits)**

**Course code**: b2030122

**Suitable majors**: International Business

**Instructor**: Zhuang Wei, Zhang Qing, Zeng Jing and others

**Brief introduction:**

Marketing is an interdisciplinary applied course based on the economic, modern management and behavioral science with the comprehensive and boundary features, which belongs to the discipline of management. The core contents of the course can be summarized as how to make enterprise’s development strategy, organize enterprise marketing activity out of the customers’ needs under the conditions of buyer’s market, so as to make the enterprise survive and develop in the seriously competitive market environment. The course mainly introduces the basic ideas of modern marketing and all kinds of marketing strategy focusing on the marketing combination. It is an important course of the management discipline for the cultivation of applied talents to meet the needs of socialism market’s economic development.

**Reference book:**

Marketing, Wei Wenjing, Fudan University Press

**Prerequisite**: Management

**Big Data Analysis (2 credits)**

**Course code**: b2030123

**Suitable majors**: E-commerce

**Instructor**: Yan Jihong and Jiang Wenrong

**Brief introduction:**

Through the course, the students are required to have a systematic understanding of the basic theory of data analysis methods, master the methods and procedures of data statistic analysis with professional software, cultivate their ability of statistical analysis with computer, master the theory of data distribution, digital features and related analysis of multi-dimensional data. The course contents include: linear regression analysis, variance analysis, discriminant analysis, cluster analysis, and similarity measurement.

**Reference book:**

Data Analysis Methods, Mei Changling, Fan Jincheng, Higher Education Press

**Prerequisite**: Applied Statistics, Probability and Mathematical Statistics

**Data Structure and Algorithm (Java) (3 credits)**

**Course code**: b2030124

**Suitable majors**: E-commerce

**Instructor**: Jiang Wenrong, Pan Hailan, Wu Cuihua and Yan Jihong and others

**Brief introduction:**

Through the course, the students are required to analyze the logic structure, storage structure and basic algorithm of different data elements, master the complex analysis of algorithm so as to select accurate storage structure and corresponding algorithm for the solution of practical problems.

The course takes Java as the descriptive language, uses the object-orientation method, requires the students to skillfully master the logic structure, storage structure and basic algorithm of linear structure (linear table, stack, queue, series and array), tree structure (tree, binary tree), network structure (drawing), describe the searching and internal sequencing, master the complex analysis of algorithm, improve their program design and realization ability and master the basic methods of algorithm design.

The course contents include: linear structure (linear table, stack, queue, series and array), tree structure (tree, binary tree), network structure (drawing), the searching and internal sequencing.

**Reference book:**

Java Software Structure and Data Structure (4th edition), John Lewis, Joseph Chase, translated by Jin Ming, Tsinghua University Press

**Prerequisite**: Basic Program Design (Java)

**Basic Database Application (2 credits)**

**Course code**: b2030125

**Suitable majors**: E-commerce

**Instructor**: Yan Jihong, Jiang Wenrong, Pan Hailan

**Brief introduction:**

Basic knowledge of database, including the concept of data, database, database management system, database system; data model and database system structure, relational database, SQL language, database protection, database design, database application system development, the development trend and frontiers of database technology

**Reference book:**

Database Technology and Applicatin, Wang Chengliang, Liu Ling, Xu Ling, Tsinghua University Press

**Prerequisite**: Basic Program Design (Java)

**Tax Law and Taxation Accounting (3 credits)**

**Course code**: b2030126

**Suitable majors**: Financial Management

**Instructor**: Wang Diyun and Zhao Junhong

**Brief introduction:**

The course requires the students to master the basic laws and regulations of current tax types, the computation, application, payment and accounting of taxes and others. The course contents include the basic theory of tax law and taxation accounting in the new tax system in China, circulation tax and accounting processing, income tax and accounting processing, resource tax and accounting processing, asset and behavioral tax and accounting processing, objective tax and accounting processing.

**Reference book:**

Tax Law and Taxation Accounting, Hu Xiaoxia, China Agricultural University Press

**Prerequisite**: Financial Accounting I, Financial Accounting II

**Investment Economics (3 credits)**

**Course code**: b2030127

**Suitable majors**: Financial Management

**Instructor**: Wang Yuhan, Tang Jiping

**Brief introduction:**

Through the course, the students are required to understand and master the basic contents of investment in market economy, movement rules of investment, the important role and function of investment, basic theory and different methods of investment activity, and cultivate and improve their ability to research and solve practical investment problems in investment practice. The course contents include key concept, investment activity and environment, investment subject, investment scale and others.

**Reference book:**

Investment Economics, Luo Lele, Science Press

**Prerequisite**: Finance, Financial Management I and Financial Management II

**Investment Principle I**

**Course code**: b2030128

**Suitable majors**: Credit Management

**Instructor**: Tang Jiping, Song Huiwang

**Brief introduction:**

Master the security investment elements, basic function of security market, the features of security issuing market and security circulation market, the determination of value security price, macro-economic analysis of security investment, industry lifecycle analysis, analysis of basic information of enterprise, technological analysis and modern security investment theory. The course requires the students to firmly master the basic knowledge and theory of the course and research or analyze the security market problems with the learned knowledge and theory based on the actual situation of China.

**Reference book:**

Investment Principle (9th edition), Zvi Bodie, Alex Kane, China Machine Press

**Prerequisite**: Finance

**Investment Principle II (2 credits)**

**Course code**: b2030129

**Suitable majors**: Credit Management

**Instructor**: Tang Jiping, Song Huiwang

**Brief introduction:**

The course requires the students to master the basic knowledge and theories of main financial derivatives market, the transaction tools, operational system and operational rules, understand the relations between risks, and get familiar with the analysis methods and management methods of investment, laying a basis for the economic work in the future.

**Reference book:**

Investment (9th edition), Zvi Bondie, Alex Kane, China Machine Press

**Prerequisite**: Finance

**Internet Marketing (2 credits)**

**Course code**: b20301030

**Suitable majors**: E-commerce, Hospitality Management

**Instructor**: Chen Wei

**Brief introduction:**

Through the course, the students are required to master the basic theory and methods of e-commerce marketing, learn to use the service tools of Internet marketing and design websites, use the pricing strategy of different e-commerce marketing, apply the technology of constructing the e-commerce marketing channels, Internet promotion methods and the Internet advertisement methods, and understand the execution, organization and controlling of e-commerce marketing.

**Reference book:**

Internet Marketing, Wang Shaohua and others, Xidian University Press

**Internet and New Media Marketing (2 credits)**

**Course code**: b2030131

**Suitable majors**: Exhibition Economy and Management

**Instructor**: Gu Yingkang, Feng Lan

**Brief introduction:**

The course introduces how the exhibition industry use the Internet and new media to carry out related marketing activities so that the students are able to understand the latest features of Internet and new media marketing and skillfully master the basic skills of exhibition marketing.

**Reference book:**

Self-edited Textbook

**Internet Payment and Settlement (2 credits)**

**Course code**: b2030132

**Suitable majors**: E-commerce, International Business

**Instructor**: Yu Ying, Wu Cuihong

**Brief introduction:**

The course objective is to help the students understand and master the payment activity, theory, mode and tools, understand the payment system, the difference between traditional payment and e-payment and its corresponding system, understand and master the basic procedures, mode and safety measures of Internet payment and settlement, understand and master the payment process of e-currency, Internet payment mode and system.

**Reference book:**

Internet Payment and Settlement, Zhang Kuanhai, Higher Education Press

**Webpage Design (3 credits)**

**Course code**: b2030133

**Suitable majors**: E-commerce

**Instructor**: Wu Cuihong, Pan Hailan, Yan Jihong

**Brief introduction:**

Through the course, the students are required to understand the webpage design principles, the webpage layout methods and mode, the words and contents design of webpage, get familiar with the website planning and some dos and don’ts, the methods and skills of webpage design, and design standard and beautiful webpage. The course contents include: graphic processing, animation making, website planning, webpage layout, webpage design, webpage making and others.

**Reference book:**

Instruction of Web Program Design Cases, Lv Bing, Henan University Press

**Law, Regulations and Standards of Dangerous Goods Logistics (2 credits)**

**Course code**: b2030134

**Suitable majors**: Logistics Management

**Instructor**: Zhou Yanjun and Meng Qi

**Brief introduction:**

This course is a compulsory course for the major of logistics management (special goods logistics). The theory and practice of laws, regulations and standards of dangerous chemicals logistics is the necessary knowledge for the senior talents in the field of logistics management. The course researches on the concept, content and methods of laws, regulations and standards of dangerous chemicals logistics field, requiring the students to skillfully apply the rules and methods of dangerous chemicals logistics to make logistics management activities. The course also requires the students to understand and master the laws and regulations on dangerous goods, dangerous goods delivery vehicles, dangerous goods packaging, dangerous goods Traffic and Transportation, dangerous goods storage and accident report and investigation processing.

**Reference book:**

Law, Regulations and Standards of Dangerous Goods Logistics, Zhou Yanjun, Shanghai University of Finance and Economics Press

**Logistics Cost Management (2 credits)**

**Course code**: b2030135

**Suitable majors**: Logistics Management

**Instructor**: Liu Zhenchao, Chen Zhigang

**Brief introduction:**

This course is a random selective specialty course for the major of logistics management, a science researching on the cost structure and features of all kinds of logistics activities and the methods of logistics cost control. The main objective is to help the students master the new modes of logistics cost management and controlling technology of logistics cost. The course provides an effective path for the students to reduce the enterprise’s total logistics cost and improve the enterprise’s competitive advantage in the future.

**Reference book:**

Logistics Cost Management, Yi Hua, Tsinghua University Press

**Prerequisite**: Accounting Theory, Traffic and Transportation Management, Storage and Distribution Management

**Logistics Geography (2 credits)**

**Course code**: b2030136

**Suitable majors**: Logistics Management

**Instructor**: Jing Ping, Yao Wei

**Brief introduction:**

This is an important basic specialty course for the major of logistics management, a basis for the learning of other specialty courses, a course researching on the geographic distribution rules of elements of logistics economic activity spatial system in different countries and areas. The course objective is to help the students understand the geographic distribution of four basic elements of logistics economic activity spatial system: Traffic and Transportation routes, Traffic and Transportation tool, transport node, geographic distribution of goods, understand the distribution difference of elements in different countries and different areas and the internal relations between different elements and master the geographic distribution rules of elements in the logistics economic activity spatial activity.

**Reference book:**

International Logistics Geography, Wang Xuefeng, Shanghai Jiaotong University Press

**Logistics Laws and Regulations (2 credits)**

**Course code**: b2030137

**Suitable majors**: Logistics Management

**Instructor**: Meng Qi and Zhou Yanjun

**Brief introduction:**

This is a basic specialty course for the major of logistics management. The course comprehensively introduces the logistics-related laws and regulations based on the related courses of law basis and economic laws, together with the laws and regulations of different steps of logistics management. The course requires the students to understand the domestic and foreign laws and regulations related to logistics process, describe the laws, regulations, international covenants and international conventions related to the different steps of logistics process, master some logistics legal knowledge, understand the legal principle and standards related to logistics and learn to apply the legal knowledge to solve problems.

**Reference book:**

Introduction to Logistics Law, Meng Qi, Shanghai University of Finance and Economics Press

**Prerequisite**: Economic Law, Traffic and Transportation Management, Storage and Distribution Management

**Logistics Risk and Insurance (2 credits)**

**Course code**: b2030138

**Suitable majors**: Logistics Management

**Instructor**: Zhou Yanjun, Meng Qi

**Brief introduction:**

The course systematically introduces the practical problems of logistics insurance, which is an effective measure to control and safeguard the operational risks in different stops of logistics activity. The course requires the students to master the basic knowledge of risk, risk management and logistics risk management, the concept, features, function, types and basic principles of insurance, insurance contract knowledge, goods Traffic and Transportation insurance, logistics delivery vehicle insurance, logistics goods insurance, logistics responsibility insurance and logistics insurance operational practice and other knowledge or skills. The main task of the course is to cultivate the students’ logistics risk identification and protection ability.

**Reference book:**

Logistics Insurance Practice, Zhou Yanjun, Tsinghua University Press

**Logistics Engineering (2 credits)**

**Course code**: b2030139

**Suitable majors**: Logistics Management

**Instructor**: Wu Xinggen, Yang Tao, Chen Zhigang

**Brief introduction:**

This course is a basic specialty course for the major of logistics management, researching on the stress analysis, system of plane intercrossing forces, couple system, arbitrary force system in statics, the stretching and pressing, cutting and squeezing, twisting, bending internal force, bending stress, bending deformation and combined deformation in material mechanics. Through the course, the students are required to master the concept of force, force analysis of component, deformation analysis of object and stress computation of component, providing the most basic mechanic theory and algorithm for the solution of strength, stiffness and stableness problem of components and laying a basis for the learning of other specialty courses and work in the field of logistics management in the future.

**Reference book:**

Logistics Engineering, Dong Qianli, People’s Traffic and Transportation Press

**Logistics Customer Service (2 credits)  
Course code**: b2030140

**Suitable majors**: Logistics Management

**Instructor**: Hao Hao, Zhou Yi, Wu Xinggen

**Brief introduction:**

Logistics Customer Service is a compulsory course for the major of logistics management. Theory and practice of logistics customer service is a necessary knowledge field for the senior talents in the field of logistics management. The course researches on the concept, contents and methods of logistics customer service and requires the students to skillfully apply the thoughts and methods of logistics customer service into the logistics management. The course also requires the students to understand and master the basic concept of logistics customer service, modern customer management and logistics customer management innovation, searching, collection and classification of logistics customer information, the basic contents of customer satisfaction, logistics customer values and logistics customer management, the exploration methods and retention methods of logistics customer and the application of CRM in logistics customer management.

**Reference book:**

Logistics Customer Service, Li Yafeng, China Economy Press

**Logistics System Planning and Design (2 credits)**

**Course code**: b2030141

**Suitable majors**: Logistics Management

**Instructor**: Yang Tao, Liu Zhenchao, Chen Zhigang

**Brief introduction:**

This course is a specialty course for the major of logistics management and other related majors. The course not only combines the related knowledge of different basic courses, but also uses detailed examples to cultivate the students’ ability of logistics system planning and design. The course requires the students to apply the theory and analysis methods of logistics system planning and design and make scientific planning and designing schemes with the theoretical methods and drawing tools.

**Reference book:**

Logistics System Planning and Design, Zhang Li, Tsinghua University Press

**Prerequisite**: Purchasing and Supply Chain Management, Traffic and Transportation Management, Storage and Distribution Management, Logistics Information Management

**Logistics Information Management (2 credits)**

**Course code**: b2030142

**Suitable majors**: Logistics Management

**Instructor**: Chen Zhigang, Liu Xiaohui

**Brief introduction:**

Based on the modern information management technology and other related advanced theory or methods, with the rapid development of logistics, the course systematically introduces the concept, structure of logistics management information system and the related logistics information technology like automatic identification technology, GIS and GPS, decision analysis technology, describes the process of logistics information system’s development and project management, and explains on the influences of information storage technology, information safety and controlling technology on the logistics management information system.

**Reference book:**

Logistics Information Management, Liu Xiaohui, China Fortune Press

**Logistics Operational Research (2 credits)**

**Course code**: b2030143

**Suitable majors**: Logistics Management

**Instructor**: Chen ZHigang, Yang Tao

**Brief introduction:**

The course contents include: graph theory and Internet analysis, linear planning, integer planning, objective planning, dynamic planning, queuing system, decision analysis and methods and other basic contents of operational research, providing necessary mathematical planning methods for the quantitative optimization, analyzing logistics system and planning of logistics network. For simple general problems, the course gives a proving process in an easily understandable and acceptable; for relatively complex problems, the course uses direct explanation to replace the complicated and abstract proving process.

**Reference book:**

Logistics Operational Research, Li Nianzu, China Fortune Press

**Prerequisite**: Liner Algebra, Probability and Mathematical Statistics

**Logistics English (2 credits)**

**Course code**: b2030144

**Suitable majors**: Logistics Management

**Instructor**: Hao Hao, Jing Ping

**Brief introduction:**

This course cultivates the students’ ability to read foreign professional documents and make business communications in English, a basic specialty course for the major of Internet of things. The course helps the students master the professional English vocabulary, cultivate their ability to read foreign documents and acquire information from foreign documents and have the language communication and business communication ability necessary for the work in the field of logistics, Internet of things and others.

**Reference book:**

Logistics English, Jing Ping, Shanghai University of Finance and Economics Press

**Western Economics (4 credits)**

**Course code**: b2030145

**Suitable majors**: Financial Management, E-commerce, International Business, Exhibition Economy and Management, Hospitality Management, Logistics Management, Credit Management

**Instructor**: Wei Wenjing, Li Jun, Zheng Xiujun and others

**Brief introduction:**

The course requires the students to master the basic concepts and theory, basic hypothetic conditions and theoretical system framework of economics, and get familiar with the basic theory and knowledge and different research methods and views of economics, laying a basis for the further learning and study of the following courses, so as to meet the actual needs of economic trend analysis and business management ability improvement of economic management workers and better serve for the enterprise’s scientific management, market need and macro-trend analysis.

**Reference book:**

Western Economics, Wei Wenjing, Shanghai University of Finance and Economics Press

**System Analysis and Design (2 credits)**

**Course code**: b2030146

**Suitable majors**: E-commerce

**Instructor**: Pan Hailan, Chen Jian, Wu Cuihong

**Brief introduction:**

The course mainly discusses the theory, method, technology, tool and application of e-commerce system’s analysis and design process, the object-orientation analysis and modeling, design and modeling with UML. The course objective is to help the students understand and master the related knowledge of e-commerce system construction, master the basic concept and theory of systematic analysis and design, get familiar with the life cycle of system development, especially the system analysis and system design stage and learn to make UML drawings with the tools of Rational Rose.

**Reference book:**

System Analysis and Design Methods, Jeffrey L. Whitten, Lonnie D. Bentley, China Machine Press

**Prerequisite**: Basic Database Application

**Project Management (3 credits)**

**Course code**: b2030147

**Suitable majors**: Exhibition Economy and Management

**Instructor**: Wang Shangjun

**Brief introduction:**

Based on the basic theory and methods of project management, focusing on the basic knowledge necessary for the project management, the course introduces the overall management, scope management, time management, cost management, quality management and HR management in the field of project management and requires the students to get familiar with the starting, planning, implementing, controlling and ending process of the project management and the scientific theory, skill and methods in the plan compiling, project control, project ending process of the project management.

**Reference book:**

Project Management, Lu Yaobin, China Machine Press

**Customer Psychology (2 credits)**

**Course code**: b2030148

**Suitable majors**: Exhibition Economy and Management, Hospitality Management

**Instructor**: Xu Lingling, Wang Yan

**Brief introduction:**

The course is a compulsory basic specialty course for the major of hospitality management, which introduces the basic theory of customer psychology and has some requirements on the students’ mastering of the related psychological theory, consumption behaviors of analyzing and evaluating customers and the instruction of advertisement design. Through the course, the students are able to understand the materialistic relationship between psychology and intelligence and the reflection of intelligence in objective realistic initiative, so as to cultivate their materialistic sensibility; the students are also required to understand the expression modes, rules and features of all kinds of psychological activity in the field of consumer psychology and behavior, understand, get familiar with and master the basic theory, principle, strategy and methods of customer psychology.

**Reference book:**

Customer Psychology, Li Xiaoxia, Tsinghua University Press

**Prerequisite**: Hotel Lobby Management and others

**Trust and Leasing (2 credits)**

**Course code**: b2030149

**Suitable majors**: Credit Management

**Instructor**: Song Huiwang

**Brief introduction:**

Understand the theoretical system of the asset management system—trust, understand the laws and regulations on trust relations, master the types of trust business and management of trust industry, understand the origin of trust, the features of trust industry in developed countries and the development history of trust industry in China, master the basic types of modern leasing, the basic operational procedures of leasing and the related knowledge of leasing.

