



**HUNAN UNIVERSITY**

# **Course Descriptions**

**---- For Undergraduate Courses**

**As of July 21, 2011**

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## **01016 Structural Mechanics (A1)**

**Credits:** 4

**Credit hours:** 64

**Categories:** Elective

**Prerequisites:** None

**Description:**

Structural Mechanics (A1) is an elective for students of civil engineering. The purposes of this course are to enable students to master calculation principles and methods of bar structures, understand force performance of various structures, lay a solid foundation for structure design and scientific research in their relevant major courses, gradually develop students' calculation skills, innovative capacity in structures and calculation methods, and improve their abilities to analyze and solve practical engineering problems with the knowledge learned in structural mechanics. The contents of this course cover geometric composition analyses of two-dimensional system, principles of virtual work, displacement calculation of structures, force methods, displacement methods, influence lines, and two-dimensional bar finite element methods.

## **01019 Fluid Mechanics (A)**

**Credits:** 3

**Credit hours:** 52

**Categories:** Compulsory

**Prerequisites:** Advanced Mathematics, Mathematics Physics Equation, Field Theory, Theoretical Mechanics, Mechanics of Materials

**Description:**

Fluid Mechanics (A) is a compulsory course for students of Water Supply and Drainage Engineering. The purposes of this course are to enable students to

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understand basic concepts and principles in fluid mechanics, and develop their abilities to simplify sophisticated problems, present and solve mathematic models of related engineering problems. The contents of this course are the basic equations of fluid mechanics, incompressible inviscid flow, motions of vortex, gravity waves, dimensional analyses, incompressible viscid flow, turbulence, and foundations of aerodynamics.

## **01020 Fluid Mechanics (B)**

**Credits:** 3

**Credit hours:** 52

**Categories:** Compulsory

**Prerequisites:** None

### **Description:**

Fluid Mechanics (B) is a compulsory course for students of building environment and equipment engineering. The purposes of this course are to enable students to master major principles of balance and movement, calculating methods of energy loss in fluid flow, develop skills in calculation, abstract thinking and experiments, and develop their abilities to solve real-life problems by using basic theories. The contents of this course cover basic physics properties of fluids, calculation of static pressure of fluids, continuous equation of fluids, Bernoulli equation and momentum equation of actual total amount of fluids, and calculation of pipeline loss.

## **01021 Fluid Mechanics (C)**

**Credits:** 2

**Credit hours:** 34

**Categories:** Elective

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**Prerequisites:** Advanced Mathematics, University Physics, Theoretical Mechanics, Mechanics of Materials

**Description:**

Fluid Mechanics (C) is an elective course for students of water supply and drainage engineering. The purposes of this course are to enable students to master basic theories of hydraulics, calculation methods of water power and basic operation skills of hydraulic experiments, and thus lay a solid foundation for further studies. The main contents of the course cover static hydraulics, dynamical foundation, short tube hydraulic calculation, uniform flow in open channels, seepage, similarity principles and dimensional analyses, hydrostatic pressure, Newton's inner friction law, classification of water flow, streamline and trace, water-carrying section, and flow quantity.

## **01032 Introduction to Civil Engineering**

**Credits:** 1

**Credit hours:** 16

**Categories:** Elective

**Prerequisites:** None

**Description:**

Introduction to Civil Engineering is an elective course for students of civil engineering. It aims to enable students to master basic knowledge of civil engineering. The contents of this course are classifications of civil engineering, materials of civil engineering, geological survey in civil engineering, building construction, building structures, construction project management and computer technologies in civil engineering.

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## **01033 Elasticity Mechanics**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Theoretical Mechanics, Mechanics of Materials, Structural Mechanics

**Follow-ups:** Plastoelasticity

**Description:**

Elasticity Mechanics is an elective course for majors of construction engineering, road engineering, bridge engineering and rock engineering. It aims to enable students to master basic principles and methods of elastic mechanics. The contents of this course are concept of stress, strain, relationship between stress and strain, plane problem, Cartesian answers and Polar solutions to plane problems, basic theories of space, and basic knowledge of thin plate bending.

## **01036 Project Structured Programming**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Elective

**Prerequisites:** None

**Description:**

Project Structure Programming is an elective course for majors of civil engineering. It aims to enable students to master basic principles and methods of project structure program design. The contents of this course are matrix displacement methods, Flat static frame analysis programs, improvement of flat static frame, through beam, truss, structural static analyses of cross coupling, finite element methods, Three node triangular element, higher unit of lane problems, isoparametric, structural dynamics analyses, eigenvector computation of matrix eigenvalue and

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program debugging.

## **01038 Engineering Cost**

**Credits:** 2

**Credit hours:** 52

**Categories:** Compulsory

**Prerequisites:** Housing Architecture, Engineering Structure, Building Materials

**Description:**

Engineering Cost is a compulsory course for students of Engineering Management. The purposes of this course are to enable students to understand basic knowledge of Engineering Estimation, master basic theories and methods of engineering estimation, and develop their abilities to estimate projects. This course covers basic knowledge of engineering estimation, cost structure, engineering metrology, investment estimate, preliminary estimate, bid and tender offer, engineering settlement and final accounts.

## **01047 Building Equipment Engineering**

**Credits:** 3

**Credit hours:** 48

**Categories:** Elective

**Prerequisites:** None

**Description:**

Building Equipment Engineering is an elective course for majors of civil engineering. It aims to enable students to master basic theories and rules of construction facility engineering. The contents of this course are hydromechanics, water supply systems, Fire Water Supply System, drainage systems, water engineering, heat transfer theories, heating systems, ventilation, fundamental knowledge of electricity, power supply and distribution systems, electric lighting, light current

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system and lightning protection.

## **01049 Road Engineering (A)**

**Credits:** 4

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** Surveying, Building Materials, Engineering Mathematics, Structural Mechanics

### **Description:**

Road Engineering (A) is a compulsory course for students of bridge engineering. The purposes of this course are to enable students to master functions of roads and characteristics of road transport, road design levels and technical norms, classification and technical norms of urban roads, have basic knowledge and preliminary capacity to design, construct, and manage road projects, integrate theories with practices and develop students' abilities to deal with real-life urban problems by using knowledge learned. The contents of this course cover basic concepts, of road engineering, design and construction of road routes, subgrade, pavement, bridges and tunnels, road design, basic conception and design ideas of road management.

## **01051 Subgrade and Pavement Engineering**

**Credits:** 3.5

**Credit hours:** 56

**Categories:** Compulsory

**Prerequisites:** Soil Mechanics, Civil Engineering Materials

### **Description:**

Subgrade and Pavement Engineering is a compulsory course for students of road engineering. The purposes of this course are to enable students to master basic

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concepts, theories and methods of subgrade and pavement engineering, develop their abilities to solve problems related to subgrade and pavement engineering, qualitative analyses of subgrade stability, design methods of subgrade and pavement drainage, bitumen pavement and concrete pavement, and improve their abilities to analyze and solve general and complicated problems of subgrade and pavement engineering under geological, hydrological and transportation conditions. The contents of this course cover vehicle load, environmental factors, and material qualities, reinforcing design and construction of subgrade and its maintenance, drainage design of subgrade and pavement, and design, constructions, and maintenance management of pavement structures.

## **01052 Bridge Engineering (A)**

**Credits:** 4

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** Structural Mechanics, Principles of Structural Design

### **Description:**

Bridge Engineering (A) is a compulsory course for students of road engineering. The purposes of this course are to enable students to master design and construction mechanisms, familiarize knowledge related to bridge constructions, develop their capacity to design and solve problems related to long-span and complicated bridges, and thus lay a solid foundation for further courses such as long-span bridges, maintenance, repair and reinforcement of used bridges, and design of slope and slant bridges. The contents of this course cover basic concepts, principles and calculation methods of bridge engineering, calculation principles and methods of common large- and medium-sized concrete bridges in China, bridge constructions, and bridge design and construction mechanisms



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## **01058 Hydrology**

**Credits:** 1

**Credits hours:** 16

**Categories:** Elective

**Prerequisites:** None

**Description:**

Hydrology is an elective course for the students of civil engineering. It aims to enable students to understand elements of water circle and sorts of hydraulic phenomena. The contents of this course are fundamental knowledge of hydrology, basic theories and methods of calculation of water circles and water balance, analyses of land surface water, ocean and underground water circle processes and influences of human activities on water environment.