**Reference book:**

21st College Textbook Finance Series: Trust and Leasing (3rd edition), Min Weiyan, Science Press

**Credit Insurance (2 credits)**

**Course code**: b2030150

**Suitable majors**: Credit Management

**Instructor**: Zeng Ming, experts in the field, Li Zhijun

**Brief introduction:**

The course requires the students to understand the development of credit insurance, understand the main types of credit insurance and the status of credit insurance in the whole insurance system. Meanwhile, the course helps the students understand the main contents of different insurances types in credit insurance, master the practical application of credit insurance in credit management and explore the function of credit insurance further.

**Reference book:**

Theory and Practice of Credit Insurance, Liu Xinlai, Shanghai University of Finance and Economics Press

**Prerequisite**: Finance, International Finance

**Credit Guaranty (2 credits)**

**Course code**: b2030151

**Suitable majors**: Credit Management

**Instructor**: Zeng Ming, expert in the field

**Brief introduction:**

Understand the basic theory and development history of credit guaranty, master the development of credit guaranty in different countries or areas, the business procedures and operation, guaranty evaluation, anti-guaranty measure, guaranty legal practice, structure and management of guaranty organization.

**Reference book:**

Introduction and Practice of Credit Guaranty (3rd edition), Zeng Ming, Economy and Science Press

**Credit Laws and Regulations (2 credits)**

**Course code**: b2030152

**Suitable majors**: Credit Management

**Instructor**: Qing Baoyan, Yu Tong

**Brief introduction:**

Understand the introduction of credit law, government credit law, enterprise credit law, bank credit law, non-bank financial organization credit law, market agent organization credit law, consumer credit law, credit information laws and regulations, understand the government credit legal system, enterprise credit legal system, bank credit legal system and consumer credit legal system and know the difference between the related credit legal systems of Anglo-American legal system and continental legal system.

**Reference book:**

Series Textbook for the Major of Credit Management: Introduction to Credit Law, Qing Baoyan, Shanghai University of Finance and Economics Press, 1st edition (Feb. 1 of 2015)

**Prerequisite**: Economic Law

**Credit Risk Analysis and Measurement (3 credits)**

**Course code**: b2030153

**Suitable majors**: Credit Management

**Instructor**: Zheng Xiujun and Zhao Yingdong

**Brief introduction:**

Master the traditional methods and modern methods of credit risk evaluation. The tradition methods include: expert method, rating method, credit scoring method. The modern methods include: KMV credit monitoring model based on the option theory, VAR method, neural network model and others. Meanwhile, the students are required to apply the learned knowledge and theoretical analysis and the measurement methods of credit risk based on the actual situation of China.

**Reference book:**

Credit Risk Management (3rd edition), Joetta Colquitt, Yang Nong, Tsinghua University Press

**Prerequisite**: Econometrics

**Credit Rating (2 credits)**

**Course code**: b2030154

**Suitable majors**: Credit Management

**Instructor**: Zhao Yingdong, Zheng Xiujun

**Brief introduction:**

The course requires the students to master the research objects of credit rating, master the basic concept and methods of credit rating, understand the current status and basic business features of credit rating industry and improve their application skills of students’ credit rating.

**Reference book:**

Credit Rating, Zhu Rong’en, Shanghai University of Finance and Economics Press

**Prerequisite**: Econometrics

**Lectures on Credit Frontiers (2 credits)**

**Course code**: b2030155

**Suitable majors**: Credit Management

**Instructor**: Rao Minghua, Wei Wenjing

**Brief introduction:**

The course requires the students understand the frontier information of credit discipline, understand the frontier technology and measurement of credit industry and its practical work, participate the lectures and complete the research report independently and initiatively.

**Reference book:**

Self-edited Textbook

**Case Analysis of Credit Problems (2 credits)**

**Course code**: b2030156

**Suitable majors**: Credit Management

**Instructor**: Wang Yuhan, Wei Wenjing

**Brief introduction:**

The course requires the students to master the searching, collection and analysis of credit cases, join the case analysis and explanation and complete the case analysis of credit problems independently and initiatively.

**Reference book:**

Self-edited Textbook

**Mobile Business (2 credits)**

**Course code**: b2030157

**Suitable majors:** E-commerce

**Instructor**: Jiang Wenrong, Chen Wei, Wu Cuihong

**Brief introduction:**

The course requires the students to understand the theory and related practical operation of mobile business. The course contents include the basic concept, technological basis, business mode, development prospect and risk prevention principles of mobile business, the construction of value chains and eight innovative modes of mobile business and the new cases or successful experiences in the mobile business applications in recent years.

**Reference book:**

Theory and Practice of Mobile Business, Theory and Practice of Mobile Business, Tsinghua University Press

**Mobile Development Technology (2 credits)**

**Course code**: b2030158

**Suitable majors**: E-commerce

**Instructor**: Jiang Wenrong, Pan Hailan, Yan Jihong

**Brief introduction:**

This course requires the students to use new technologies in the e-commerce development so as to improve their understanding of related technical skills from the perspective of specialty development. Starting from the difference between e-commerce technology and other media, the course introduces the latest mobile development technology of e-commerce, explores the technical ability, improve the students’ comprehensive quality and competitive advantages. The course not only consolidates the basic knowledge of program design language, basic concept of object orientation, basic methods and thoughts of program design, but also improves the students’ ability to apply those knowledge to solve practical problems. The course contents include: Android development environment, Android application program, Android life cycle, Android user’s interface, component communication and broadcasting message, backstage service and data storage and methods.

**Reference book:**

Self-edited Textbook

**Prerequisite**: Basic Program Design (Java), Basic Database Application

**Applied Statistics (3 credits)**

**Course code**: b2030159

**Suitable majors**: Financial Management, E-commerce, International Business, Exhibition Economy and Management, Hospitality Management, Logistics Management, Credit Management

**Instructor**: Wang Wanwei, Yu Yin, Wang Bin

**Brief introduction:**

The course mainly researches on the application of basic theory and methods of statistics, introduces the application of searching, collection and analysis of statistic data, and cultivates the students’ ability to analyze the statistic data and solve problems.

**Reference book:**

Statistics, Sun Jingjuan, Tsinghua University Press

**Cruise Service and Management (2 credits)**

**Course code**: b2030160

**Suitable majors**: Hospitality Management

**Instructor**: Xu Lingling

**Brief introduction:**

The course objective and tasks are as follows: 1. Require the students to have the basic knowledge of cruise service and management, including the basic concept of cruise and cruise product, cruise business management, cruise service quality management, cruise safety management and others; 2.cultivate the students’ application ability of basic theory and methods of management to solve practical problems in cruise management; 3. Require the students to master the whole process of cruise product market investigation, cruiser product design and development, cruise product sales and further improve their ability to analyze and solve problems. The course contents include the history and development trend of cruiser industry, sales of cruiser and cruiser product, voyage design, staff setting of cruiser, customer service, canteen service, hygiene and safety management.

**Reference book:**

Cruise Operations Management, Philip Gibson, Routledge

**Operational Research (2 credits)**

**Course code**: b2030161

**Suitable majors**: e-commerce

**Instructor**: Yu Yin, Yan Jihong

**Brief introduction:**

The course requires the students to understand and master the basic concept, theory and methods of operational research, and have the ability to construct mathematical model, solution model, analysis model and economic evaluation based on actual problems. The course contents include modeling methods of operational research, linear planning, simplex methods, artificial variable method, dual problem, precision analysis, economic explanation of dual variable, traffic and transportation problem, assignment problem, network optimization model, integer planning, theory of games, storage model, queue theory and others.

**Reference book:**

Operational Research, Wang Wenping, Science Press

**Prerequisite**: Applied Statistics, Probability and Mathematical Statistics

**Traffic and Transportation Management (3 credits)**

**Course code**: b2030162

**Suitable majors**: Logistics Management

**Instructor**: Ling Huidan, Cai Weiwei, Yang Tao

**Brief introduction:**

The course researches on the operation of different Traffic and Transportation methods and comprehensive Traffic and Transportation system, introduces the practical operation of different Traffic and Transportations, main facility of Traffic and Transportation system, Traffic and Transportation system planning, theory and methods of Traffic and Transportation organizational management and controlling. The course contents include: basic features of different Traffic and Transportations and the Traffic and Transportation mode, the main freight types and modes, comprehensive Traffic and Transportation system, Traffic and Transportation system planning, internal Traffic and Transportation organization and management of the enterprise, transportation organization and signal control of urban Traffic and Transportation system, advanced Traffic and Transportation system and others.

**Reference book:**

Logistics Traffic and Transportation Management, Zhang Li, Beijing Jiaotong University Press

**Operational Management (3 credits)**

**Course code**: b2030163

**Suitable majors**: Financial Management, E-commerce, International Business, Exhibition Economy and Management, Hospitality Management, Logistics Management, Credit Management

**Instructor**: Chen Wei and others

**Brief introduction:**

Operational Management is a basic specialty course for the school of economics and management. Through the course, the students are required to systematically learn the planning, organization, implementation and controlling of the operational process and master the basic knowledge or skills of operational management.

**Reference book:**

Operational Management, Lv Hong, Wang Dongling, Science Press

**Prerequisite**: Management

**Exhibit Custom Clearance Practice (2 credits)**

**Course code**: b2030164

**Suitable majors**: Exhibition Economy and Management

**Instructor**: Wang Shengying, Yan Xun

**Brief introduction:**

This is a selective course for the major of exhibition economy, which is set for the internationalization of exhibition industry and the more and more frequent cross-national circulation of exhibits. The course is helpful for the students to learn corresponding professional knowledge, master the basic rules of international goods circulation and trade and have the related knowledge of import and export goods documents making in accordance with the needs of international exhibition, laying a basis for the work in the related field in the future.

**Reference book:**

Custom Declaration Practice, Xie Guoe, East China University of Science and Technology Press

**Exhibition Design and Management (2 credits)**

**Course code**: b2030165

**Suitable majors**: Exhibition Economy and Management

**Instructor**: Feng Lan, Zhu Bin

**Brief introduction:**

This is a selective specialty course for the major of exhibition economy and management, with the objective to help the students systematically learn the basic knowledge of exhibition design, including the methods of exhibition design, exhibition design basis, overall procedures of exhibition design, execution and management of exhibition design and others, so that the students are able to understand the related steps of exhibition design and master related skills of exhibition design, laying a basis for the work in the related field in the future.

**Reference book:**

Exhibition Service and Management—Exhibition Design, Huang Liping, China Tourism Press

**Credit Checking Technology (2 credits)**

**Course code**: b2030166

**Suitable majors**: Credit Management

**Instructor**: Li Zhijun, expert in the field

**Brief introduction:**

The students are required to master the basic theory and methods of the credit rating and have the ability to use all kinds of methods to make credit rating correctly and write credit rating reports. The course contents include: principle and methods of credit rating, credit rating index system, credit rating of enterprises, credit rating of financial organization and debt rating.

**Reference book:**

Credit Checking Technology Basis, Lin Junyue, China Renmin University Press

**Prerequisite**: Applied Statistics

**Security Investment Theory and Practice (2 credits)**

**Course code**: b2030167

**Suitable majors**: Financial Management

**Instructor**: Tang Jiping, Song Huiwang

**Brief introduction:**

Through the course, the students are required to master the composition of security investment, basic function of security market, features of security issuing market and circulation market, skillfully master the determination of valuable security’s price and the macro-economic analysis of security investment, industrial lifecycle analysis, basic enterprise information analysis, technological analysis and modern security investment theory.

**Reference book:**

Security Investment Theory and Practice, Wu Xiaoqiu, China Renmin University Press

**Introduction to China’s Foreign Trade (2 credits)**

**Course code**: b2030168

**Suitable majors**: International Business

**Instructor**: Yao Wei, Yao Li, Chen Zhongyi

**Brief introduction:**

The course comprehensively and systematically introduces the information of China’s foreign trade, including the structure, theoretical basis, development strategy, foreign trade laws, foreign trade management, foreign trade promotion, Custom management, service trade, technology trade, foreign capital application, foreign trade relations and others.

**Reference book:**

Introduction to China’s Foreign Trade (3rd edition), Qu Ruxiao, China Machines Press

**Series Course for Intercontinental Hotel Group Managers (2 credits)**

**Course code**: b2030169

**Suitable majors**: Hospitality Management

**Instructor**: Hotel experts

**Brief introduction:**

Understand the IHG culture, skills and knowledge of managers and others.

**Reference book:**

Self-edited Textbook

**Assistant Credit Manager (2 credits)**

**Course code**: b2030170

**Suitable majors**: Credit Management

**Instructor**: Wang Yuhan, Zhao Yingdong

**Brief introduction:**

Master the customer credit application, collection of customer credit information, approval and recording of customer’s credit information, construction and management of customer’s credit files, the credit monitoring during the transaction, the receivable management, delinquent receivable management and consumer credit management.

**Reference book:**

Assistant Credit Manager (National Vocational Qualification 3rd Grade), China Employment Training Technical Instruction Center, China Labor and Social Security Press

**Specialty Documents Writing (2 credits)**

**Course code**: b2030171

**Suitable majors**: E-commerce

**Instructor**: Yu Ying, Pan Hailan, Wu Cuihong

**Brief introduction:**

The students are required to master the different aspects of thesis writing, including topic selection, document collection, thesis structure, writing methods, evaluation standard and term standard and others, including the latest noting rules and related regulations on thesis writing. The course contents include thesis searching, thesis format processing, Excel processing of data, PPT demonstration and report, Visio drawing, literature translation and others.

**Reference book:**

Instruction on Thesis Writing, Yu Zhigang, China Legal Publishing House

**Asset Appraisal (2 credits)**

**Course code**: b2030172

**Suitable majors**: Credit Management

**Instructor**: Yang Jun, Wang Wanwei

**Brief introduction:**

The students are required to master the basic methods of asset appraisal, asset appraisal procedure, machine and facility appraisal, real estate appraisal, intangible asset appraisal, long-term investment appraisal, flow asset appraisal, enterprise values appraisal, asset appraisal report, and the development and management of the asset appraisal industry in China.

**Reference book:**

Asset Appraisal, Yu Cuifang, Science Press

**Lecture on Free Trade Zone (2 credits)**

**Course code**: b2030173

**Suitable majors**: Logistics Management

**Instructor**: Yang Tao, Zhou Yanjun, Zhou Yi

**Brief introduction:**

Help the students understand the revolution system and contents of free trade zones in the way of expert lectures.

**Reference book:**

Self-edited Textbook

**WIE Industry Internship I (2 credits)**

**Course code**: b4030001

**Suitable majors**: Hospitality Management

**Instructor**: hotel expert

**Brief introduction:**

Hotel service skills training and practical operation.

**Reference book:**

Self-edited Textbook

**WIE Industry Internship I (2 credits)**

**Course code**: b4030001

**Suitable majors**: Hospitality Management

**Instructor**: Duan Muhai, Ling Xuqiang, Xu Aiping, Xu Lingling

**Brief introduction:**

The course integrates the enterprise internship, hotel service skills training and practical operation, providing true experiences in the industry.

**Reference book:**

Self-edited Textbook

**Analog Operation of Custom Declaration, Document Making and Settlement (3 credits)**

**Course code**: b4030003

**Suitable majors**: International Business

**Instructor**: Chen Ling, Zhang Qing

**Brief introduction:**

The course provides a chance of simulation operation and learning of custom declaration, document making and settlement in the procedures of international business, strenghthens the students’ understanding of international business, and improves their practical ability, laying a basis for the employment in the future.

**Reference book:**

Self-edited Textbook

**Prerequisite**: International Settlement

**Financial Analysis Simulation (1 credit)**

**Course code**: b4030004

**Suitable majors**: Financial Management, Credit Management

**Instructor**: Bian Lingling, Tang Haiou

**Brief introduction:**

Through the case analysis, the course helps the students have the financial analysis report writing ability.

**Reference book:**

Self-edited Textbook

**Prerequisite**: Financial Analysis

**Case Analysis of Financial Management (1.5 credits)**

**Course code**: b4030005

**Suitable majors**: Financial Management

**Instructor**: Wang Hui, Liu Weiqing

**Brief introduction:**

Through the financial management case analysis, the course instructs the students to apply Excel to compute indexed related to financial decision like NPV, IRR.

**Reference book:**

Self-edited Textbook

**Prerequisite**:

Financial Management I

**Simulation of Financial Management Post (3 credits)**

**Course code**: b4030006

**Suitable majors**: Financial Management

**Instructor**: Wang Hui, Chen Ailan

**Brief introduction:**

The course simulates the actual accounting internship with the help of computer network, which helps the students play the role of intern in the system and simulate to communicate, transact business, and complete all the accounting related economic works. The virtual accounting internship system provides a true feeling for the students in 3D mode.

**Reference book:**

Netinnet Accounting Post Simulation Software

**Prerequisite**: Financial Management, Financial Accounting

**Graduation Internship and Graduation Design (Thesis) for the Major of Financial Management (12 credits)**

**Course code**: b4030007

**Suitable majors**: Financial Management

**Instructor**: Cheng Li, Bian Lingling, Tang Haiou and others

**Brief introduction:**

The course cultivates the students’ ability to analyze and solve problems in the field of financial management with the learned knowledge, further deepen and expand the learned basic knowledge and specialty knowledge, improve their comprehensive analysis and application ability and solve the ability to solve problems in the financial management practice. The students receive the basic training of financial management workers and are cultivated to have the elementary ability to carry out academic research work. The course contents include: investigation research, document searching and collection (including translation), plan proof, plan determination, theoretical analysis, design and application, practical research and analysis, application of modern technology and methods, scientific thesis writing and instruction manual writing, collaboration and organization. The course also cultivates the students’ collaborative, innovative spirit and correct values, improving their thoughts and business quality.

**Simulation Operation of Exhibition Enterprise (1 credit)**

**Course code**: b4030008

**Suitable majors**: Exhibition Economy and Management

**Instructor**: Wang Shengying, Zhao Jun and Wang Shangjun

**Brief introduction:**

Through the course, the students are able to understand the operational procedures of exhibitors in the process of exhibition participation, master key points of different steps of exhibition participation and apply the knowledge flexibly through simulation operation.

**Export Goods Exhibition and Business Negotiation (1 credit)**

**Course code**: b4030009

**Suitable majors**: International Business

**Instructor**: Yao Wei, Yao Li, Jiang Hua

**Brief introduction:**

The course introduces the business plan making, exhibition booth design and detailed negotiation in the international business, helping the students understand the actual business operation and testing the practical ability of the students through the contest participation.

**Reference book:**

Self-edited Textbook

**Experienced Practice of E-commerce Post (1 credit)**

**Course code**: b4030010

**Suitable majors**: E-commerce

**Instructor**: Jiang Wenrong, Yu Ying

**Brief introduction:**

Through the experienced practice of e-commerce post, the students are required to strengthen their understanding of the specialty, get familiar with the posts and fully get in touch with the socity. The students are required to join the social practice within the lawful scope, and are not allowed to do illegal activities. The mode of practice include social service, social investigation, join the social practice activity organized by the school, part-time job (work in enterprises in the related field, like the technology consultation, technology service, technology development, Internet marketing, Internet editing, Internet service and others).

Each practice shall not be shorter than 2 weeks (10 working days) and is usually arranged in summer vocations. The students who don’t get a satisfactory appraisal result of the social practice in the summer vocation shall join the practice again in winter vocation. All the documents of social practice shall be submitted before the 1st week after the semester starts.

**Reference book:**

Instructional Manual for the Experienced Practice of E-commerce Post, Self-edited

**Planning and Operation Practice of E-commerce Online Stores (3 credits)**

**Course code**: b4030011

**Suitable majors**: E-commerce

**Instructor**: Chen Jian, Chen Wei, Jiang Wenrong, WU Cuihong, Pan Hailan and others

**Brief introduction:**

The course contents include: 1. Availability analysis 2. Website promotion 3. Website appraisal 4. Website maintenance 5. Data analysis 6. Website upgrade

**Reference book:**

Website Operation and Management, Zhao Shouxiang, Tsinghua University Press

**Prerequisite**: Introduction to E-commerce

**Practice of E-commerce Logistics Project Plan Design (1 credit)**

**Course code**: b4030012

**Suitable majors**: Logistics Management

**Instructor**: Hao Hao, Chen Zhigang, Yao Tao and others

**Brief introduction:**

The e-commerce logistics system project plan requires the students to design the dynamic interconstraint elements of assets requiring moving, packaging facility, delivery machines, Traffic and Transportation tools, storage facility, staff and communication facility in the e-commerce logistics system into an organic system with special functions. The composition of e-commerce logistics system include: 1. Logistics distribution center 2. Logistics information network 3. Logistics Traffic and Transportation network 4. Logistics storage 5. Customer service and management system. The organization and management of logistics system are divided into two parts of logistics business management and logistics technology management. The 1st part includes the plan management, economic management, talent management and process management of logistics; 2nd part includes the hardware technology and management, the software technology and management.