## **01059 Hydrogeological Investigation of Water Supply**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Elective

**Prerequisites:** General Chemistry

**Description:**

Hydrogeological Investigation of Water Supply is an elective course for students of water supply and drainage engineering. The purposes of this course are to enable students to master knowledge of hydrological geology, and develop their abilities to read materials of exploration results of water hydrogeology; analyze and solve problems of hydrogeology in drainage engineering, and improve their skills in calculation of hydrogeology. The main contents of the course cover concepts of hydrogeological investigation of water supply, physical properties and chemical components of groundwater, fundamental geology, storage, circulation, physical and

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chemical properties of groundwater, distribution, evaluation, pollution of groundwater, exploration of hydrogeology, and groundwater resource management.

## **01061 Water Supply and Drainage Engineering Structures**

**Credits:** 3

**Credit hours:** 48

**Categories:** Elective

**Prerequisites:** None

**Description:**

Water Supply and Drainage Engineering Structures is an elective course for students of water supply and drainage engineering. The purposes of this course are to enable students to master basic calculation methods of structure design, understand design principles of reinforced concrete structures according to current specifications, and train their abilities of engineering drawings. The main contents of the course cover basic calculation principles of reinforced concrete structures, calculation of carrying capacity related to normal sections of RC flexural members with normal sections and oblique sections, crack width and deflection check calculation of flexural members, crack resistance check of eccentric tension members and axial tension members, and basic theories of reinforced concrete beam slab.

## **01078 Reliability of Engineering Structures**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Reliability of Engineering Structures is an elective course for students of civil

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engineering. The purposes of this course are to enable students to master every main load that needs considerations on engineering structure design, origins of loads and design methods of the loads; master main concepts, principles of structure design, and structure design methods that meet demands of reliability. The main contents of the course cover principles and concepts of structure reliability calculation methods of structure reliability, load effects of structures, resistance of structural members, calibration of structure reliability, ultimate state design, robustness of structures, resistance to progressive collapse and reliability evaluation of existing structures.

## **01086 Special Structures**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Elective

**Prerequisites:** None

**Description:**

Special Structures is an elective course for majors of civil engineering. The objective of this course is to enable students to understand selection of structures, load features, analysis methods, section design and detailed requirements of special structures, and develop their abilities to solve sophisticated problems, thus laying a solid foundation for future programs. Main contents are designs of chimney, silo, reservoirs, ponds, water towers, and retaining wall.

## **01087 Airport Engineering**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Elective

**Prerequisites:** None

**Description:**

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Airport Engineering is an elective course for majors of civil engineering. It aims to enable students to understand fundamental knowledge of civil aviation and civil airport. The contents of this course are functional sections and grade of airports, takeoff and landing performance, runway, flight zones, terminal areas, airfreight facilities and airport fuel supply facilities.

### **01089 Bitumen and Asphalt**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Bitumen and Asphalt is an elective course for students of civil engineering. The purposes of this course are to enable students to master basic knowledge of asphalt pavement and asphalt mixture, and understand knowledge of selections of paving materials, testing and requirement of asphalt mixture, experiments of mineralogical aggregates, and tests and design of asphalt mixture. The main contents of the course cover traditional experiment of asphalt, experiment and specifications of Superpave asphalt, properties of general aggregates, gradation and mixture of aggregates, designing methods of Marshall mixture, and volumetric properties of mixtures.