**Reference book:**

Self-edited Text book

**Practice of E-commerce Logistics Project Operation (1 credit)**

**Course code**: b4030013

**Suitable majors**: Logistics Management

**Instructor**: Hao Hao, Chen Zhigang, Yang Tao and others

**Brief introduction:**

The students are required to understand and operate the e-commerce logistics process, which includes Traffic and Transportation, storage, loading and uploading, packaging, circulation processing and the related logistics information processing. The students are also required to understand the e-commerce logistics technology including all kinds of operational methods and management skills like circulation processing technology, product packaging technology, product marking technology, product real-time tracing technology and others. The logistics technology also includes logistics planning, appraisal, design and strategy. After the popularization of computer network technology, the logistics technology integrates many modern information technologies like GIS, GPS, EDI, BAR CODE and others.

**Reference book:**

Self-edited Textbook

**Practice of E-commerce Innovation and Entrepreneurship (1 credit)**

**Course code**: b4030014

**Suitable majors**: E-commerce

**Instructor**: Pan Hailan, Chen Wei, Wu Cuihong, Jiang Wenrong and others

**Brief introduction:**

Through different kinds of contests, the students experience the joy of innovation, and the learning and practice of innovation and entrepreneurship. The course instructs the students to actively join different contests and college-level three small projects, municipal innovation and entrepreneurship projects. The students are required to submit the certificate, conclusion report of the project and the ones without the above documents shall open an online store in Taobao to make practice.

**Reference book:**

Instruction of Practice of E-commerce Innovation and Entrepreneurship, Self-edited

**Elementary Practice of E-commerce Post (1 credit)**

**Course code**: b4030015

**Suitable majors**: E-commerce

**Instructor**: Chen Wei and Jiang Wenrong

**Brief introduction:**

The students are able to get familiar with the e-commerce posts and fully get in touch with the society through the course. The students are required to carry out the practice within the lawful scope and are not allowed to make illegal activities. The mode of practice includes lecture, enterprise visit, investigation report and others.

Each practice shall not be shorter than 2 weeks (10 working days) and is usually arranged in summer vocations. The students who don’t get a satisfactory appraisal result of the social practice in the summer vocation shall join the practice again in winter vocation. All the documents of social practice shall be submitted before the 1st week after the semester starts.

**Reference book:**

Instructional Manual for the Elementary Practice of E-commerce Post, Self-edited

**Prerequisite**: Introduction to E-commerce

**Practice of E-commerce Facility and Its Application (2 credits)**

**Course code**: b4030016

**Suitable majors**: E-commerce

**Instructor**: Yan Jihong, Jiang Wenrong

**Brief introduction:**

The course is a compulsory specialty internship course for the major of e-commerce. The students are required to practise the RFID reader technology and development skills of e-commerce facility, learn to solve practical problems and improve their practical ability. The course contents include: development of small-scale application project—RFID based e-commerce system design and realization, which includes use of RFID readers, RFID tag operation, application tag instruction, personal configuration of reader’s working parameters, development of RFID application program with Java.

**Reference book:**

E-commerce Application Software and Facility Internship, Department of E-commerce, Self-edited

**Prerequisite**: Basic Program Design (Java)

**Graduation Internship and Graduation Design (Thesis) for the Major of E-commerce (12 credits)**

**Course code**: b4030017

**Suitable majors**: E-commerce

**Brief introduction:**

Graduation Design (Thesis) is the last comprehensive practical instructional step of the college learning, with the objective to consolidate, deepen and expand the learned basic theory, knowledge and skills of the students through graduation design, cultivate the students’ ability to independently analyze and solve practical design projects with learned knowledge or skills, master the general process and rules for the e-commerce interaction or thesis design and receive further trainings of different steps, laying a necessary basis for the better adaption into the posts after graduation in the future.

**Reference book:**

Instruction for the E-commerce Graduation Design Standards, Department of E-commerce, Self-edited

**Practice of E-commerce Project Development (3 credits)**

**Course code**: b4030018

**Suitable majors**: E-commerce

**Instructor**: Pan Hailan, Jiang Wenrong, Yan Jihong

**Brief introduction:**

The course requires the students to simulate the actual operational process of software company with the background of participating the application development project, and make customer need analysis, application development plan design, application program development and delivery in groups, as a summary of the software development courses for the major of e-commerce. During the process of practice of e-commerce projects, the students’ practical ability and vocational quality are comprehensively improved. The practice contents include: project planning, encoding, test and integration, which requires to complete the foreground commodity list, single commodity showing, searching, classification, shopping cart, ordering, backstage log in, registration and adding-deletion-modification-searching function.

**Reference book:**

Practice of E-commerce Project Development, Self-edited

**Prerequisite**: E-commerce Development Technology, Business Data Application Platform Practice

**Practice of Probability and Mathematical Statistics (1 credit)**

**Course code**: b4030019

**Suitable majors**: Credit Management

**Instructor**: teacher from Department of Literacy and Science

**Brief introduction:**

Through the course, the students are required to apply the basic theories of mathematical statistics, parameter estimation, hypothetic test and others to complete the data analysis and solve practical problems with the software.

**Reference book:**

Self-edited Textbook

**Simulation of Management Cost Accounting (2 credits)**

**Course code**: b4030020

**Suitable majors**: Financial Management

**Instructor**: Tang Haiou, Shi Meiling

**Brief introduction:**

The specialized training includes the collection and distribution of material, labor and expenses for production, cost carryover, the financial statement making and the influences of different distribution methods and cost computing methods on cost. The comprehensive training include the accounting of product cost circulation, distribution and collection with the methods of category method, method of fractional step, job method and others.

**Reference book:**

Netinnet Cost Accounting Software

**Prerequisite**: Management Cost Accounting

**Management Theory and Application (1 credit)**

**Course code**: b4030021

**Suitable majors**: Financial Management

**Instructor**: Song Huiwang

**Brief introduction:**

The course requires the students to master the basic theory of management through management case analysis.

**Reference book:**

Self-edited Textbook

**Prerequisite**: Management

**Simulated Operation of International Trade (2 credits)**

**Course code**: b4030022

**Suitable majors**: International Business

**Instructor**: Zeng Jing, Zhuang Wei, Chen Ling and others

**Brief introduction:**

The course is an important practical instructional step for the specialized education, which helps the students get familiar with the detailed operational procedures of foreign trade so as to improve their sensible understanding, consolidate their learned knowledge and theory and improve theie ability to discover, analyze and solve problems. The course constructs a simulated foreign trade internship platform with the computer software, solving the difficulty of internship. Through practice, the students are able to fully take their initiatives, master and absorb the learned knowledge in class and lay a good basis for the work in the future.

**Reference book:**

Self-edited Textbook

**Prerequisite**: Practice of International Trade

**Practice of International Trade (1 credit)**

**Course code**: b4030023

**Suitable majors**: Credit Management

**Instructor**: Yao Li, Yan Chunrong

**Brief introduction:**

The students are required to correctly understand the related articles in the foreign trade agreement, approve the related contents of the credit certificate and flexibly apply the learned knowledge, independently make all kinds of documents for foreign trade or operate the whole procedures of goods production and processing, loading and delivery, insurance, inspection and custom declaration, exchange settlement and others in accordance witht the contract and related documents.

**Reference book:**

Self-edited Textbook

**Graduation Internship and Graduation Design (Thesis) for the Major of International Business (12 credits)**

**Course code**: b4030024

**Suitable majors**: International Business

**Brief introduction:**

The course analyzes the actual problems in international business with data and documents and find out corresponding solutions and suggestions. The graduation design comprehensively tests the students’ ability to independently complete the international business work.

**Introduction to International Business (1 credit)**

**Course code**: b4030025

**Suitable majors**: International Business

**Instructor**: Yao Li, Chen Ling, Yan Chunrong and others

**Brief introduction:**

The course comprehensively introduces the cultivation plan, instructional objective and ability requirements for the major of international business and makes preparations for the study of international business.

**Reference book:**

Self-edited Textbook

**Elementary Practice for the Major of International Business (2 credits)**

**Course code**: b4030026

**Suitable majors**: International Business

**Instructor**: Yao Li, Chen Ling, Yan Chunrong and others

**Brief introduction:**

The course introduces the requirements of qualification examinations of international business and provides opportunities to visit enterprises to understand the practice.

**Reference book:**

Self-edited Textbook

**Demonstration and Making of International Business Documents (1 credit)**

**Course code**: b4030027

**Suitable majors:** International Business

**Instructor**: Jiang Hua and Xu Li

**Brief introduction:**

The course introduces the making and demonstration of specialized documents.

**Reference book:**

Self-edited Textbook

**Practice of International Logistics Project Plan Design (1 credit)**

**Course code**: b4030028

**Suitable majors**: Logistics Management

**Instructor**: Jing Ping, Liu Xiaohui, Meng Qi and others

**Brief introduction:**

The operational plan design, basic element design and procedural element design of international logistics project.

**Reference book:**

Self-edited Textbook

**Practice of International Logistics Project Operation (1 credit)**

**Course code**: b4030029

**Suitable majors**: Logistics Management

**Instructor**: Jing Ping, Liu Xiaohui and Meng Qi

**Brief introduction:**

The course contents mainly include international logistics business management, international freight agent business operation, international goods inspection declaration business operation, international goods custom declaration business operation, international goods insurance business operation, international logistics settlement and international logistics service and others.

**Reference book:**

Self-edited Textbook

**Practice of Chemical Logistics Project Plan Design (1 credit)**

**Course code**: b4030030

**Suitable majors**: Logistics Management

**Instructor**: Li Hehua, Liu Zhenchao, Zhan Wei and others

**Brief introduction:**

The course contents include the chemical logistics operation plan design, chemical storage plan design, chemical logistics zone plan design and others.

**Reference book:**

Self-edited Textbook

**Practice of Chemical Logistics Project Operation (1 credit)**

**Course code**: b4030031

**Suitable majors**: Logistics Management

**Instructor**: Li Hehua, Liu Zhenchao, Zhanwei and others

**Brief introduction:**

The chemical logistics project operation includes the whole logistics service process from chemical raw material import to the final product distribution, which is whole solution plans provision, raw material purchasing and Traffic and Transportation, final products management, mainline Traffic and Transportation, transfer storage management, area distribution and others.

**Reference book:**

Self-edited Textbook

**Simulated Practice of Accounting (2 credits)**

**Course code**: b4030032

**Suitable majors**: International Business

**Instructor**: Bian Lingling and others

**Brief introduction:**

Understand and simulate the basic accounting processing and making.

**Reference book:**

Self-edited Textbook

**Prerequisite**: Accounting

**Practice of Accounting (1 credit)**

**Course code**: b4030033

**Suitable majors**: Credit Management

**Instructor**: Jing Fang, Wang Diyun

**Brief introduction:**

The students are required to complete a elementary accounting course design independently, including the account set up, accounting process of the business with the accounting processing procedures of account title summary for the month, complete the compiling of the accounting documents, registration of general ledger and subsidiary ledger, the compiling of balance sheet and income statement and the binding of documents and account books.

**Reference book:**

Self-edited Textbook

**Prerequisite**: Accounting Theory

**Manual Simulation of Accounting Theory (3 credits)**

**Course code**: b4030034

**Suitable majors**: Financial Management

**Instructor**: Tang Haiou, Shi Meiling, Zhao Junhong and others

**Brief introduction:**

The course simulates the whole process of manual accounting with a case analysis, helping the students understand the basic procedures and theories of accounting.

**Reference book:**

Simulated Experiment on Accounting Theory, Cheng Li, Wang Diyun, Shanghai University of Finance and Economics Press

**Prerequisite**: Accounting Theory

**Simulated Practice of Conference (2 credits)**

**Course code**: b4030035

**Suitable majors**: Exhibition Economy and Management

**Instructor**: Wang Shangjun, Zeng Xuehui and Feng Lan

**Brief introduction:**

The course combines theory and practice, helps the students have some understanding of the conference project operation and management through the operational practice of conference project operation and management, strengthens the students’ understanding and mastering of the conference project operation and management knowledge, consolidates the learned knowledge and improves the practical ability of the students.

**Reference book:**

Self-edited Textbook

**Graduation Internship and Graduation Design (Thesis) for the Major of Exhibition Economy and Management (12 credits)**

**Course code**: b4030036

**Suitable majors**: Exhibition Economy and Management

**Instructor**: Wang Shangjun, Gu Yingkang, Feng Lan, Zeng Xuehui, Wang Shengying, Zhao Jun, Ling Xuqiang, Yan Xun, Sun Yan, Meng Zhaoshang

**Brief introduction:**

This course aims to carry out a comprehensive test of the students’ learning in college, helping the students strengthen, integrate and apply the learned knowledge, improving their ability and cultivating their correct thoughts, rigorous learning attitude and good work style. The basic objective is to improve their ability to analyze and solve practical problems with the learned basic theory, knowledge and skills and provide comprehensive trainings necessary for the innovative talents with knowledge.

**Exhibition Market Investigation (2 credits)**

**Course code**: b4030037

**Suitable majors**: Exhibition Economy and Management

**Instructor**: Gu Yingkang, Feng Lan

**Brief introduction:**

The students are required to understand the types and features of exhibition market information, master the main methods or measures to search and collect the exhibition market information, analyze the exhibition market information and data based on the theoretical knowledge basis, write investigation report and have the elementary ability of organizing the exhibition market investigation and writing reports.

**Reference book:**

Instruction Manual of Exhibition Market Investigation, Self-edited Textbook

**Prerequisite**: Introduction to Exhibition Industry, Market Investigation and Analysis

**Simulated Operation of Exhibition Marketing (1 credit)**

**Course code**: b4030038

**Suitable majors**: Exhibition Economy and Management

**Instructor**: Feng Lan, Gu Yingkang

**Brief introduction:**

Through the course, the students are required to master the related marketing skills through the simulated operation and practice in the different steps of exhibition marketing.

**Reference book:**

Self-edited Textbook

**Practice of Exhibition Information Management (Software) (2 credits)**

**Course code**: b4030039

**Suitable majors**: Exhibition Economy and Management

**Instructor**: Gu Yingkang, Feng Lan

**Brief introduction:**

Through the course, the students are required to search related information in accordance with the basic procedures of exhibition project, realize the informationalized management of exhibition project operation through the exhibition information software simulation and master the operation and using skills of one mainstream exhibition information management software.

**Reference book:**

Instruction Manual of Exhibition Information Management (Software), Self-edited

**Prerequisite**: Exhibition Information Management

**Vocational Planning of Exhibition Industry (1 credit)**

**Course code**: b4030040

**Suitable majors**: Exhibition Economy and Management

**Instructor**: Wang Shangjun, Gu Yingkang, Zeng Xuehui, Wang Shengying, Feng Lan, Zhao Jun

**Brief introduction:**

Through the course, the students are required to understand the current status and development trend of the exhibition industry and have a reasonable orientation of their own carrer life.

**Reference book:**

Self-edited Textbook

**Elementary Practice for the Major of Exhibition Economy and Management (2 credits)**

**Course code**: b4030041

**Suitable majors**: Exhibition Economy and Management

**Instructor**: Wang Shangjun, Zeng Xuehui, Wang Shengying, Feng Lan

**Brief introduction:**

The course is a specialty practical course for the major of exhibition economy and management, with the objective to help the students have a basic understanding of the exhibition major including the basic procedures of exhibition organization, exhibition sales, exhibition service and exhibition evaluation and others.

**Reference book:**

Instruction Manual of Elementary Practice for the Major of Exhibition Economy and Management, Self-edited Textbook

**Simulated Practice of Project (2 credits)**

**Course code**: b4030042

Suitable major: Exhibition Economy and Management

**Instructor**: Wang Shangjun, Zeng Xuehui, Wang Shengying and Feng Lan

**Brief introduction:**

The course combines theory and practice, helps the students have some understanding of the project operation and management through the operational practice of project operation and management, strengthens the students’ understanding and mastering of the project operation and management knowledge, consolidates the learned knowledge and improves the practical ability of the students.

**Reference book:**

Instruction Manual of Simulated Practice of Project, Self-edited Textbook

**Elementary Practice of Goods, Packaging and Documents (3 credits)**

**Course code**: b4030043

**Suitable majors**: Logistics Management

**Instructor**: Zhan Wei, Liu Zhenchao and Cai Weiwei

**Brief introduction:**

Help the students get familiar with the practical knowledge of study of merchandise, goods packaging and logistics documents making.

**Reference book:**

Self-edited Textbook

**Searching, Collection and Statistical Analysis of EXCEL based International Business Information (2 credits)**

**Course code**: b4030044

**Suitable majors**: International Business

**Instructor**: Jiang Hua and Xu Li

**Brief introduction:**

Process and analyze the international business information and data with the Excel software and make corresponding tables and graphs.

**Reference book:**

Self-edited Textbook

**Prerequisite**: Statistics

**Practice of Econometrics (1 credit)**

**Course code**: b4030045

**Suitable majors**: Credit Management

**Instructor**: Zhao Yingdong

**Brief introduction:**

The course introduces the practicability and application methods of econometrics through case analysis, exercise and discussion. The course contents include: the basic knowledge of econometrics, estimation and test of single variable linear regression model, estimation and test of multi-variable linear regression model, self-correlation, test and process of heteroscedasticity and multiple mutual linear problems.

**Reference book:**

Self-edited Textbook

**Prerequisite**: Econometrics

**Practice of Economics (1 credit)**

**Course code**: b4030046

**Suitable majors**: Credit Management

**Instructor**: Yang Jun, Wei Wenjing

**Brief introduction:**

The course includes macroeconomic and microeconomic. Macroeconomics researches on the whole national economic operation process, covering many complicated macro economic variables with the features of random status distribution, bringing difficulty to the complete and objective understanding of the macroeconomic problems. The macroeconomic practice focuses on the main instructional contents of macroeconomics, masters the theoretical logic relations between basic data and different main variables of macro economic development status through economic models, constructs economic models, tests data with computer technology, so as to reflect the correctness or errors of theory and improve the student’s understanding of the macroeconomics theory. Microeconomics simulates the environments or practice scenarios like personal shopping, consumption and the production decision, organization and controlling of enterprise based on the instructional software and requires the students to analyze, compute and deduce logically with the learned knowledge.

**Reference book:**

Self-edited Textbook

**Software Operation of Hospitality Management (DELPHI) (2 credits)**

**Course code**: b4030047

**Suitable majors**: Hospitality Management

**Instructor**: hotel experts

**Brief introduction:**

Skillfully master the necessary software of hotel sales department through training.

**Reference book:**

Self-edited Textbook

**Software Operation of Hospitality Management (OPERA) (2 credits)**

**Course code**: b4030048

**Suitable majors**: Hospitality Management

**Instructor**: Xu Aiping

**Brief introduction:**

The course is one of the important practical courses for the major of hospitality management, an important practical course for the students’ understanding of the use of hotel lobby management software OPERA, which plays an important role in the instructional system of hospitality management. The practical course is based on the Opera PMS software, focuses on the students operation, with the assistance of teacher’s instruction of basic theory and methods, and pays attention to the practical operational ability of the students. Besides, through instruction, case discussion, field observation, analysis and summary, the students are required to understand the application of Opera software in the hotel lobby management, aiming to cultivate and improve their practical ability of the students.

**Reference book:**

Self-edited Textbook

**Prerequisite**:

Hotel Lobby Service and Management

**Graduation Internship and Graduation Design (Thesis) for the Major of Hospitality Management (12 credits)**

**Course code**: b4030049

**Suitable majors**: Hospitality Management

**Brief introduction:**

Carry out research and write reports on the problems in certain field with the learned theoretical knowledge based on the internship experiences.