### **01090 Theory of Structural Stability**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Elective

**Prerequisites:** None

**Description:**

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Theory of Structure Stability is an elective course for majors of civil engineering. The objectives of this course are to enable students to understand theories and concepts of structural stability and methods for stability problems of structural members and systems, and discuss numerical solution techniques for large structural systems and applications to design practices. Main contents include: concepts and categories of elastic stability, buckling behaviour of ideal columns and beams — columns, numerical solution of stability problems and related theories and methods in stability design.

### **01097 New Technology of Water Supply Treatment**

**Credits:** 1

**Credit hours:** 16

**Categories:** Elective

**Prerequisites:** Water Supply Engineering, Hydraulics

**Description:**

New Technology of Water Supply Treatment is an elective course for students of water supply and drainage engineering. The purposes of this course are to enable students to understand up-to-date technological development of water supply projects and processes, master new technological theories and calculation methods of water supply engineering with wide applications and thus lay a solid foundation for applications in the engineering practice. The main contents of the course cover by-product issues of water disinfection, technological renovation of conventional drinking water purification, new purification technology of polluted source water, biological oxidation pre-treatment technology, chemical oxidation and treatment technology, enhanced treatment technology of drinking water, and treatment of sludge water from waterworks.

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## **01098 New Technology of Waste Water Treatment**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Physicochemical Process for Water Treatment, Biological Process for Water Treatment

**Description:**

New Technology of Waste Water Treatment is an elective course for students of water supply and drainage engineering. The purposes of this course are to enable students to understand up-to-date technological development of waste water treatment procedure and master new technologies and methods of waste water treatment with wide application prospects, and thus lay a solid foundation for applications in engineering practices. The contents of the course cover development and evolution of technology of waste water treatment, OD wastewater treatment technology, AB wastewater treatment technology, SBR wastewater treatment technology, and CW wastewater treatment technology.

## **01109 Indoor Water Supply and Sewage**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Hydraulics, Pumps and Fans

**Description:**

Indoor Water Supply and Sewage is an elective course for students of building environment and equipment engineering. It is designed to enable students to understand basic theories and engineering technologies related to this course. Main contents are general introduction to indoor water engineering, combination, categories, tubing, accessories and water meter of water supply systems, layout ancillary service

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of water supply pipeline, water pressure, designed flow of water supply pipe, formula of design flow and design load, hydraulic calculation of water supply system, pumps, storage reservoir and suction well, water tank and air pressure, water quality protection, water supplying system in high-rise buildings, architectural fire hydrant system, calculation of fire hydrant systems, components of closed automatic sprinkler systems, introductions to categories and components of rain systems, drencher systems, water spray systems, fire-suppressant gas systems, and architectural drainage systems, arrangement of sanitary wares, ventilation systems of drainage pipes, updating of wasted water management and regional treatment, quota and design flow of water drainage, roofing water drainage systems, categories, components and supplying patterns of hot water supply, heat source, heating equipment of hot water supplying systems, calculation of hot water, heat consumption, hot media consumption, and selective calculation of heating and heat conservation equipments of hot water.

## **01129 Refrigeration and Air Conditioning Technology**

**Credits:** 2

**Credit hours:** 34

**Categories:** Compulsory

**Prerequisites:** Principles and Equipment of Heat and Mass Transfer, Pipe Network for Fluid Transmission and Distribution

### **Description:**

Refrigeration and Air Conditioning Technology is a compulsory course for students of building environment and equipment engineering. The purposes of this course are to enable students to master basic skills in technological design of refrigeration generator rooms for air-conditioning, understand working mechanisms and equipment features of regular air-conditioning units within air-conditioning range, cold water chilling units, LiBr absorption, or steam spray refrigerators, and tendency

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in refrigeration technology for air-conditioning, and improve students' abilities of independence and innovation in analyzing and solving problems through gradual training in “course experiments – experiment courses – engineering design training”. The contents of this course cover basic theories, properties and construction of steam compression refrigeration equipment; secondary refrigerant, lubricating oil, compression engine, throttle mechanism, heat exchanger, accessories, and absorption refrigerating systems.

### **01130 Heating Engineering**

**Credits:** 2

**Credit hours:** 34

**Categories:** Compulsory

**Prerequisites:** Engineering Thermodynamics, Heat Transfer, Fluid Mechanics

**Description:**

Heating Engineering is a compulsory course for students of Construction Environment and Equipment Engineering. The purposes of this course are to enable students to master basic theories and operation management of indoor heating systems and central heating systems, and develop their abilities to design heating systems and central heating systems for general civil and industrial buildings. This course covers heat load calculation of heating system design, hot water heating systems, heat sink devices of heating systems, hydraulic calculation of hot water heating systems, and heating regulations of hot water heating systems.

### **01133 Built Environment Engineering**

**Credits:** 2.5

**Credit hours:** 43

**Categories:** Compulsory



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**Prerequisites:** Engineering Thermodynamics, Heat Transfer, Fluid Mechanics

**Follow-ups:** HVAC Engineering, Refrigeration Technique, Construction Energy-efficient Technologies, Heating Engineering

**Description:**

Built Environment Engineering is a compulsory course for students of Built Environment and Equipment Engineering. The purposes of this course are to enable students to understand features of external environment, origins and features of internal environment and human requirement for environment, and master basic theories and methods to change and control internal and external environments. This course covers tectonics, engineering heat and mass transfer, sonics, optics, chromatology and psychology.

## **01137 Building Automation**

**Credits:** 2

**Credit hours:** 35

**Categories:** Compulsory

**Prerequisites:** Measure of Building Environment, Automatic Control Principles, Electrotechnics, Technology of Electronics, HVAC Engineering

**Description:**

Building Automation is a compulsory course for students of Construction Environment and Equipment Engineering. The purposes of this course are to enable students to master basic principles of Building Automation, general construction techniques and advanced management methods of construction organization, and develop their abilities to apply knowledge learnt into practices. This course covers common materials, materials processing, installation of indoor heating systems, installation of outdoor heating pipelines, installation of boilers and auxiliary equipment, construction of ventilation engineering and air conditioning, installation of refrigerating appliances, water supply and drainage constructions, organization and

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design of construction and construction management of installation enterprises.

### **01137 Heat Pump Air Conditioning Technology**

**Credits:** 2

**Credit hours:** 34

**Categories:** Elective

**Prerequisites:** Refrigeration Technology for Air Conditioning

**Description:**

Heat Pump Air Conditioning Technology is an elective course for students of building environment and equipment engineering. The purposes of this course are to enable students to understand principles, cycling, working fluid, and heat source, and driving means of pumps, masters types, structures, performance, application, installation and debugging of air-conditioner heat pump sets. The main contents of the course cover introduction of heat pump, theoretical cycling of heat pump, heat source and driver energy of heat pump, vapour compression heat pump, absorption heat pump, heat pump unit, and technological researches and applications situation of heat pump.

### **01139 Building Heat and Moisture Transfer**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Heat Transfer Theory, Architecture Conspectus

**Description:**

Building Heat and Moisture Transfer is an elective course for students of building environment and equipment engineering. The purposes of this course are to enable students to master basic concepts, theories of building heat and moisture

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transfer and basic methods of improving building heat and moisture transfer environment. The main contents of the course cover the introduction of building heat and moisture transfer, climate zone, architectural adaptability, influences of building to microclimate, solar radiation and its calculation, considerations of thermal insulation in building design, passive design for heating, harmonic response methods, internal disturbance, and air infiltration.

## **01154 Construction Consultanting**

**Credits:** 2

**Credit hours:** 34

**Categories:** Elective

**Prerequisites:**

**Description:**

Construction Consultanting is an elective course for students of engineering management. The purposes of this course are to enable students to understand basic conditions and necessity of implementing construction supervision; familiarize construction programs and management systems after implementing construction supervision, and master concepts of project supervision. The main contents of the course cover property of construction consultant, tasks, contents, methods and purposes of construction consultant, procedures of construction consultant, establishing procedure and forms of project supervision organization, basic duties of stuffs of project supervision organization, active and passive control.