**Hotel Documents Writing (1 credit)**

**Course code**: b4030050

**Suitable majors**: Hospitality Management

**Instructor**: Sun Yan

**Brief introduction:**

Hotel applied writing training

**Reference book:**

Self-edited Textbook

**Hospitality Industry Service Etiquette (1 credit)**

**Course code**: b4030051

**Suitable majors**: Hospitality Management

**Brief introduction:**

Train the related etiquettes in accordance with the requirements of the hospitality industry

**Reference book:**

Self-edited Textbook

**Simulation of Detailed Accounting Principles (1.5 credit)**

**Course code**: b4030052

**Suitable majors**: Financial Management

**Instructor**: Cheng Li, Li Jun

**Brief introduction:**

Help the students understand the application of detailed accounting principles through the case simulation of detailed accounting principles.

**Reference book:**

Self-edited Textbook

**Prerequisite**: Financial Accounting I, Financial Accounting II

**Practice of Financial Computerization (2 credits)**

**Course code**: b4030053

**Suitable majors**: Financial Management

**Instructor**: Chen Mingdi, Tang Haiou

**Brief introduction:**

Help the students master the financial computerization process with UFIDA software.

**Reference book:**

UFIDA ERP software

**Prerequisite**: Financial Accounting

**Analysis and Writing of Enterprise Credit Report (1 credit)**

**Course code**: b4030054

**Suitable majors**: Credit Management

**Instructor**: Zheng Xiujun, expert in the field

**Brief introduction:**

The course analyzes the main items of the credit report one by one with the related credit management theories, helps the students understand other enterprise credit reports independently based on that and complete the whole process of enterprise credit report writing independently with the writing methods of credit report.

**Reference book:**

Self-edited Textbook

**Practice of Enterprise Credit Management (1 credit)**

**Course code**: b4030055

**Suitable majors**: Credit Management

**Instructor**: Zeng Ming, expert in the field

**Brief introduction:**

The course helps the students understand the enterprise credit management system, enterprise credit management department structure, complete the actual works including customer credit information management, customer credit evaluation, customer credit awarding, credit risk management, receivables management, credit crisis management and financial tools, credit database application and credit management performance evaluation and others based on the enterprise simulation system.

**Reference book:**

Self-edited Textbook

**Simulation Operation of HR Management (1 credit)**

**Course code**: b4030056

**Suitable majors**: International Business

**Instructor**: Zhang Qing, Yao Li and Zeng Jing

**Brief introduction:**

Make simulated operation and practice of different steps of HR management.

**Reference book:**

Self-edited Textbook

**Prerequisite**: Human Resources Management

**Practice of Business Etiquette and Business Communication (1 credit)**

**Course code**: b4030057

**Suitable majors**: Logistics Management

**Instructor**: Zhou Yi, Wu Xinggen, Jing Ping

**Brief introduction:**

The course introduces the business etiquette, simple business communication and complicated business communication. The contents covers the business image etiquette, business social etiquette, job interview communication, sales communication, management communication, trade fair negotiation, general goods trading negotiation, contract claiming negotiation.

**Reference book:**

Self-edited Textbook

**Practice of Business Data Application Platform (3 credits)**

**Course code**: b4030058

**Suitable majors**: E-commerce

**Instructor**: Yan Jihong, Jiang Wenrong, Pan Hailan, Wu Cuihong and others

**Brief introduction:**

Develops the application program system of First Bank Banking navigation, provide the deposit account service, provide the current saving account service, time saving account service and realize the interaction of 6 participators (bank customer, bank teller, bank deposit business worker, bank settlement business worker, bank manager and dispatching programmer) and application program system.

**Reference book:**

Practical Instruction Manual of Business Data Application Platform, Self-edited

**Prerequisite**: E-commerce Development Technology, Practice of Business Website Foreground Design

**Practice of Business Website Foreground Design (2 credits)**

**Course code**: b4030059

**Suitable majors**: E-commerce

**Instructor**: Wu Cuihong, Pan Hailan, Yan Jihong

**Brief introduction:**

Through practice, the students are required to learn how to apply the learned knowledge into the process of solving practical problems and cultivate their necessary ability for the development of e-commerce website. On the other hand, the course strengthens the understanding and flexible application. The course contents include the graphic processing, animation making, page design, website planning and webpage making of the business website.

**Simulated Operation of Commercial Banks (1 credit)**

**Course code**: b4030060

**Suitable majors**: International Business

**Instructor**: Yao Li, Zeng Jing, Zhang Qing

**Brief introduction:**

The course makes simulated operation and practice of the front-stage and back-stage management and service of commercial banks.

**Reference book:**

Self-edited Textbook

**Prerequisite**: Finance

**Practice of Commercial Bank Business (1 credit)**

**Course code**: b4030061

**Suitable majors**: Credit Management

**Instructor**: Xiao Zhirun

**Brief introduction:**

The course requires the students to understand the skills necessary for the related posts of banks (especially the credit post, accounting post and risk control post) through role playing, collaboration and role rotation by setting the simulated posts in accordance with the operational standards and business procedures of actual commercial bank business based on the simulation platform of commercial bank business and helps the students have the good vocational habit of implementing internal control and risk prevention in accordance with the commercial bank business procedures and regulations.

**Reference book:**

Self-edited Textbook

**Simulated Operation of Marketing (1 credit)**

**Course code**: b4030062

**Suitable majors**: International Business

**Instructor**: Zeng Li, Zhang Qing and Yao Li

**Brief introduction:**

The course simulates the operation and practice of different steps of marketing.

**Reference book:**

Self-edited Textbook

**Prerequisite**: Marketing

**Practice of Marketing (1 credit)**

**Course code**: b4030063

**Suitable majors**: Financial Management

**Instructor**: Zhan Wei

**Brief introduction:**

Through marketing cases, the students are required to master the basic principles and skills of marketing.

**Reference book:**

Marketing, Xu Dingya, Fudan University Press

**Simulation of Tax Agent (1 credit)**

**Course code**: b4030064

**Suitable majors**: Financial Management

**Instructor**: Wang Diyun and Zhao Junhong

**Brief introduction:**

The students are required to master the basic procedures of tax declaration and learn the basic skills of filling the tax declaration tables through the tax agent simulations.

**Reference book:**

Self-edited Textbook

**Prerequisite**: Tax and Tax Accounting

**Practice of Statistic Software (1 credit)**

**Course code**: b4030065

**Suitable majors**: Credit Management

**Instructor**: Wang Wanwei

**Brief introduction:**

Have the basic computing ability, data analytic ability and the ability to solve practical problems with EXCEL and SPSS software

**Reference book:**

Self-edited Textbook

**Literature Searching and Review (1 credit)**

**Course code**: b4030066

**Suitable majors**: Credit Management

**Instructor**: Zhao Yingdong, Wang Yuhan

**Brief introduction:**

The students are required to master the methods to search literature, documents and data with the literature database and complete the literature review and write literature review articles based on the acquired documents.

**Reference book:**

Self-edited Textbook

**Practice of Logistics Basic Operation (3 credits)**

**Course code**: b4030068

**Suitable majors**: Logistics Management

**Instructor**: Cai Weiwei, Ling Huidan, Zhou Yanjun

**Brief introduction:**

Operate the logistics stock, delivery, storage, stocktaking, order processing, order picking, replenishment, shipment and distribution and others.

**Reference book:**

Self-edited Textbook

**Training of Logistics Technician Project (3 credits)**

**Course code**: b4030069

**Suitable major**: Logistics Management

**Instructor**: Zhou Yanjun, Jing Ping, Liu Xiaohui and others

**Brief introduction:**

Train the logistics technician projects of Labor Bureau

**Reference book:**

Designated textbook by Labor Bureau

**Practice of Logistics Technology Application (1 credit)**

**Course code**: b4030070

**Suitable majors**: Logistics Management

**Instructor**: Yang Tao, Chen Zhigang, Zhan Wei

**Brief introduction:**

Cultivate the students to systematically, completely and detailedly master the application facility in the field of logistics, and have the ability of code application, RFID wireless radio frequency facility, GPS/GIS application, electric tag assistant order-picking system, automatic stereoscopic warehouse, distribution and sorting system, production and processing process and circulation and processing.

**Reference book:**

Self-edited Textbook

**Elementary Practice of Logistics Equipment, Facility and Venue (1 credit)**

**Course code**: b4030071

**Suitable majors**: Logistics Management

**Instructor**: Cai Weiwei, Zhan Wei, Ling Huidan and others

**Brief introduction:**

Cultivate the students to understand the function, type, technology generation and development trend of logistics Traffic and Transportation, loading and uploading, delivery, equipment and facility of logistics center, logistics station and yards.

**Reference book:**

Self-edited Textbook

**Logistics Marketing Planning (3 credits)**

**Course code**: b4030072

**Suitable majors**: Logistics Management

**Instructor**: Wu Xinggen, Liu Zhenchao

**Brief introduction:**

Learn the basic theory, methods and strategy of logistics marketing, including the introduction of logistics marketing, logistics market investigation and analysis, logistics market segment and target market selection, the logistics enterprise product strategy, logistics enterprise pricing strategy, logistics enterprise promotion strategy, logistics distribution channel strategy, logistics marketing combination strategy, logistics customer service and relation management, logistics marketing plan, organization and control and the international logistics marketing.

**Reference book:**

Self-edited Textbook

**Elementary Practice of Logistics Vocation (1 credit)**

**Course code**: b4030073

**Suitable majors**: Logistics Management

**Instructor**: Zhou Yanjun, Hao Hao, Li Hehua and others

**Brief introduction:**

Understand the requirements of logistics vocation and logistics posts through lectures delivered by enterprise experts

**Reference book:**

Self-edited Textbook

**Simulated Practice of Western Economics (1 credit)**

**Course code**: b4030074

**Suitable majors**: Financial Management, International Business

**Instructor**: Wei Wenjing, Li Jun, Zheng Xiujun and others

**Brief introduction:**

The students are required to better master the basic concept and theory, hypothetic conditions and theoretical system framework of economics, get familiar with the basic theory, knowledge and all kinds of research methods or views of economics, laying a basis for the further learning and research.

**Reference book:**

Self-edited Experimental Instruction

**Introduction to Credit (2 credits)**

**Course code**: b4030075

**Suitable majors**: Credit Management

**Instructor**: Wang Yuhan, Wei Wenjing

**Brief introduction:**

The course objective is to summarize the background knowledge of credit management from the perspective of inner meaning of credit and credit management, basic contents of national credit management system, legal environment and data environment of credit management system and the industry of credit management, and require the students to understand the credit management majors and the knowledge system systematically so as to lay a basis for the learning of following specialty courses.

**Reference book:**

Introduction to Credit Management, Wu Jingmei, Shanghai University of Finance and Economics Press

**Graduation Internship and Graduation Design (Thesis) for the Major of Credit Management (12 credits)**

**Course code**: b4030076

**Suitable majors**: Credit Management

**Brief introduction:**

The students are required to complete a thesis with the learned theoretical knowledge and practical skills in four years through the internship in posts of enterprises and the document collection, which can meet the requirements on knowledge and technical standards for the bachelor’s degree granting.

**Credit Rating (Enterprise, Debt) (2 credits)**

**Course code**: b4030077

**Suitable majors**: Credit Management

**Instructor**: Zhao Yingdong, experts in the field

**Brief introduction:**

The students are required to realize the whole practical working skills and methods of enterprise and debt rating with the credit rating company’s simulation system.

**Reference book:**

Self-edited Textbook

**Collection and Management of Credit Data (1 credit)**

**Course code**: b4030078

**Suitable majors**: Credit Management

**Instructor**: Li Zhijun, expert in the field

**Brief introduction:**

The students are required to master the practical work of credit information and data collection and management with specialized credit checking technology or measures through the application of simulation system of global famous credit checking organization based on different direct or indirect information.

**Reference book:**

Self-edited Textbook

**Simulated Practice of Exhibition (2 credits)**

**Course code**: b4030079

**Suitable majors**: Exhibition Economy and Management

**Instructor**: Wang Shangjun, Zeng Xuehui, Wang Shengying, Feng Lan

**Brief introduction:**

The course requires the students majored in exhibition to analyze the exhibition onsite management with the investigation and observation of exhibition onsite, and master the contents and implementation of the exhibition organizer’s management of the exhibition. Based on the learning of exhibition management theory, the students are able to learn to search, collect and analyze documents, strengthen their understanding of the exhibition management and mastering of the operational skills, and consolidate their learned knowledge through practice.

**Reference book:**

Instruction Manual of Simulated Practice of Exhibition, Self-edited

**Practice of Security Investment (1 credit)**

**Course code**: b4030080

**Suitable majors**: Credit Management

**Instructor**: Tang Jiping, Song Huiwang, Li Zhijun and others

**Brief introduction:**

The students are able to apply the basic theory of investment into practice based on the macroeconomic information, data, policy and security investment software and master the experiences and methods of investment analysis on investment objects.

**Reference book:**

Self-edited Textbook

**Credit Financing of Small and Medium-sized Enterprise (1 credit)**

**Course code**: b4030081

**Suitable majors**: Credit Management

**Instructor**: Wang Yuhan, expert in the field

**Brief introduction:**

The students are required to use the simulation database system of small and medium-sized enterprise’s credit information, and master the credit financing practical skills with specialized credit checking technology and credit management methods based on all kinds of direct and indirect information.

**Reference book:**

Self-edited Textbook

**Practice of Specialized Vocational Skills (3 credits)**

**Course code**: b4030082

**Suitable majors**: E-commerce

**Instructor**: Wu Cuihong and Jiang Wenrong

**Brief introduction:**

Through the course, the students are able to improve their e-commerce skills, write e-commerce solutions and corresponding internship report, and cultivate their employment ability. The course contents include front-end webpage design, backstage management, network sales, computer application ability and business operation and others.

**Reference book:**

E-commerce Strategy and Solution, Yang Xingkai, China Machine Press

**Prerequisite**: Cross-national E-commerce

*Specialty Course*

School of Applied Arts Design

**3DMAX (2 credits)**

**Course code**: b2040001

**Suitable majors**: Digital Media Art

**Instructor**: Yan Xing

**Brief introduction:**

The main course objective is to instruct the students to skillfully use and master the 3DMAX 3D software and 3D space theory, have the basic knowledge and skills of 3D space modeling, material, lighting, role animation making, and understand the functions of models, materials, lighting, role animation in 3DMAX. Through the course, the students are able to make some complicated animation with 3DMAX.

**Reference book:**

3ds Max+VRay Impression Drawing Making: From Elementary to Expert Level, Wang Yumei and others, Communication and Post Press

**3DSMAX (3 credits)**

**Course code**: b2040002

**Suitable majors**: Environmental Design

**Instructor**: Yu Xiaoli

**Brief introduction:**

The course objective is to help the students skillfully master the application of this software in environmental design, master the general methods of 3D modeling and have the ability to make 3D deformation modeling with modifiers and apply the materials to the 3D objects with the material editing tools and the methods of setting lights and video cameras, and have the ability to construct complete scenario design.

**Reference book:**

3ds Max 2012 Basic Training Instruction (Chinese Version), Time’s Impression, Posts & Telecom Press

**3D Model Printing (2 credits)**

**Course code**: b2040003

**Suitable majors**: Product Design

**Instructor**: Engineering Training Center

**Brief introduction:**

The course is a basic course for the major of product design, an important practical instructional step, with the main purpose to cultivate their practical ability, master the elementary metalworking technology and simple component processing methods, and have the ability to read the drawings, processing signals and understand the technical conditions.

**Reference book:**

Metalworking Practice, Jin Xiede, Higher Education Press

**Prerequisite**: Computer Assistant Product Design

**AFTER EFFECTS (2 credits)**

**Course code**: b2040004

**Suitable majors**: Digital Media Art

**Instructor**: Yan Xing

**Brief introduction:**

The course focues on the instruction of late synthesis software AFTER EFFECT, so as to meet the objective of synthesis through special effect processing and technical processing of an edited video. The students are able to master the method of precise processing of different materials with special effects beyond comparison and rich and beautiful video effects through learning. Meanwhile, the software is an important tool for the late synthesis of CG animation.

**Reference book:**

Adobe After Effects CC Classic Instruction, Adobe Company, Posts & Telecom Press

**DREAMWEAVE (2 credits)**

**Course code**: b2040005

**Suitable majors**: Digital Media Art

**Instructor**: He Liping and Yang Guang

**Brief introduction:**

The course introduces the webpage design with Dreamweaver development tools, including creation, editing and setting a website, basic setting of page property, setting and editing of CSS, artwork of words, tables and layers, graphic processing and page inserting, framework construction, use and editing of template and database, publishing and maintenance of website. The course objective is to cultivate the students’ operational ability and practical ability of WEB design and the ability to design webpage with the learned knowledge.

**Reference book:**

Adobe Dreamweaver CS5 Classic Instruction (Chinese Version), Adobe Company, Posts & Telecom Press

**FLASH (2 credits)**

**Course code**: b2040007

**Suitable majors**: Digital Media Art

**Instructor**: He Liping, Yan Xing

**Brief introduction:**

This course is a 2D animation design course which is used for the website making and MTV animation design. The course mainly cultivates the students’ observation ability, practical ability and application ability, the ability to solve practical problems and improves their teamwork spirit. Through the learning of FLASH, the students are able to independently make animation and pictures, provide corresponding materials for the websites and webpage design and serve for the learning of other corresponding courses. Besides, the students are able to make advertisement animations and all kinds of small games with FLASH, laying a basis for the entering into the corresponding field.

**Reference book:**

Adobe Flash CS5 Classic Instruction (Chinese Version), Adobe Company, Posts & Telecom Press

**FLASH (3 credits)**

**Course code**: b2040008

**Suitable majors**: Visual Communication Design

**Instructor**: Yang Guang, Tian Hua, He Liping

This course is a 2D animation design course which is used for the website making and MTV animation design. The course mainly cultivates the students’ observation ability, practical ability and application ability, the ability to solve practical problems and improves their teamwork spirit. Through the learning of FLASH, the students are able to independently make animation and pictures, provide corresponding materials for the websites and webpage design and serve for the learning of other corresponding courses. Besides, the students are able to make advertisement animations and all kinds of small games with FLASH, laying a basis for the entering into the corresponding field.

**Reference book:**

Adobe Flash CS5 Classic Instruction (Chinese Version), Adobe Company, Posts & Telecom Press

**ILLUSTRATOR (2 credits)**

**Course code**: b2040009

**Suitable majors**: Visual Communication Design

**Instructor**: Yang Guang, Tian Hua, He Liping

**Brief introduction:**

The course is a platform course for the school. Through the course, the students are able to master the basic methods of vector drawing and graphic layout with ILLUSTRATOR and make art creation and design with ILLUSTRATOR and graphic processing software, drawing layout software. The course requirements: 1. systematically acquire the related instruction, function of tools, using method and application skills of ILLUSTRATOR; 2. Master the whole process of graphic analysis, drawing design and graphic output with ILLUSTRATOR; 3. skillfully make graphic processing and drawing design with ILLUSTRATOR and master the relationship between photoshop and coreldraw.

**Reference book:**

Illustrator CS 5 Standard Cases Instruction (Chinese Version), Luo Juan and others, China Machine Press

**INDESIGN (2 credits)**

**Course code**: b2040010

**Suitable majors**: Digital Media Art

**Brief introduction:**

The course is a specialty course for the professional layout and design application. The main course contents include: theoretical knowledge of publication, InDesign software application, method and process of design and making of brochures and books. The course objective is to help the students systematically understand and master the theoretical knowledge and operational skills of layout design through learning the course, laying a good basis for the design work in the future.

Through the course, the students are required to meet the following requirements: understand the basic theory of layout design, basic procedures of publication design, basic operation of InDesign software, the output step of publication design in printing process and e-publications, brochure design, book design and making.

**Reference book:**

Adobe InDesign CS5 Classic Instruction (Chinese Version), Adobe Company, Posts & Telecom Press

**INDESIGN (3 credits)**

**Course code**: b2040011

**Suitable majors**: Visual Communication Design

**Brief introduction:**

The course is a specialty course for the professional layout and design application. The main course contents include: theoretical knowledge of publication, InDesign software application, method and process of design and making of brochures and books. The course objective is to help the students systematically understand and master the theoretical knowledge and operational skills of layout design through learning the course, laying a good basis for the design work in the future.

Through the course, the students are required to meet the following requirements: understand the basic theory of layout design, basic procedures of publication design, basic operation of InDesign software, the output step of publication design in printing process and e-publications, brochure design, book design and making.

**Reference book:**

Adobe InDesign CS5 Classic Instruction (Chinese Version), Adobe Company, Posts & Telecom Press

**Photoshop (2 credits)**

**Course code**: b2040012

**Suitable majors**: Visual Communication Design

**Instructor**: Yang Guang, Tian Hua, He Liping

**Brief introduction:**

The course is a platform course for the school. Through the course, the students are able to master the basic methods of bitmap graphic processing with PHOTOSHOP and make graphic processing and different kinds of art creation and design with PHOTOSHOP, graphic processing software and drawing layout software. The course requirements: 1. systematically get the function, using methods and application skills of related instruction and tools of PHOTOSHOP; 2. master the whole process of graphic analysis, drawing design and graphic output with PHOTOSHOP; 3. skillfully make graphic processing and drawing design with PHOTOSHOP and achieve the interoperability between PHOTOSHOP and other drawing software.

**Reference book:**

Elementary and Advanced Photoshop (Chinese Version), Davis, Posts & Telecom Press

**POP Advertisement Design (3 credits)**

**Course code**: b2040013

**Suitable majors**: Visual Communication Design

**Instructor**: Tian Hua, Gao Derong

**Brief introduction:**

The course is a specialty course for the major of visual communication design with practicability. The instructional objective of the course is to help the students make drawings and computer POP advertisement design with modern design methods through lecturing, basic exercises and design practice. Through the course, the students are able to understand the basic concept of POP advertisement design and the basic property and features of the design, understand the development process of POP advertisement design, and draw and make all kinds of POP advertisements in accordance with the POP advertisement design procedures. The course stresses the design and making of POP advertisement with the main materials of papers.

**Reference book:**

POP Advertisement Design, Tsinghua University Press

**SKETCHUP (3 credits)**

**Course code**: b2040014

**Suitable majors**: Environmental Design

**Instructor**: Zou Taotao, Yao Zhe

**Brief introduction:**

The students are required to master how to make 3D modeling rapidly, how to fully use the model data to make spatial analysis and virtual reality, so as to make the effects of perfect integration of creation and design.

**Reference book:**

SKetchUp7 Constructional Sketch Design (DVD Instructional Version), Zhang Hengguo, Posts & Telecom Press

**Prerequisite**: Construction Drafting (including CAD)

**UI Interface Design (4 credits)**

**Course code**: b2040015

**Suitable majors**: Digital Media Art

**Instructor**: Yan Xing, Yang Guang

**Brief introduction:**

The course helps the students master the basic design rules and design principles of UI interface design, make interactive interface design of different media with the learned basic design knowledge of graphic deign, layout and others, so as to make the final visual effects.

**Reference book:**

UI Interface Design, Zhang Xiaoling and others, Electronic Industry Publishing House

**WEB Interface Design (4 credits)**

**Course code**: b2040016

**Suitable majors**: Digital Media Art

**Instructor**: He Liping, Yang Guang

**Brief introduction:**

This course is a compulsory specialty course, a design and technological course with high practicability. The main contents are the webpage editing and design. The course objective is to help the students understand the basic knowledge of webpage interface design, understand the theory of creative design, color design and layout design in webpage interface and master the impression drawing design methods and procedures of webpage interface design.

**Reference book:**

Web Interface Design, Bill Scott and others, Electric Industry Publishing House

**Prerequisite**: Dreamweaver, Flash

**Packaging Design (A) (3 credits)**

**Course code**: b2040017

**Suitable majors**: Visual Communication Design

**Instructor**: Luo Bin, Qian Yuanping, Gao Derong

**Brief introduction:**

The course is a core specialty course for the major of visual communication design, a compulsory course (which belong to the module of basic application ability of engineering technology), helping the students understand and master the structure design of product packaging, master the innovative way and expression way of packaging structure of different paper products. The course mainly introduces the material and structure of packages (paper box). Through lectures and design practice, the students are able to understand the materials and structures of packages and correctly master the methods of packaging knowledge and structural forming of paper box, and design packages (paper box structure) with creative shape, reasonable structure and meet the requirements of modern big industry production, in accordance with the product property of packages and the needs of target consumption of market, laying a good basis for the learning of following core specialty courses of Package Design (B) and Theme Design.

**Reference book:**

Package Structure Design, Sun Cheng, China Light Industry Press

**Packaging Design (B) (4 credits)**

**Course code**: b2040018

**Suitable majors**: Visual Communication Design

**Instructor**: Luo Bin, Qian Yuanping, Gao Derong

**Brief introduction:**

The course is a core specialty course for the major of visual communication design, a compulsory course (which belong to the module of design practical ability), helping the students understand and master the structure design of product packaging, master the innovative way and expression way of packaging structure of different paper products. The course mainly introduces the visual design of series packages. Through lectures and design practice, the students are able to understand the theories and practice of packaging design and make structural and visual overall design of series packages with the knowledge of packaging material and printing technologies and design packages (paper box structure) with creative shape, reasonable structure and meet the requirements of modern big industry production, in accordance with the product property of packages and the needs of target consumption of market.

**Reference book:**

Packaging Design, Wang Anxia, Nanjing Normal University Press

**Prerequisite**: Layout Design

**Packaging Design (C) (3 credits)**

**Course code**: b2040019

**Suitable majors**: Visual Communication Design

**Instructor**: Luo Bin, Qian Yuanping, Gao Derong

**Brief introduction:**

The course is a core specialty course for the major of visual communication design, a compulsory course (which belong to the module of design practical ability), helping the students understand and master the structure design of product packaging, master the innovative way and expression way of packaging structure of different paper products. The course mainly introduces the visual design of series packages. Through lectures and design practice, the students are able to understand the theories and practice of packaging design and make structural and visual overall design of series packages with the knowledge of packaging material and printing technologies and design packages (paper box structure) with creative shape, reasonable structure and meet the requirements of modern big industry production, in accordance with the product property of packages and the needs of target consumption of market.

**Reference book:**

Packaging Making Cases, Ding Jianchao, Liu Fenghua, China Water Power Press

**Prerequisite**: Layout Design

**Layout Design A (3 credits)**

**Course code**: b2040020

**Suitable majors**: Visual Communication Design

**Instructor**: Tian Hua, Gao Derong and Xiao Tai

**Brief introduction:**

The course requires the students to master different visual art phenomenon and rules, like the hue and combination of colors, intensity and luminance, interrelation between words and pictures, the compositional elements of layout skeleton, basic phenomenon and rules of colors, generation and combination of textures, the composition methods and changes in modes and rules. The course contents: introduction to layout design, the understanding and practice of visual design elements of layout design, the understanding and practice of composition rules and methods of layout design elements, the understanding of the relationship between expression contents and modes of layout design, the features of layout design in different medias, the understanding and practice of different applied design mode features.

**Reference book:**

Layout Design, Chen Qing, Shanghai People’s Fine Art Publishing House

**Layout Design (B) (3 credits)**

**Course code**: b2040021

**Suitable majors**: Visual Communication Design

**Instructor**: Tian Hua, Luo Bin, Gao Derong

**Brief introduction:**

The course requires the students to master different visual art phenomenon and rules, like the hue and combination of colors, intensity and luminance, interrelation between words and pictures, the compositional elements of layout skeleton, basic phenomenon and rules of colors, generation and combination of textures, the composition methods and changes in modes and rules. The course contents: introduction to layout design, the understanding and practice of visual design elements of layout design, the understanding and practice of composition rules and methods of layout design elements, the understanding of the relationship between expression contents and modes of layout design, the features of layout design in different medias, the understanding and practice of different applied design mode features.

**Reference book:**

Layout Design, Chen Qing, Shanghai People’s Fine Art Publishing House

**Layout Design (including PS) (2 credits)**

**Course code**: b2040022

**Suitable majors**: Environmental Design

**Instructor**: Sun Xinping, Shen Ya

**Brief introduction:**

The course is a platform course of the school. Through the course, the students are required to have some understanding and research on the features, composition and combination rules of design elements of words, pictures, format of layout design, learn the relationship between the expression possibility and contents, and cultivate their basic aesthetic tastes and the ability to adjust and lay out the picture.

**Reference book:**

Instruction on Layout Design, Hu Ke, Zhejiang People’s Fine Art Publishing House

**Layout Design (2 credits)**

**Course code**: b2040023

**Suitable majors**: Product Design

**Instructor**: Zhang Guiyi, Ling Chenye

**Brief introduction:**

The course is a basic course for the major of product design, which is an important compositional part of modern art design and an important measure for visual communication. It is a art with relatively independence and the expression language of plain design. The layout design shows the regular structure of visual characteristics and the visual global construction process.

**Reference book:**

Layout Design, Yu Qingqing, Southeast University Press

**Prerequisite**: Design Composition A, B

**Logo Design (3 credits)**

**Course code**: b2040024

**Suitable majors**: Visual Communication Design

**Instructor**: Qian Yuanping

**Brief introduction:**

The course is a specialty course for the major of visual communication design. Through the course, the students are required to comprehensively understand the related knowledge of logo design, master the methods of logo design, cultivate their ability to design meaningful logo works in simple graphic language.

Through the instruction, the students are required to comprehensively and correctly understand the concept of logos, understand the important role of logo in modern social life and business activity, master the correct logo design creative procedures and production method from the perspectives of logo origin, development history and development trend.

**Reference book:**

Logo Design, Qian Pingyuan, Shanghai Pictorial Press

**Realization Techniques (4 credits)**

**Course code**: b2040025

**Suitable majors**: Product Design

**Instructor**: Zhang Xin, Liang Chao

**Brief introduction:**

The course is a basic course for the major of product design, researching on the shapes, structure, color and textures of hand-made drawing products on papers so as to reach the expected effect. The course objective is to help the students master the realization techniques of product style and reflect the style of designed products in maximum.

**Reference book:**

Product Design Sketch, Qingshui Jizhi, Tsinghua University

**Prerequisite**:

Design Sketching

**Material Modeling (A) (2 credits)**

**Course code**: b2040026

**Suitable majors**: Environmental Design, Digital Media Art, Visual Art Design

**Instructor**: Xiao Tai, Li Chunhui

**Brief introduction:**

Material Modeling (A) is a specialty course for the major of visual communication design, integrating art and technology, practice and theory, covering the 3D modeling creation, model design production, material technology, fine arts and others. Through the course, the students are required to learn the model design, processing technology and production technology of glass materials, understand the colored glazed technology in the modern material art design, and have the elementary practical operational ability of glaze design, model production, casting, fusion and others.

**Reference book:**

Modern Glass Art Design, Xiao Tai, Shanghai Bookshop Press

**Material Modeling (B) (2 credits)**

**Course code**: b2040027

**Suitable majors**: Product Design

**Instructor**: Li Chunhui

**Brief introduction:**

Material Modeling (B) is a specialty course for the major of product design, integrating art and technology, art creation and practice, covering the decoration basis, 3D modeling, production technology and others. The course introduces material language, artistic style, multi-dimensional modeling and others.

The course requires the students to master the 3D modeling language, cultivate the students’ ability to make creative 3D works with ceramic malleable materials and processing technology and basically understand the development of traditional ceramics and contemporary ceramic art.

Reference:

Contemporary Ceramic Art Design, Chen Xiaodan, Chen Guanghui, Guangxi Art Press

**Prerequisite**: Design Composition A, B

**Product Structure Engineering (2 credits)**

**Course code**: b2040028

**Suitable majors**: Product Design

**Instructor**: Wang Hong

**Brief introduction:**

This is a selective specialty course for the major of product design, requiring the students to understand and master the physical and chemical features, modeling technology, surface processing, modern modeling processing technology of the common materials, and basically have the related basic engineering design application technologies.

**Reference book:**

Product Structure Design, Liu Baoshun, China Architectural Industry Press

**Prerequisite**:

Design Graphics, Computer Assistant Product Design

**Product Model Building (2 credits)**

**Course code**: b2040029

**Suitable majors**: Product Design

**Instructor**: Wang Hong, Shen Jie, Li Chunhui

**Brief introduction:**

Model Building is a basic specialty course for the major of product design. Through the model building, the students are required to further inspect the problems which can’t be reflected in product or demonstration model design plans, providing a reliable basis for the perfection of design plans. The main course objective is to learn and mast the procedures and methods of model building and understand the features and modeling technology of common model building materials.

**Reference book:**

Model Building, Zheng Jianqi, Tang Jun, Higher Education Press

**Prerequisite**: Design Graphics, Computer Assistant Product Design

**Product Design (A) (8 credits)**

**Course code**: b2040030

**Suitable majors**: Product Design

**Instructor**: Shen Jie

**Brief introduction:**

The course is a specialty course for the major of product design. Through the course, the students are required to understand the basic knowledge and technology of product design, cultivate their ability to discover and solve problems, train their expression and comprehensive design ability, so as to improve their theoretical and technological lavels on the asepects of knowledge, senses, creation and engineering technology.

**Reference book:**

Product Creative Design, Liu Chuankai, China Youth Press

**Prerequisite**: Design Graphics, Computer Assistant Product Design, Design Creation Thoughts, Design Comprehensive Expression

**Product Design (B) (8 Credits)**

**Course code**: b2040031

**Suitable majors**: Product Design

**Instructor**: Ling Chenye, Zhang Xin

**Brief introduction:**

The course is a specialty course for the major of product design. Through the course, the students are able to further master the knowledge and technology of product design and fully apply the mastered product knowledge and skills in the design practice.

**Reference book:**

Product Design Procedures and Methods, Jiang Jinchen, Pi Yongsheng, Southwest Normal University Press

**Prerequisite**: Product Design A

**Product Design (C) (8 credits)**

**Course code**: b2040032

**Suitable majors**: Product Design

**Instructor**: Wang Hong, Shen Jie, Liu Zhe

**Brief introduction:**

The course is a specialty course for the major of product design, which is an important measure for the students majored in product design to improve their comprehensive researching and innovative ability. Through the course, the students are able to pay attention to the professional theory of product design, but also get in touch with the extensive knowledge area covering engineering technology, market, management, social humanity, art history and theory, so as to help them solve the contradictions between different requirements. Meanwhile, the students are able to pay more attention to the past, current and future of society, culture and life and master the design development trend, and have the cross-disciplinary and cross-major collaborative ability in different stages.

**Reference book:**

Product Improvement Design, Zhang Zhan, Wang Hong, Shanghai Literature and Art Publishing House

**Prerequisite**: Product Design B

**Product Display Design (5 credits)**

**Course code**: b2040033

**Suitable majors**: Product Design

**Instructor**: Liang Chao

**Brief introduction:**

The course is a specialty course for the major of product design, which is an applied discipline developing with the development of commercial economy, scientific technology, education and culture, including the display design and exhibition prop modeling design of different kinds of museums, exhibition, commercial store and show window, developing into an industry called as “display industry” with high economic effect and large cultural influence. It integrates the architectural space design, indoor art design, plain art design and others. As the disciplinary exploration of modern product design, the study on display design can expand the students’ specialty knowledge and design ability.

**Reference book:**

Display Art Design, Ling Fuhou, Ma Weixing, Beijing University of Science and Engineering Press

**Prerequisite**: Product Design A, B and C

**Display Art Design (3 credits)**

**Course code**: b2040034

**Suitable majors**: Environmental Design

**Instructor**: Zhang Ming, Shen Ya, Xu Qiaojian

**Brief introduction:**

This course is a specialty course for the major of environmental design, introducing the basic concept and methods of display art design. Through learning and practice, the students are required to master the relations between display art and indoor design and have the ability of selection, planning and design of indoor furnishings so as to construct an interior environment with more humanity and more suitable for the psychological and physiological needs of human beings.

**Reference book:**

Indoor Display Art Design, Qiao Guoling, Shanghai People’s Fine Art Publishing House

**Prerequisite**: Architectural Drawing, Ergonomics, Design Expression Skills, Computer Assistant Design, Design Color, Design Composition, Architectural & Indoor Design History

**E-magazine and E-book Design (3 credits)**

**Course code**: b2040035

**Suitable majors**: Digital Media Art

**Instructor**: Gao Derong

**Brief introduction:**

The course closely connects to the daily life of students, cultivates the students’ innovative ability and the ability to solve practical problems and motivates the students’ infinite creativity and imagination and creation of more and more excellent art works through the processing of graphs, videos and other materials and the changes into more colorful and compelling visual languages. The course requires the students to make basic operations of graphic color adjusting, graphic synthesis and others independently, and integrate the graphs, words, audios and videos during the process of e-magazine making with the video-editing software.

**Reference book:**

E-magazine Design and Color Matching, Jiang Yonghua, China Science and Technology Press

**Prerequisite**:

**Animation Design Theory (2 credits)**

**Course code**: b2040036

**Suitable majors**: Digital Media Art

**Instructor**: Yan Xing

**Brief introduction:**

The course cultivates the students’ ability and speed of making animation and their mastering of animation rules, which is the core course for the major of movie animation. The course stresses the cultivation of students’ skills for their adaption into the animation work in the future, laying a basis for the animation design in the future.

**Reference book:**

Animation Design Theory, Xu Lingling, Tsinghua University Press

**Prerequisite**:

**Post Design and Production of Multimedia Special Effect (4 credits)**

**Course code**: b2040037

**Suitable majors**: Digital Media Art

**Instructor**: Yan Xing

**Brief introduction:**

The course requires the students to master the basic theory of movie animation and the rules of visual aesthetics of movie post production of special effect, apply the theory and methods of movie animation harmony, the rules of colors and modes composing the graphic themes into the design.

**Reference book:**

Post-Production of Movie Animation Special Effect, Yang Qing and others, Posts & Telecom Press

**Non-linear Editing (4 credits)**

**Course code**: b2040038

**Suitable majors**: Digital Media Art

**Instructor**: Yan Xing, Yang Guang

**Brief introduction:**

The course uses the materials actually shoot to make special effects with 3D animation and synthesis technology and form a complete movie with sounds by editing and rearranging the clips. The course is an important specialty course based on the learning of course of color structure, Photoshop, flash and others. The course requires the students to systematically learn the operational skills of Adobe Premiere software, learn and master the movie post production methods with series of examples and combine the learned knowledge to the practice to produce perfect works.

**Reference book:**

Non-linear Editing of Movie Media: Adobe Premiere Pro CS5: Yang Fangqi, Tsinghua University Press

**Prerequisite**: After Effects

**Public Art Design (2 credits)**

**Course code**: b2040039

**Suitable majors**: Environmental Design

**Instructor**: Shen Ya, Xu Qiaojian

**Brief introduction:**

The course objective is to help the students master the aesthetic rules of art form, the features and design theory of decoration art, cultivate their expression ability of decoration modeling, and improve their practical ability and the ability to apply the decorative materials and appreciate environmental decoration art, reflecting the coordination, symbiosis and harmony between the subject awareness of human beings and the environments.

**Reference book:**

Decoration Art Design, Lu Xiaoyun, Peking University Press

**Prerequisite**: Design Composition, Indoor Design, Landscape Design

**Advertisement Design (A) (3 credits)**

**Course code**: b2040040

**Suitable majors**: Visual Communication Design

**Instructor**: Qian Yuanping, Gao Derong

**Brief introduction:**

This course is a specialty course for the major of visual communication design, integrating the contents of many specialty courses with high theoreticability and practicability. Through the instruction and design practice, the students are able to make commercial advertisement design with modern design methods. Besides, the students are required to understand the basic concept of advertisement design and the basic property or features of design, understand the development history of advertisement design and some successful design cases, make correct advertisement design orientation and scientific commercial advertisement design activities in accordance with the procedures and design orientation of advertisement design.

**Reference book:**

Instruction for the Commercial Advertisement Design, Wang Yafei, Liaoning Art Press

**Prerequisite**: Layout Design

**Advertisement Design (B) (2 credits)**

**Course code**: b2040041

**Suitable majors**: Visual Communication Design

**Instructor**: Qian Yuanping, Gao Derong

**Brief introduction:**

This course is a specialty course for the major of visual communication design, integrating the contents of many specialty courses with high theoreticability and practicability. Through the instruction and design practice, the students are able to make commercial advertisement design with modern design methods.

Through the learning of advertisement design (A), the students have already understood the basic knowledge of advertisement design, including the introduction, brief development history and trend of advertisement design, especially the methods and skills of poster design in the advertisement design. Through the course, the students are able to strengthen their understanding and mastering of the procedures and skills of poster design, emphasize on the research on the cultural and commonweal posters with cultural connation, and make correct advertisement design orientations based on the investigation of the colorful cultural market, so as to qualify for the work of cultural and commonweal poster advertisement design.

**Reference book:**

Poster Advertisement, Teng Xuexiang, Shandong Art Press

**Prerequisite**: Layout Design

**Advertisement Photography (3 credits)**

**Course code**: b2040042

**Suitable majors**: Visual Communication Design

**Instructor**: Li Tian

**Brief introduction:**

The course is a specialty course for the major of visual communication design with high theoretical and practical natures, which mainly introduces the world observation from the perspective of photography and the features of professional photography. The course objective is to help the students master the related professional photographing knowledge, requirements and skills, understand the relations between professional photography and design, cultivate their analysis ability of photographing objects and improve their observation ability and aesthetic judgment, so as to better serve for the learning of the specialty.

**Reference book:**

Instruction for the Commercial Photography Practice, Zhu Jie, Shanghai People’s Fine Art Publishing House

**Prerequisite**: Photoshop

**Environmental Orientation Design (2 credits)**

**Course code**: b2040043

**Suitable majors**: Environmental Design

**Instructor**: Zou Taotao, Sun Xinping

**Brief introduction:**

The course is a specialty course for the cultivation of multiple abilities for the major of environmental design. Through the course, the students are able to have a correct understanding of the environmental orientation design and master the basic knowledge, correct design procedures and methods with the theoretical lecturing, case analysis and design practice and understand that the environmental orientation design is a comprehensive design with high systematic, functional and art natures.

**Reference book:**

Public Orientation Design, Zhang Lili, Shanghai People’s Fine Art Publishing House

**Prerequisite**: Ergonomics, Architectural Decoration Materials and Structure, Interior Design

**Basic Computer Programming (2 credits)**

**Course code**: b2040044

**Suitable majors**: Digital Media Art

**Brief introduction:**

The course comprehensively, deeply and systematically introduces the program design methods and languages, helping the students have an elementary understanding of the computer programming and the concept of program design and learn to make programs with a typical program design language, have the program design methods and form a good program design style. The course objective is to make the students have a comprehensive and systematic understanding of the program design through the practice, so as to lay a solid theoretical basis for the learning in the future and have an elementary concept of the main methods and practical application of the program design.

**Reference book:**

Computer Application Web Programming Basis: HTML, CSS, JavaScript, Chen Chu and others, Tsinghua University Press

**Computer Assistant Product Design (RHINO+Rendering) (5 credits)**

**Course code**: b2040045

**Suitable majors**: Product Design

**Instructor**: Liu Zhe

**Brief introduction:**

The course is a basic specialty course for the major of art design (modern product design). Computer assistant product design plays an assistant role in the industrial design, product design, machinery drawing, model design, especially plays a irreplaceable function in the modern industry. The course objective is to require the students to make or modify the data model, the computer rendering model, the output use of scenarios and models with the software through the lecturing and design practice.

**Reference book:**

Practical Instruction for Rhino 5.0 Industrial Design, Wang Maomin, Xie Ling, Posts & Telecom Press

**Prerequisite**: Photography, Design Graphics

**Computer Assistant Plain Design (PS+AI) (3 credits)**

**Course code**: b2040046

**Suitable majors**: Product Design

**Instructor**: Liu Zhe

**Brief introduction:**

Through the course, the students are able to master the basic methods of bitmap and vector image processing and the art creation and design with PHOTOSHOP, AI and other graphic processing or drawing layout software.

**Reference book:**

Design + Production + Printing + Commercial Template Photoshop + Illustrator Cases, Li Jie, Posts & Telecom Press

**Furniture Design (3 credits)**

**Course code**: b2040047

**Suitable majors**: Environmental Design

**Instructor**: Yao Zhe, Sun Xinping

**Brief introduction:**

This course is a specialty course for the major of environmental design, which mainly researches on the history, modeling, material and technology of furniture. The course objective is to help the students understand the furniture history, research on the life style, get familiar with the furniture materials and technology and absorb the cultural elements, so as to create modern furniture with individuations.

**Reference book:**

Practice of Furniture Design—Instruction for the Application of Modern Design, Reng Zhongquan, Jiangsu Fine Art Press

**Prerequisite**: Architectural Drawing, Ergonomics, Form Composition

**Basic Architecture and Model Production (4 credits)**

**Course code**: b2040048

**Suitable majors**: Environmental Design

**Instructor**: Xu Qiaojian, Yao Zhe

**Brief introduction:**

The course is a basic specialty course for the major of environmental design, which mainly introduces the main function and basic theory of architectures, the general process and methods of architectural design, so as to help the students correctly understand the connation of architecture. The main tasks for the model production is to help the students have the ability to interpret the space combination and apply the common materials to express the design thoughts in micro models and master the basic researching methods of architectural design and interior design.

**Reference book:**

Elementary Introduction to Architecture, Architectural Model Production, Tian Xuezhe, China Architectural Industry Press

**History of Architectural and Interior Design (3 credits)**

**Course code**: b2040049

**Suitable majors**: Environmental Design

**Instructor**: Zou Taotao, Wang Yuke

**Brief introduction:**

The course is an important theoretical course for the major of environmental design, with the main tasks to describe and explain the generation, changes and disappearance of architectural and interior design in different stages. Through the course, the students are required to comprehensively understand the main thoughts and theories, typical styles, representative persons and works of architectural and interior design, so as to improve their theoretical and analysis ability and serve for the professional design creation in the future.

**Reference book:**

Architectural History of Foreign Countries, Chen Zhihua, China Architectural Industry Press

**Prerequisite**: Elementary Introduction to Architecture, Architectural Drawing

**Architectural Drawing (including CAD) (4 credits)**

**Course code**: b2040050

**Suitable majors**: Environmental Design

**Instructor**: Yu Xiaoli, Wang Yuke

**Brief introduction:**

The course is a basic specialty course for the major of environmental design, which mainly researches on the architectural drawing standards and hand printed techniques. The course objective is to require the students to skillfully master the standard drawing of plan, vertical section, axonometric drawing, cross section and the joint drawing with the hand painted techniques as an important measure of design expression and communication.

**Reference book:**

Architectural Drawing Production, Reading and CAD, Wang Xiaoshu, China Water Power Press

**Architectural Decoration Material and Structure (3 credits)**

**Course code**: b2040051

**Suitable majors**: Environmental Design

**Instructor**: Sun Xinping

**Brief introduction:**

The course mainly researches on the theory and methods of architectural decoration structure, so as to further improve the students’ space imagination ability and drawing skills and help them master the application and expression methods of architectural decoration materials.

**Reference book:**

Architectural Decoration Materials and Structure, Ding Liwei, Chen Jinjing, Qiao Jimin, China Electric Power Press

**Interface Design (3 credits)**

**Course code**: b2040052

**Suitable majors**: Visual Communication Design

**Instructor**: Yang Guang, He Liping

**Brief introduction:**

This is a selective specialty course, a design and technical course with high operational and practical nature. The course mainly introduces the editing and design of webpage. The course objective is to help the students understand the basic knowledge of webpage interface design, the creative design, color design and layout design theory of webpage interface and master the design methods or procedures of effective drawings of webpage interface design.

**Reference book:**

Web Interface Design, Bill Scott, Publishing House of Electronics Industry

**Prerequisite**: PHOTOSHOP

**Landscape Design (A) (2 credits)**

**Course code**: b2040052

**Suitable majors**: Environmental Design

**Instructor**: Fan Tianhua, Xu Qiaojian, Yao Zhe

**Brief introduction:**

The course objective is to cultivate the students’ correct design view and thoughts through the lecturing of basic theoretical design methods of landscape design with the practice of architectural assistant landscape design.

**Reference book:**

Landscape Design Basis, Gong Wei, Zhang Limin, Beijing University of Science and Technology Press

**Prerequisite**: Architectural Drawing, Architectural Basis and Model Design, Design Expression Techniques

**Landscape Design (B) (3 credits)**

**Course code**: b2040054

**Suitable majors**: Environmental Design

**Instructor**: Fan Tianhua, Xu Qiaojian, Yao Zhe

**Brief introduction:**

The course objective is to cultivate the student’s ability to reasonably analyze and plan the special environmental landscapes with the design thoughts and methods of modern science through the perfection of students’ conception and expression, laying a solid basis for the environmental landscape planning and design in the future.

**Reference book:**

Environmental Landscape Design, Zheng Hong, China Architectural Industry Press

**Prerequisite**: Architectural Drawing, Architectural Basis and Model Design, Design Expression Techniques

**Introduction to Space (2 credits)**

**Course code**: b2040055

**Suitable majors**: Environmental Design

**Instructor**: Sun Xinping

**Brief introduction:**

Through the course, the students are required to get familiar with the three basic elements and types of architectural spaces, master the structure and expression modes of architectural modes, realize the exploration, seeking and appreciation of architectural spaces with the application of different changing rules of architectural structure and create brand new architectural space environments with the modern design methods.

**Reference book:**

Theory of Architectural Space Combination, Peng Yigang, China Architectural Industry Press

**Green and Sustainable Environmental Design (2 credits)  
Course code**: b2040056

**Suitable majors**: Environmental Design

**Brief introduction:**

The green design reflects the human being’s rethinking of the environmental and biological destruction aroused by the modern technologies and cultures and the regression of designer’s morals and social responsibilities. The course helps the students improve their green and sustainable sensibility in environmental design.

**Reference book:**

Green Design Methods, Technologies and Application, Liu Zhifeng, National Defense Industry

**Brand and Product Image Design (5 credits)**

**Course code**: b2040057

**Suitable majors**: Product Design

**Instructor**: Zhang Guiyi

**Brief introduction:**

The course is a specialty course for the major of product design, which integrates the contents of many specialty courses with high theoretical nature. Through the lecturing and design practice, the students are able to make systematic design of the internal and external visual image of enterprises with the modern design methods and make corresponding standard VI management handbook in accordance with the operational thoughts and development needs of enterprises.

**Reference book:**

Logo and Enterprise Image Design—Basic Planning Textbook for Art Design in Colleges, Ji Xianghong, Tsinghua University Press

**Prerequisite**: Layout Design

**Enterprise Image Design (2 credits)**

**Course code**: b2040058

**Suitable majors**: Environmental Design

**Instructor**: Sun Xinping

**Brief introduction:**

Through the lecturing and design practice, the students are able to make systematic design of the internal and external visual image of enterprises with the modern design methods and make corresponding standard VI management handbook in accordance with the operational thoughts and development needs of enterprises.

**Reference book:**

VI Design Instruction: Yu Binhao, Zhejiang People’s Fine Art Publishing House

**Enterprise Image Design (5 credits)**

**Course code**: b2040059

**Suitable majors**: Visual Communication Design

**Instructor**: Qian Yuanping, Gao Derong and Hou Ling

**Brief introduction:**

The course is a specialty course for the major of visual communication design, which integrates the contents of many specialty courses with high theoretical nature. Through the lecturing and design practice, the students are able to make systematic design of the internal and external visual image of enterprises with the modern design methods and make corresponding standard VI management handbook in accordance with the operational thoughts and development needs of enterprises. The students are required to understand the basic concept, property and tasks of enterprise image design, development history of CI design, successful design cases of VI and the theory of system forming, make market investigation and design orientation, determine the design expression elements and systematically make VI design handbooks in accordance with VI design procedures.

**Reference book:**

VI Design, Gao Derong, Yan Yaohua, Shanghai People’s Fine Art Publishing House

**Prerequisite**: Layout Design and Logo Design

**Ergonomics (2 credits)**

**Course code**: b2040060

**Suitable majors**: Product Design

**Instructor**: Ling Chenye

**Brief introduction:**

The course is a specialty course for the major of product design. Through the course, the students are able to research on and understand the relations between human beings, machines and the working environments. The course objective is to help the students deal with the relation between human, machine and environment well in product design and make the product more reasonable and more scientific.

**Reference book:**

Ergonomics in Product Design, Wang Jicheng, Chemical Industry Press

**Prerequisite**: Product Design A

**Ergonomics (2 credits)**

**Course code**: b2040061

**Suitable majors**: Environmental Design

**Instructor**: Zhang Ming, Shen Ya, Sun Xinping

**Brief introduction:**

The course is a specialty course for the major of environmental design, reflecting the modern design thoughts of human orientation. Through the lecturing and social investigation, the students are able to clearly understand the relations between human beings and environments, making the environmental design, especially the interior design more suitable for the needs of human being’s life and work.

**Reference book:**

Ergonomics and Interior Design, Liu Shenghuang, China Architectural Industry Press

**3D Movie Special Effect (4 credits)**

**Course code**: b2040062

**Suitable majors**: Digital Media Art

**Instructor**: Yan Xing

**Brief introduction:**

The course objective is to help the students master the basic knowledge of movie special effect production, cultivate their basic ability of directing, shooting and post production in the special visual effect production of movies or TV shows and master the rules or skills of movie special effect productions in theory and practice.

**Reference book:**

Movie Post Special Effect Synthesis (2nd edition), Mao Yin, China Light Industry Press

**Prerequisite**: 3DMAX

**Commercial Illustration (2 credits)**

**Course code**: b2040063

**Suitable majors**: Visual Communication Design

**Instructor**: Tian Hua, Wang Donghui, Hou Ling

**Brief introduction:**

The course is a specialty course for the major of visual communication design (visual communication design), a course introducing the illustration skills with high practicability. The course objective is to instruct the students to learn the multiple expression techniques of commercial illustration and the drawing of commercial illustrations with different drawing tolls including computer production software. Through lecturing and design practice, the students are able to understand the basic concept and function of commercial illustration, the historical development and different styles of commercial illustration, master some basic commercial illustration skills and create illustrations with multiple features in accordance with the design requirements and procedures.

**Reference book:**

Instruction of Commercial Illustration, Liu Shiyan, Xing Gangxia, Higher Education Press

**Prerequisite**: Design Sketch, Decoration Graph, Graphic Creativity

**Design Standards and Budgets (2 credits)**

**Course code**: b2040064

**Suitable majors**: Environmental Design

**Instructor**: Fu Hongxia

**Brief introduction:**

The course is a specialty course for the major of environmental design, introducing the theory, basis, procedures and application of construction project budget. The course requires the students to feel and understand of the function of construction project budget from actual cases, especially the importance of the application of architectural decoration project cost in this discipline. Through the practice of detailed design assignments, the students are able to master the detailed methods and procedures of design standards and budgets’ application in interior environmental design.

**Reference book:**

Project Budge and Bidding, Liu Jun, Jin Ruijun, Tongji University Press

**Prerequisite**: Introduction to Architecture, Architectural Drawing, Ergonomics, Design Expression Techniques, Interior Design Theory

**Design Expression Skills (3 credits)**

**Course code**: b2040065

**Suitable majors**: Environmental Design

**Instructor**: Fan Tianhua, Xu Qiaojian

**Brief introduction:**

The course is a basic specialty course for the major of environmental design, which pays attention to the cultivation of students’ design thoughts and expression ability. Through the introduction of graphic analytic methods and different rapid and hand printed expression techniques used by the domestic and foreign architectural and interior designers in recent years and the practical course exercises, the course improves the students’ graphic thinking and design expression ability.

**Reference book:**

Expression Techniques of Hand Printed Effect Drawings, Tang Dianmin, Cui Yunfei, Tongji University Press

**Prerequisite**: Architectural Drawing

**Design Creative Thoughts (2 credits)**

**Course code**: b2040066

**Suitable majors**: Product Design

**Instructor**: Shen Jie

**Brief introduction:**

The course is a specialty course for the major of product design. Through the course, the students are required to understand that the creative thoughts refer to the thinking process of solving problems with innovative and special methods; and the students are able to observe problems with transnormal visions, views and methods and propose solutions with special thinking modes and methods. Meanwhile, the students shall understand that the creativity refers to the subjects or modes with values which don’t exit before and master the thinking methods which others don’t discover, think of or solve.

**Reference book:**

Design Thoughts and Methods, Chen Nanruo, Hubei Fine Art Press

**Prerequisite**: Expression Techniques

**Design Methods (2 credits)**

**Course code**: b2040067

**Suitable majors**: Environmental Design

**Instructor**: Yao Zhe, Zou Taotao

**Brief introduction:**

The course is a specialty course for the major of environmental design, with the main objective to understand the main thinking features and methods of design with basic theory or knowledge of design methods, master the design elements and main procedures, so as to make full preparations for the learning of specialty courses and improvement of student’s creative thinking ability.

**Reference book:**

Interior Design Procedures, Zheng Shuyang, China Architectural Industry Press

**Introduction to Design (2 credits)**

**Course code**: b2040068

**Suitable majors**: Product Design, Environmental Design, Visual Communication Design, Digital Media Art

**Instructor**: Zhang Zhan, Tang Jiqun, Zou Taotao and others

**Brief introduction:**

The course is a platform course of the school. The course makes the students clear of the property, range and research objects of art design discipline, helps them understand the classification of design and the basic qualification and requirements of designers, helps them understand the development, current status and the prospect of art design discipline in China and the world and motivates their leaning passions.

**Reference book:**

Introduction to Design, Zhang Fuchang, Hefei Industrial University Press

**Design Composition (A) (3 credits)**

**Course code**: b2040069

**Suitable majors**: Product Design, Environmental Design, Visual Communication Design, Digital Media Art

**Instructor**: Zhang Guiyi, He Liping and Shen Ya

**Brief introduction:**

The course is basic specialty course for the major of art design (digital information communication design, modern product design and modern life space design), a course for the learning and practice of art design, enlightening and cultivation of innovative thoughts. The course mainly researches on the esthetical form construction with the expression principles of formal aesthetics, with the objective to help the students get familiar with the elements and skills of form design, master the rules of form changing, and improve their sensibility and creativity of forms.

**Reference book:**

Form Composition, Zhang Guiyi, East China Normal University Press

**Design Composition (B) (2 credits)**

**Course code**: b2040070

**Suitable majors**: Product Design, Environmental Design, Visual Communication Design, Digital Media Art

**Instructor**: Zhang Guiyi, He Liping and Shen Ya

**Brief introduction:**

The course is basic specialty course, researching on how to compose the 3D form elements into a aesthetical 3D form in accordance with the requirements, which is the basis of 3D form design. Through the course, the students are required to cultivate their sensing ability, imagination ability and creativity of the 3D form, understand and master the technologies and materials and construct a basic platform for the 3D form creation for the specialty design in the future.

**Reference book:**

3D Form Basis, Zhang Guiyi, Jiaotong University Press

**Design Management and Frontier (2 credits)**

**Course code**: b2040071

**Suitable majors**: Environmental Design

**Instructor**: Zhang Ming, Zou Taotao, Yao Zhe

**Brief introduction:**

The course aims to introduce the latest design trends, creative product thoughts, new material application, new research methods and others, so as to explore their design thoughts, broaden their vision and accumulate ideas for the product design courses.

**Reference book:**

Design Management and Frontiers, Self-edited

**Design Sketch (3 credits)**

**Course code**: b2040072

**Suitable majors**: Product Design, Environmental Design, Visual Communication Design, Digital

**Instructor**: Hou Ling, Wang Sihua, Xu Qiaojian and others

**Brief introduction:**

The course is a platform course of the school. Through the course, the students are able to understand and master the basic theory, knowledge and modeling rules of design sketch, master the correct methods of observation, analysis and expression of the objects, improve their modeling ability, expression ability, creativity and aesthetic appreciation ability, laying a good basis for the learning of basic specialty course.

**Reference book:**

Design Sketch, He Feng, China Machine Press

**Design Graphics (3 credits)**

**Course code**: b2040073

**Suitable majors**: Product Design

**Instructor**: Yuan Hefa, Xu Zhihui, Li Chunhui

**Brief introduction:**

The course is a basic specialty course for the major of product design. Through the course, the students are required to draw and read the theory and methods of engineering drawings and have the standard mechanic drawing ability for product design.

**Reference book:**

Product Design Graphics, Tang Lei, People’s Fine Art Publishing House

**Prerequisite**: Computer Assistant Product Design

**Design Marketing (2 credits)**

**Course code**: b2040074

**Suitable majors**: Environmental Design

**Instructor**: Zhang Ming, Yao Zhe, Yu Xiaoli

**Brief introduction:**

The course is a selective specialty course of the school. The students are required to fully consider the basic theory and knowledge of design marketing in the process of design and make the designed projects (works) more acceptable for the market, through the theoretical instruction and project simulation.

**Reference book:**

Interior Design Marketing, Loyde Princeton, Jiangsu Fine Art Press

**Prerequisite**:

**Design Comprehensive Expression (2 credits)**

**Course code**: b2040075

**Suitable majors**: Product Design

**Instructor**: Liu Zhe, Ling Chenye

**Brief introduction:**

The course is a basic specialty course for the major of art design (modern product design). Through the course, the students are required to explore the “strategic” theory of product design expression, and build up expression strategy theory and expression evaluation system. The students learn how to select and apply corresponding strategic mode to strengthen the design thoughts and cultivate their ability to organize and communicate design information with the objective to design the information procedural system in creations.

**Reference book:**

Design Expression and Producing above the Creative Ideas, Wu Chuanhai, Publishing House of Electronics Industry

**Prerequisite**: Product Design C

**Basic Photography (3 credits)**

**Course code**: b2040076

**Suitable majors**: Product Design, Environmental Design, Visual Communication Design, Digital Media Art

**Instructor**: Li Tian and Wang Yiping

**Brief introduction:**

The course is a platform course of the school. Through the course, the students are required to observe the world from the perspective of photography with the methods and modes of photographing. The students are also required to master the related photographing knowledge, skills and technologies so as to improve their observation ability, aesthetical appreciation ability and creativity through learning and practice and better serve for the specialty design.

**Reference book:**

New Instruction of Photography Basis, Dai Fei, Shanghai People’s Fine Art Publishing House

**Photographing and Video Recording (2 credits)**

**Course code**: b2040077

**Suitable majors**: Digital Media Art

**Instructor**: Gao Derong

**Brief introduction:**

The course stresses the use of camera and video camera, the composition of photos, the general photographing and video recording skills, the composition and evaluation standards, which requires the students to master the use of cameras and video cameras, the composition skills and related operational knowledge.

**Reference book:**

Instruction of Photographing and Video Recording Basis, Yu Wu, Posts & Telecom Press

**Interior Environment and Facility (2 credits)**

**Course code**: b2040078

**Suitable majors**: Environmental Design

**Instructor**: Zhang Ming, Sun Xinping

**Brief introduction:**

The course is a specialty course for the major of environmental design. In the process of applied design talents cultivation, the course helps the students understand the knowledge about sound, light and heat in the interior environment. As the designers in the future, the students shall not only consider the art effect, but also consider the engineering technological factors so as to create a scientific and comfortable living environment.

**Reference book:**

Interior Environment and Facility, Wu Shuoxian, Xia Qing, China Architectural Industry Press

**Interior Design (A) (3 credits)**

**Course code**: b2040079

**Suitable majors**: Environmental Design

**Instructor**: Yu Xiaoli, Wang Yuke, Zhang Ming

**Brief introduction:**

The course is a specialty course for the major of environmental design, introducing the theory, standards, principle, general procedures and methods of living space design in the interior environment. Through analysis, explanation and detailed living space design practice, the students are required to understand and feel the contents, meaning and importance of living space design, master the standards, requirements, principles and methods of living space design and cultivate their overall thinking ability.

**Reference book:**

Living Space Design, Liu Shuang, Chen Lei, Tsinghua University Press

**Prerequisite**: Elementary Introduction to Architecture, Architectural Drawing, Ergonomics, Design Expression Techniques

**Interior Design (B) (3 credits)**

**Course code**: b2040080

**Suitable majors**: Environmental Design

**Instructor**: Yu Xiaoli, Zhang Ming

**Brief introduction:**

The course is a specialty course for the major of environmental design, introducing the theory and application of commercial space and office space design. The course helps the students understand and feel the contents and meanings of commercial space and office space design through case analysis and master the general methods and procedures of commercial space and office space design through design practice.

**Reference book:**

Commercial Space Design, Wei Dongfeng, Shanghai People’s Fine Art Publishing House

**Prerequisite**: Elementary Introduction to Architecture, Architectural Drawing, Ergonomics, Design Expression Techniques

**Interior Design (C) (3 credits)**

**Course code**: b2040081

**Suitable majors**: Environmental Design

**Instructor**: Xu Qiaojian and Yao Zhe

**Brief introduction:**

The course is a specialty course for the major of environmental design, introducing the theory and application of office space design. The course helps the students understand and feel the contents and meanings of office space design through case analysis and master the general methods and procedures of office space design through design practice.

**Reference book:**

Modern Office Space Design Basis, Yang Yu, Liaoning Fine Art Press

**Prerequisite**: Elementary Introduction to Architecture, Architectural Drawing, Ergonomics, Design Expression Techniques

**Interior Design (D) (3 credits)**

**Course code**: b2040082

**Suitable majors**: Environmental Design

**Instructor**: Zhang Ming, Yu Xiaoli, Xu Qiaojian

**Brief introduction:**

The course is a specialty course for the major of environmental design, introducing the theory and application of hotel and entertainment space design. The course helps the students understand and feel the contents and meanings of hotel and entertainment space design through case analysis and master the general methods and procedures of hotel and entertainment space design through design practice.

**Reference book:**

Interior Design and Construction Drawing of Hotel Space, Guo Xiaoyang, Sun Jiana, Chemical Industry Press

**Prerequisite**: Elementary Introduction to Architecture, Architectural Drawing, Ergonomics, Design Expression Techniques

**Interior Design Theory (2 credits)**

**Course code**: b2040083

**Suitable majors**: Environmental Design

**Instructor**: Wang Yuke, Yao Zhe

**Brief introduction:**

The course helps the students understand the general theory of architectural interior design and master the theories and methods of different steps of interior design through lecturing of basic theories of interior design.

**Reference book:**

Interior Design Theory, Lai Zengxiang, Lu Zhengwei, China Architectural Industry Press

**Interior Lighting Design (2 credits)**

**Course code**: b2040084

**Suitable majors**: Environmental Design

**Instructor**: Yao Zhe, Sun Xinping

**Brief introduction:**

The course is a basic specialty course for the major of environmental design, a course introducing the features of lights and the controlling of light. The main course objective is to require the students to master the basic theory of interior artificial light and the basic methods of light application through the learning of lighting design so that the students have the elementary interior lighting design ability.

**Reference book:**

Environmental Light Design, Ma Li, Shanghai People’s Fine Art Press

**Prerequisite**: Design Expression Techniques, Ergonomics, Model Production

**Book Binding Design (3 credits)**

**Course code**: b2040085

**Suitable majors**: Visual Communication Design

**Instructor**: Tian Hua, He Liping

**Brief introduction:**

The course is a specialty course for the major of visual communication design, with high requirements on the students’ design, drawing and production ability. Through lecturing and design practice, the students are able to complete the book binding (e-publication) design independently in accordance with the market requirements with the modern design methods. Through the course, the students are required to understand and master the basic connation of book design and the basic theory of book binding design, know the brief history of book design, master the features of book binding design and make modern book binding (e-publication) design independently.

**Reference book:**

Book Design, Bienert, translated by He Li, Liaoning Science and Technology Press

**Prerequisite**: ILLUSTRATOR

**Sketch (2 credits)**

**Course code**: b2040086

**Suitable majors**: Digital Media Art

**Instructor**: Hou Ling

**Brief introduction:**

The course is a basic drawing course, cultivating the student’s mastering of the form and helping them to learn to express the forms of moving objects in a simple way.

**Reference book:**

Dynamic Sketch, Chen Yuxian, People’s Fine Art Publishing House

**Graphic Design (3 credits)**

**Course code**: b2040087

**Suitable majors**: Digital Media Art

**Instructor**: Gao Derong

**Brief introduction:**

The course helps the students fully understand the basic theory of graphic creativity and master the correct graphic creativity methods and expression techniques, laying a basis for the professional design.

**Reference book:**

Instant Graphic Design: Deconstruction, Combination, Collage and Creativity of Graphic Image, Chris Middleton and others, China Youth Press

**Graphic Design (3 credits)**

**Course code**: b2040088

**Suitable majors**: Visual Communication Design

**Instructor**: Xiao Tai, Wang Donghui

**Brief introduction:**

Through the course, the students are required to have a deep and systematic understanding of the graphic functional values and graphic semantic features and improve their independent graphic creativity, expression ability and the ability of semantic communication in graph. The course contents: evolution, development and semantic understanding of the graphs.

Graphic visual theory

Graphic composition and creativity methods

Graphic design common expression techniques

**Reference book:**

Graphic Design Instruction, Yuan Youmin, Zhejiang People’s Fine Art Publishing House

**Mobile Terminal Interactive Design and Production (A) (4 credits)**

**Course code**: b2040089

**Suitable majors**: Digital Media Art

**Instructor**: Yang Guang

**Brief introduction:**

The course is a systematic discipline integrating the related contents or elements abstracted from different related disciplines. UI Design is one of the selective specialty courses, an extension and improvement of the specialty design course, which perfects the professional quality of the students majored in design. The course practice pays attention to the integration and overall application of the basic specialty courses. Through the course, the students explores new interactive technology, get familiar with the procedures and features of UI design, complete the visual expression with the ADOBE PHOTOSHOP, INdesign and other design software, and independently complete the whole process of UI design from the perspective of psychology, ergonomics and design art.

**Reference book:**

The Road to the Successfulness of Mobile Terminal, APP Visual Design Art, Sun Visual Design, Publishing House of Electronics Industry

**Mobile Terminal Interactive Design and Production (B) (4 credits)**

**Course code**: b2040090

**Suitable majors**: Digital Media Art

**Instructor**: Yang Guang

**Brief introduction:**

The course is a systematic discipline integrating the related contents or elements abstracted from different related disciplines. UI Design is one of the selective specialty courses, an extension and improvement of the specialty design course, which perfects the professional quality of the students majored in design. The course practice pays attention to the integration and overall application of the basic specialty courses. Through the course, the students explores new interactive technology, get familiar with the procedures and features of UI design, complete the visual expression with the ADOBE PHOTOSHOP, INdesign and other design software, and independently complete the whole process of UI design from the perspective of psychology, ergonomics and design art.

**Reference book:**

The Spirit of Mobile Interactive Design: Design a Perfect Mobile Users’ Interface, Cameron Banga, Publishing House of Electronics Industry

**Sound Effect Production (2 credits)**

**Course code**: b2040091

**Suitable majors**: Digital Media Art

**Brief introduction:**

The course is an applied course of technological skills for the exploration of students’ computer application ability, with the objective to help the students master the computer audio production technology, understand the features, concept and application scope of computer audio production technology and the features and production process of audios. The students are required to do regular audio production and general audio processing, and make computer sound effect production with the application of different knowledge finally.

**Reference book:**

Instruction of Animation Sound Effect Production, Chen Junhai, China Light Industry Press

**Printing Technology (2 credits)**

**Course code**: b2040092

**Suitable majors**: Visual Communication Design

**Instructor**: Luo Bin

**Brief introduction:**

Through the lecturing and design practice, the course solves the problems of transitioning from design to printing technological process in the process of print design and production focusing on the pre-printing technologies. The students are required to understand the relations between art, design and technology from technological practice so as to integrate the creative ideas and technologies. The course requirements are as follows: 1. Understand the terms and basic elements of printing; 2. Understand the different stages of pre-printing technology; 3. Understand the working procedures of pre-printing technologies including webpage setting, graphic and words production, film output and others; 4. Understand the procedures of makeup, proofing and color correction; 5. Understand the process of printing machine operation; 6. Understand the basic procedures of after-printing technologies.

**Reference book:**

Printing Bible, Zhou Yicheng, Zhejiang People’s Fine Art Publishing House

**Movie Advertisement Design Production (4 credits)**

**Course code**: b2040093

**Suitable majors**: Digital Media Art

**Instructor**: Yan Xing

**Brief introduction:**

The course cultivates the students’ ability to complete the advertisement creative ideas with different creative methods and the ability to produce the movie advertisements with detailed production skills through the training of creativity and production of movie advertisement. The students are also required to master the related knowledge of investigation, creativity and production of movie advertisement.

**Reference book:**

Movie Advertisement Planning and Production, Li You, China Youth Press

**Landscape Design Theory (2 credits)**

**Course code**: b2040094

**Suitable majors**: Environmental Design

**Instructor**: Wang Yuke, Fan Tianhua

**Brief introduction:**

The course is a specialty course for the major of environmental art design. The course analyzes the relations between historical development and special natural or cultural elements of landscape design, introduces the basic thoughts and methods of garden design with the contemporary excellent design works analysis.

**Reference book:**

Landscape Design, Wang Xiaojun, Jiangsu Science and Technology Press

**Original Painting Design (2 credits)**

**Course code**: b2040095

**Suitable majors**: Digital Media Art

**Instructor**: Yan Xing

**Brief introduction:**

The course cultivates the basic theory of original painting, the drawing and showing skills of original painting creation, improves their direction and communication ability, analysis and mastering ability of shoots and the problem judgment and solution ability in the original painting creation.

**Reference book:**

Instruction of International Classic Anime Design: Design of Original Painting, Li Jie, China Youth Press

**Display Design (B) (3 credits)**

**Course code**: b2040096

**Suitable majors**: Environmental Design

**Instructor**: Zou Taotao and Sun Xinping

**Brief introduction:**

Display design is a design activity based on the information collection, planning, communication and feedback acceptation, which integrates the knowledge of architectural space design, interior design and graphic design together. The disciplinary objective is to help the students master the objectives and methods of display design, cultivates their ability to communicate the theme to audiences with best effects under certain conditions and explores their multiple design ability.

**Reference book:**

Display Design, Tan Xin, Shanghai People’s Fine Art Publishing House

**Theme Design (A) (3 credits)**

**Course code**: b2040097

**Suitable majors**: Product Design

**Instructor**: Shen Jie, Zhang Xin

**Brief introduction:**

The course is a specialty course for the major of product design. It is a practical coure, which selects the design contest or enterprise sponsorship projects as the course subject. The course instructs the students to do continuous design practices focusing on the special design themes with the instruction of mentors and experts.

**Reference book:**

Product Improvement Design, Zhang Zhan, Wang Hong, Shanghai People’s Fine Art Publishing House

**Prerequisite**: Product Design C

**Theme Design (A) (3 credits)**

**Course code**: b2040098

**Suitable majors**: Visual Communication Design, Digital Media Art

**Instructor**: Hou Ling, Qian Yuanping, Gao Derong and others

**Brief introduction:**

The course is a theme instructional step for the talents cultivation in college. The course cultivate the students’ ability to analyze and solve practical design problems independently with the application of learned theory, knowledge and skills through the theme design tasks.

**Reference book:**

Self-edited Textbook

**Theme Design (B) (3 credits)**

**Course code**: b2040099

**Suitable majors**: Product Design

**Instructor**: Ling Chenye, Liu Zhe

**Brief introduction:**

The course is a specialty course for the major of product design. It is a practical course, which selects the design contest or enterprise sponsorship projects as the course subject. The course instructs the students to do continuous design practices focusing on the special design themes with the instruction of mentors and experts.

**Reference book:**

Product Improvement Design, Zhang Zhan, Wang Hong, Shanghai People’s Fine Art Publishing House

**Prerequisite**: Product Design C

**Theme Design (B) (3 credits)**

**Course code**: b20400100

**Suitable majors**: Visual Communication Design, Digital Media Art

**Instructor**: Hou Ling, Qian Yuanping, Gao Derong and others

**Brief introduction:**

The course is a theme instructional step for the talents cultivation in college. The course cultivates the students’ ability to analyze and solve practical design problems independently with the application of learned theory, knowledge and skills and scientific design methods, laying a basis for the following graduation design.

**Reference book:**

Self-edited Textbook

**Decorative Graphs (A) (3 credits)  
Course code**: b2040101

**Suitable majors**: Visual Communication Design

**Instructor**: Wang Donghui

**Brief introduction:**

The course is a basic specialty course for the major of visual communication design (digital information communication design, modern product design and modern living space design), mainly introducing the decorative modeling problems from the perspective of imaginal thinking and the rules of decorative art creation form aesthetics from practice. The course objective is to help the students understand and master the theory and drawing skills of decoration and the features and applications of materials. The basic course requirements are to enlighten the thinking methods with the rules of form aesthetics and achieve the changes and unity with form aesthetics from composition changes, color processing, plane composition, space layout and other methods. The course contents include the expression techniques and rules of decorative picture, the key points and scale of exaggerated deformation and the production techniques of some decorative pictures, the decorative deformation and colors of flowers, animals, scenery and figures.

**Reference book:**

Creativity and Expression of Decorative Pictures, Liu Shiyan, China Textile Press

**Decorative Graphs (B) (3 credits)  
Course code**: b2040102

**Suitable majors**: Visual Communication Design

**Instructor**: Wang Donghui

**Brief introduction:**

The course is a basic specialty course for the major of visual communication design (digital information communication design, modern product design and modern living space design), mainly introducing the decorative modeling problems from the perspective of imaginal thinking and the rules of decorative art creation form aesthetics from practice. The course objective is to help the students understand and master the theory and drawing skills of decoration and the features and applications of materials. The basic course requirements are to enlighten the thinking methods with the rules of form aesthetics and achieve the changes and unity with form aesthetics from composition changes, color processing, plane composition, space layout and other methods. The course contents include the expression techniques and rules of decorative picture, the key points and scale of exaggerated deformation and the production techniques of some decorative pictures, the composition and space layout of decorative pictures.

**Reference book:**

Creativity and Expression of Decorative Pictures, Liu Shiyan, China Textile Press

**Font Design (2 credits)**

**Course code**: b2040103

**Suitable majors**: Visual Communication Design

**Instructor**: Gao Derong, Wang Donghui, Hou Ling

**Brief introduction:**

The course is a basic specialty course for the major of visual communication design, for the learning and mastering of compositional theory’s application in font design and the different structural rules and changes of fonts. The font design is to artisticalize the font with art design methods. As the basic specialty course, the font design course is same important as the course of graphic design in the “layout” step of the cultivation plan.

Through lecturing and design practice, the students are required to understand the development of characters, master the structural features and changing rules of Chinese and Latin characters, understand the close relations between the contents and design of characters, do creativity composition and layout exercises taking the characters as the visual elements, do original design with different kinds of materials, tools and methods with vivid characteristics.

**Reference book:**

Theory of Font Design, Yidaqiandai, Citic Press

**ILLUSTRATOR (2 credits)**

**Course code**: b2040104

**Suitable majors**: Industrial Design

**Instructor**: Li Chunhui, Wang Yiping

**Brief introduction:**

The course discusses on the graphic generation technology from the plane graphic design to graphic processing with the computer hardware and graphic software based on the computer graphics. The course requires the students to master the processing ability of expression techniques of object’s shape, color and lights, laying a solid basis for the computer assistant design in the industrial design field and strengthening the training of practical skills.

**Reference book:**

Adobe Illustrator CS5 Classic Instruction (Chinese Version), (US) Adobe Company, Posts & Telecom Press

**PHOTOSHOP (2 credits)**

**Course code**: b2040105

The course discusses on the graphic generation technology from the plane graphic design to graphic processing with the computer hardware and graphic software based on the computer graphics. The course requires the students to master the processing ability of expression techniques of object’s shape, color and lights, laying a solid basis for the computer assistant design in the industrial design field and strengthening the training of practical skills.

**Reference book:**

Coredraw + Photoshop Product Modeling Design, Ding Wei, Beijing University of Science and Engineering Press

**RHINO (4 credits)**

**Course code**: b2040106

**Suitable majors**: Industrial Design

**Instructor**: Yi Li

**Brief introduction:**

The course is a platform course for the major of industrial design. Through the course, the students are required to skillfully master the use of Rhinocerors and Keysho software. Focusing on the instruction of computer assistant industrial design technology of Rhinocerors software, the students are required to skillfully master the NURBS curve modeling skills to meet the requirements of industrial modeling and computer design. Meanwhile, the course introduces the use of rendering software Keyshot to meet the requirements of 3D model post output, helping the students clearly understand the knowledge of computer assistant design, assistant engineering and computer expression and meet the objectives of industrial modeling design and product rendering expression with accurate methods and measures.

**Reference book:**

Rhino 5.0 & Keyshot Product Design Examples, Zhang Yaxian, Liu Yong, Posts & Telecom Press

**Packaging Design (3 credits)**

**Course code**: b2040107

**Suitable majors**: Industrial Design

**Instructor**: Luo Bin

**Brief introduction:**

The course is a random selective course for the major of industrial design. The packaging design introduces the materials and structures of packages (box). Through lecturing and design practice, the students are able to understand the materials and structures of packages and correctly master the knowledge and structural forming of box packaging, and design the packages (box structure) with new style, reasonable structure and modern big industrial production technology in accordance with the needs of target consumers.

**Reference book:**

Packaging Design, Yu Jing, Liaoning Fine Art Press

**Layout Design (2.5 credits)**

**Course code**: b2040108

**Suitable majors**: Industrial Design

**Instructor**: Dai Fang

**Brief introduction:**

The course is a basic specialty course for the major of industrial design. Through the course, the students are able to understand the combination rules of design elements and compositional elements of form, color, graphs, words, visual procedures and others, use the accurate fonts and have the ability to process the graphs, the ability to adjust and arrange the picture with basic aesthetic appreciation views, so as to design report manuals, exhibition boards and others with beautiful outlooking and accurate visual procedures.

**Reference book:**

Principles of Layout Design, Wang Shaoqiang, Guangxi Fine Art Press

**Material and Modeling Technology (2 credits)**

**Course code**: b2040109

**Suitable majors**: Industrial Design

**Instructor**: Li Chunhui, Wang Yiping

**Brief introduction:**

The course is a specialty course for the major of industrial design. The students are required to master the features of materials like metal, plastic, pottery, glass and others in product design, understand the range of technologies applied to the materials in production and the features of different production technologies, master the relations between the material and technologies in component manufacturing and their influences on models and functions.

**Reference book:**

Design Materials and Processing Technology, Zhang Xi, Chemical Industry Press

**Product Design I (Information Product) (4 credits)**

**Course code**: b2040110

**Suitable majors**: Industrial Design

**Instructor**: Yi Li

**Brief introduction:**

The course is a core specialty course for the major of industrial design. Through the course, the students are required to understand and master the creative design thoughts, methods and procedures, receive design trainings of innovative product development with the learned theory and knowledge, master the innovative design elements, have the new product innovative development ability, and understand the related theories and methods of product innovative design so as to meet the development requirements on product innovation needs.

**Reference book:**

Product Innovative Design Theory and Methods, Li Yan, Science Press

**Product Design II (Tools and Facility) (4 credits)**

**Course code**: b2040111

**Suitable majors**: Industrial Design

**Instructor**: Wang Hong

**Brief introduction:**

This is a core specialty course for the major of industrial design. The course based on products, with motives of creative thoughts, measures of valuable projects and basis of the consumer’s desires, researches on the product creativity. Through the course, the students are able to systematically understand the different elements and conditions of tools and facilities, and master the whole systematic product design methods and strategies of systematic analysis methods, need research, competition research, product realization and others.

**Reference book:**

Product Systematic Design, Wu Xiang, China Light Industry Press

**Product Design III (Home Appliances) (4 credits)**

**Course code**: b2040112

**Suitable majors**: Industrial Design

**Instructor**: Yuan Hefa

**Brief introduction:**

The course is one of the core specialty courses for the major of industrial design. The course based on products, with motives of creative thoughts, measures of valuable projects and basis of the consumer’s desires, researches on the product improvement design. Through the course, the students are able to systematically understand the different elements and conditions of tools and facilities, and master the improved product design methods and procedures.

**Reference book:**

Product Improvement Design, Zhang Zhan, Wang Hong, Shanghai Poster Press

**Product Form Design (2.5 credits)**

**Course code**: b2040113

**Suitable majors**: Industrial Design

**Instructor**: Dai Fang

**Brief introduction:**

The course is a specialty course for the major of industrial design. Through the course, the students are required to understand the concept, layers and values of product form semantics, master the features, thoughts, methods and typical features of semantics and know the general procedures of product form semantic design application and use it to instruct the design practice of product semantics.

**Reference book:**

Product Form Semantics and Expression, Cao Jianzhong, Hefei Industrial University Press

**Basic Mechanical Engineering (3 credits)**

**Course code**: b2040114

**Suitable majors**: Industrial Design

**Instructor**: Li Chunhui, Yuan Hefa

**Brief introduction:**

The course is a basic specialty course for the major of industrial design, which helps the students master the basic theory and knowledge of common organization and general components, have the elementary ability of analysis and design in this field and acquire necessary basic skills. It is an important compulsory basic specialty technical course in accordance with the instructional plan. The course pays attention to the instruction of basic knowledge, theory and methods and the basic training of design conception and skills for the practical ability cultivation.

**Reference book:**

Mechanical Engineering Basis, He Bohai, China Machine Press

**Computer Assistant Product Design (PRO/E and Product Analysis Modeling) (4 credits)**

**Course code**: b2040115

**Suitable majors**: Industrial Design

**Instructor**: Yuan Hefa

**Brief introduction:**

The course is a basic specialty course for the major of industrial design. The course requires the students to understand and master the function and application of advanced computer assistant design and manufacturing software in industrial design, understand the basic knowledge of CAD, skillfully master the basic methods, component assembly and engineering drawing expression and some basic knowledge of models of 3D entity and curve design with PRO/ENGINEER software.

**Reference book:**

Pro/E Wildfire Product Modeling Design, Yuan Hefa, Beijing University of Science and Engineering Press

**Furniture Design (3 credits)**

**Course code**: b2040116

**Suitable majors**: Industrial Design

**Instructor**: Dai Fang

**Brief introduction:**

The course is a specialty course. Through the course, the students are required to understand and master the basic theoretical knowledge of furniture design, the ergonomics, modeling design, material and structure, procedures and methods of furniture design, so as to strengthen their understanding of the design elements and form aesthetic principles of furniture form composition and create more personal, characteristic and modern furniture design.

**Reference book:**

Furniture Design, Qian Fangbin, China Water Power Press

**Interactive Design (2 credits)**

**Course code**: b2040117

**Suitable majors**: Industrial Design

**Instructor**: Yi Li

**Brief introduction:**

The course is a specialty course for the major of industrial design, which is one of the multiple design ability course for the industrial design. Through the course, the students are able to master the principles, theories, procedural tools and methods of interactive design, understand the relations between interactive design and product design, the UCD consumer needs research guided by the interactive design, interactive original design, GUI design, the interactive and user experience design in products.

**Reference book:**

Interactive Design, Huang Qi, Bi Zhiwei, Zhejiang University Press

**Ergonomics (2 credits)**

**Course code**: b2040118

**Suitable majors**: Industrial Design  
**Instructor**: Yi Li, Yuan Hefa

**Brief introduction:**

The course is a core specialty course for the major of industrial design. Through the course, the students are able to have a clear understanding of human beings and machines. With the researching methods and measures of anthropometry, physiology, psychology and biomechanics and engineering, the course researches on the problems of human body’s structure, function, psychology and mechanics, shows the relations between human beings, machines and environments, so as to determine the optimization of overall performances of the “human beings—machine—environment” system. The course pays attention ot the design of human being’s work style, the ergonomic design of product and environment and provides ergonomic thoughts and data for design, implement the design ideas of human orientation. Through the study of basic theories and design exercises, the students are required to master certain human-machine design ability and lay a basis for the product and environmental design.

**Reference book:**

Ergonomics, Liu Gangtian, Peking University Press

**Design Method and Theory (2 credits)**

**Course code**: b2040119

**Suitable majors**: Industrial Design

**Instructor**: Wang Hong, Yi Li

**Brief introduction:**

The course is a specialty course for the major of industrial design. Through the course, the students are able to have a basic understanding of the industrial design, understand the design procedures and basic knowledge, the basic principles and theories of industrial design and master the methods and theories of product design through design examples.

**Reference book:**

Industrial Design Procedure and Method, Yang Xiangdong, Higher Education Press

**Design Composition (A) (3 credits)**

**Course code**: b2040120

**Suitable majors**: Industrial Design

**Instructor**: Dai Fang

**Brief introduction:**

The course is a basic specialty course for the major of industrial design. Through the course, the students are able to master the meaning, elements, basic rules and reality meaning of plane composition, have the image thinking ability and design creative ability of reflecting the form aesthetical principles with abstract forms, master the matching skills, combination rules, psychological influences and social meanings of color aesthetics so as to improve their design ability, aesthetic appreciation level, innovative ideas and practical ability and lay a solid basis for the learning of specialty design in the future.

**Reference book:**

Color Composition, Cheng Yuejie, Li Quan’en, Zhang Chaojun, China Youth Press

**Design Composition (B) (2 credits)**

**Course code**: b2040121

**Suitable majors**: Industrial Design

**Instructor**: Dai Fang

**Brief introduction:**

The course is a basic specialty course for the major of industrial design. Through the course, the students are able to master the meaning, elements, basic rules and reality meaning of form, composition and especially the 3D composition, have the image thinking ability and design creative ability of reflecting the form aesthetical principles with abstract forms, master the composition methods of 3D forms and improve their understanding of the form aesthetic principles in 3D design, so as to improve their design ability, aesthetic appreciation level, innovative ideas and practical ability and lay a solid basis for the learning of specialty design in the future.

**Reference book:**

3D Composition, Chen Zuzhan, Tsinghua University Press, Beijing Jiaotong University Press

**Design Management (2 credits)**

**Course code**: b2040122

**Suitable majors**: Industrial Design

**Instructor**: Ling Chenye

**Brief introduction:**

The course introduces the ideas, development and important functions of design management, the objective system of design strategy, design strategy making and implementation, the elements which must be considered for the basic tasks, procedure and implementation of design projects, the bidding management of technical economic analysis and design projects, the basic knowledge of design HR management, design collaboration management, design intellectual property management.

**Reference book:**

Design Management Basis, Chen Hanqing, Higher Education Press

**Design Thoughts and Expression (3 credits)**

**Course code**: b2040123

**Suitable majors**: Industrial Design

**Instructor**: Wang Hong

**Brief introduction:**

The course is a basic specialty course for the major of industrial design. Through the course, the students are able to understand the methods of creative thoughts, observe problems from different views and with different methods, and propose different solutions. The students are also required to learn to express those solutions in an accurate, clear, simple and rapid way, and strengthen their understanding of the product design creativity and rapid expression modes, laying a good basis for the following product design courses.

**Reference book:**

Product Design Hand Printing—Sensing x Conception x Expression, (US) Kevin Henry, Posts & Telecom Press

**Design Sketch (3 credits)**

**Course code**: b2040124

**Suitable majors**: Industrial Design

**Instructor**: Wang Hong, Wang Sihua

**Brief introduction:**

The course is a basic specialty course for the major of industrial design. The course focuses on the drawing practice with the instruction of related theoretical knowledge, which tries to cultivate the students’ ability of observation, understanding, thinking, recording and expression through learning. The students are also required to progressively construct their corresponding aesthetic appreciation sensibility, master the basic drawing methods and cultivate their image imagination ability, laying a good basis for the learning of following courses.

**Reference book:**

New US Basic Sketch Textbook, Cotis, translated by Peng Yan, Shanghai People’s Fine Art Publishing House

**Design Graphics (4 credits)  
Course code**: b2040125

**Suitable majors**: Industrial Design

**Instructor**: Yuan Hefa, Li Chunhui

**Brief introduction:**

The course is a basic specialty course for the major of industrial design, which integrates the graphic methods of mechanic drawing, architectural drawings and other instructional contents, to cultivate the students’ drawing and reading ability of different engineering drawings. It is the expression basis of design and an important measure for the communication between designers and producers. Meanwhile, the students are required to cultivate their space imagination ability, and systematically master the basic skills, methods and standards of technical drawings, laying a good basis for the learning of following specialty courses.

**Reference book:**

Design Graphics, Yuan Hefa, China Water Power Press

**Design Psychology (2 credits)**

**Course code**: b2040126

**Suitable majors**: Industrial Design

**Brief introduction:**

The course is a specialty course for the major of industrial design. The design psychology belongs to the field of psychology, which uses the theory, methods and research achievements of applied psychology to solve the design research problems related to the behaviors and sensibility related to human beings in the field of design art. Through the course, the students are required to understand the basic theoretical system of design psychology, learn to propose and solve design problems creatively from the perspective of design psychology and research on the influences of product colors, models and surface textures on design psychology based on the course learning.

**Reference book:**

Design Psychology, Zhao Jianghong, Beijing University of Science and Engineering Press

**Basic Photography (3 credits)**

**Course code**: b2040127

**Suitable majors**: Industrial Design

**Instructor**: Wang Yiping

**Brief introduction:**

Photography is a basic specialty course for the major of industrial design, which joins the design as a designing measure.

Through the course, the students are required to use this special tool to create works and master related professional photographing knowledge, requirements and skills after further learning and practice, so as to better serve for the specialty learning.

**Reference book:**

Basic College Photography, Xie Shen’en, Wang Yiping, Beijing University of Science and Engineering Press

**Marketing (2 credits)**

**Course code**: b2040128

**Suitable majors**: Industrial Design

**Instructor**: Wang Yiping

**Brief introduction:**

Marketing is an important basic specialty course for the major of design and an irreplaceable applied science for the development of market economy in China.

Through the course, the students are required to master the knowledge structure of marketing, which is called 6P combination, the product, channel, price, promotion, public relation and political laws strategy, especially the application of combined marketing knowledge in design, so as to forecast the potential needs of the market and reduce the blindness of design and production.

**Reference book:**

Modern Marketing, Su Yaming, China Business Press, Capital University of Economy and Trade Press

**Display Design (3 credits)**

**Course code**: b2040129

**Suitable majors**: Industrial Design

**Instructor**: Sun Xinping

**Brief introduction:**

The course is a random selective specialty course for the major of industrial design. Display design is a design activity based on the information collection, planning, communication and feedback acceptation, which integrates the knowledge of architectural space design, interior design and graphic design together. The disciplinary objective is to help the students master the objectives and methods of display design, cultivates their ability to communicate the theme to audiences with best effects under certain conditions and explores their multiple design ability.

**Reference book:**

Display Design, Shi Xiping, Ma Sai, Dong Yu, Tsinghua University Press

**Specialty Comprehensive Training (including Graduation Design Inspection) (2 credits)**

**Course code**: b20400130

**Suitable majors**: Industrial Design

**Instructor**: Wang Hong

**Brief introduction:**

This course is a specialty course for the major of industrial design. Through the course, with the research objective of expression strategy, the students learn to select and apply corresponding strategy to deepen their design thoughts and improve their ability to organize and communicate design information.

**Reference book:**

Comprehensive Expression of Product Design, Tuo Pengying, Wei Xiao, Tang Lei, People’s Fine Art Publishing House

**Font and Graphic Design (2.5 credits)**

**Course code**: b2040131

**Suitable majors**: Industrial Design

**Instructor**: Dai Fang

**Brief introduction:**

The course is a specialty course for the major of industrial design, which introduces the application of composition theory in font and logo design and the different structural rules or changes of fonts and logos.

Course objective: the course lays a basis for the better application of characters in the professional design in the future; the course requires the students to understand the related knowledge of logo design, master the methods of logo design, and cultivate their ability to express meaningful logo design with simple logo image.

**Reference book:**

Logo Design, Qian Yuanping, Shanghai Poster Press

**Introduction to Design (2 credits)**

**Course code**: b2040132

**Suitable majors**: Industrial Design

**Instructor**: Yi Li

**Brief introduction:**

The course is a platform course for the major of industrial design. Through the course, the students are able to get familiar with the basic concept, research field and basic principles of industrial design, understand the development history, the function and status of industrial design in enterprise, get familiar with the procedures and methods of product design, and understand the relations between industrial design and other disciplines.

**Reference book:**

Introduction to Industrial Design, Cheng Nengling, China Machines Press

**Graduation Internship and Graduation Design (Thesis) for the Major of Environmental Design (12 credits)**

**Course code**: b4040002

**Suitable majors**: Environmental Design

**Instructor**: Zhang Ming, Zou Taotao, Fan Tianhua, Shen Ya, Yao Zhe, Yu Xiaoli

**Brief introduction:**

The practicability and comprehensiveness of graduation design is irreplaceable by other instructional steps. The course objective is to help the students receive necessary comprehensive trainings before employment through actual or simulating design project cases under the instruction of teachers, so as to improve the students’ ability of literature searching, investigation, practical operation, collaboration and expression.

**Graduation Internship and Graduation Design (Thesis) for the Major of Visual Communication Design (12 credits)**

**Course code**: b4040003

**Suitable majors**: Visual Communication Design

**Instructor**: Tian Hua, He Liping, Luo Bin, Qian Yuanping, Gao Derong, Xiao Tai, Hou Ling

**Brief introduction:**

The course is the final comprehensive instructional practical step for the talent cultivation in college, an important step to cultivate the students’ application ability of learned basic theory, knowledge and skills and their ability to independently analyze and solve practical problems, a test of the overall quality of the students. Through selecting the actual or simulating design project examples, the students receive the necessary comprehensive trainings before employment and improve their ability of literature searching, investigation, practical operation, collaboration and expression. The course requirements: 1. Apply the learned theoretical knowledge and professional skills through graduation design and consolidation of knowledge of different courses; 2. Cultivate the students’ ability to independently analyze and solve practical problems; 3. Get familiar with the procedures and methods of design under the instruction of teachers and independently complete the market investigation and graduation design and join the oral defense of graduation.

**Material Modeling (C) (2 credits)**

**Course code**: b4040005

**Suitable majors**: Industrial Design

**Instructor**: Li Chunhui

**Brief introduction:**

The course is a practical course for the major of industrial design. The material modeling (B)—pottery is a course for the material language, art form and multi-dimensional modeling. The course integrates art and technology, art creativity and practice, the knowledge structure of which covers decorative basis, 3D modeling, production technologies and others.

The course requires the students to master the language of 3D modeling and make creative 3D works with ceramic deformable materials and processing technologies and understand the brief information of traditional ceramic art and development of modern ceramic art.

**Reference book:**

Modern Ceramic Art Design, Chen Xiaodan, Chen Guanghui, Guangxi Fine Art Press

**Graduation Internship and Graduation Design (Thesis) for the Major of Industrial Design (12 credits)**

**Course code**: b40400006

**Suitable majors**: Industrial Design

**Instructor**: Yuan Hefa, Wang Hong, Wang Yiping and others

**Brief introduction:**

The course requires the students to apply the learned knowledge and theory in four years to process the relations between product modeling and colors, form and outlooking, structure and function, structure and materials, shape and technology, product and human beings, product, environment and market and reflect those relations into the product design.

**Design Sketch (2 credits)**

**Course code**: b40400007

**Suitable majors**: Industrial Design

**Instructor**: Wang Hong

**Brief introduction:**

The course is a basic core specialty course for the major of industrial design. Through the course, the students are required to master the basic expression methods and skills of design sketch, improve their understanding, expression and controlling ability of the form through a large amount of design sketch trainings, so as to rapidly and correctly catch the shape, laying a good design expression basis for the learning of product design.

**Reference book:**

Product Design Sketch and Marker Pen Techniques, Cao Xuehui, Yuan Hefa, Qing Ji’an, China Textile Press

**Model Production (2 credits)**

**Course code**: b4040008

**Suitable majors**: Industrial Design

**Instructor**: Wang Hong, Li Chunhui

**Brief introduction:**

The course is a core specialty course for the major of industrial design. Through the course, the students are required to understand the design thoughts and intentions in accordance with the design drawings, select and process the model materials, master the skills of model scaling computation and model production, and understand the technological process of different model production.

**Reference book:**

Model Production, Zheng Jianqi, Tang Jun, Higher Education Press