## **01164 Modern Masonry Construction**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Elective

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**Prerequisites:** Concrete Structure

**Description:**

Modern Masonry Construction is an elective course for major of civil engineering. It aims at students' mastery of characteristics and development of modern masonry construction, and calculation of reinforced concrete masonry structures. Main contents are modern masonry structure materials, normal sections bearing capacity and oblique sections bearing capacity of reinforced concrete masonry structures, general requirements and calculation of static force and seismic resistance of reinforced concrete masonry shear wall structure design, constructions of reinforced concrete masonry shear wall structures, and pre-stressed masonry structures.

## **01177 Building Mechanics**

**Credits:** 5

**Credit hours:** 80

**Categories:** Compulsory

**Prerequisites:** College Physics, Advanced Mathematics

**Description:**

Building Mechanics is a compulsory course for students of Engineering Management. The purposes of this course are to enable students to master basic concepts, theories and calculating skills of structure analyses; develop their abilities to understand mechanical properties of structures in common uses. This course covers composition and equilibrium conditions of planar force systems, analyses of geometrical stability of plane systems, calculating methods of member strength and stiffness, and calculating principles of structure stability.

## **01180 Civil Engineering Materials**

**Credits:** 3

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**Credit hours:** 52

**Categories:** Elective

**Prerequisites:** None

**Description:**

Civil Engineering Materials is an elective for students of civil engineering. The purposes of this course are to enable students to master compositions, characteristics, and functions of civil engineering materials, familiarize methods of material tests and quality control, understand relationship among relevant preparation, material structure and performance, interaction between material and design parameters and construction measure choices, and select materials properly in different projects. The contents of this course cover basic characteristics of civil engineering materials, engineering properties and applications of construction steel products, inorganic gelled materials, concrete and mortar, brickwork materials, bitumen, bitumen mixture, wood, and materials for building functions.

## **01182 Construction Law (A)**

**Credits:** 1

**Credit hours:** 16

**Categories:** Elective

**Prerequisites:** None

**Description:**

Construction Law (A) is an elective course for majors of civil engineering. It aims to enable students to understand laws closely related with constructions. The contents of this course are Urban and Rural Planning Laws, land management laws, Real Estate Management Law, Construction programs, Engineering survey and design regulations, Bidding rules, Qualification systems for construction, Registered Architects Bill and Copyright Laws.

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## **01186 Professional English on Water Supply and Drainage Engineering**

**Credits:** 1

**Credit hours:** 16

**Categories:** Elective

**Prerequisites:** Basic English

**Description:**

Professional English on Water Supply and Drainage Engineering is an elective course for students of water supply and drainage engineering. The purposes of this course are to enable students to master professional vocabulary in order to read original textbooks and write English abstracts for dissertations. The main contents of the course cover features of professional English of water supply and sewerage, basic principles of energy utilization, heat transfer, refrigeration and cooling systems, and air conditioning systems.

## **01186 English for Civil Engineering**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

English for Civil Engineering is an elective course for students of civil engineering. It aims to enable students to master English words in civil engineering. The contents of this course are introduction to civil engineering, construction engineering, rock engineering, road and bridge engineering, tunnel and underground project engineering, civil engineering construction engineering and computer applications in civil engineering.

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## **01194 Rock Mechanics**

**Credits:** 2

**Credit hours:** 34

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Rock Mechanics is a compulsory course for students of geotechnical engineering. The purposes of this course are to enable students to master basic concepts and theories of rocks and rock mass, methods of stability analyses and basic design methods related to projects of rock slopes, underground and subgrade, and familiarize common experiment testing methods in rock mechanics. The contents of this course cover basic mechanic performance of rocks and rock mass, rock slope engineering, rock underground engineering, and rock subgrade engineering.

## **01199 Construction Technology (1)**

**Credits:** 3

**Credit hours:** 52

**Categories:** Compulsory

**Prerequisites:** Engineering Structure, Soil Mechanics, Groundsel Basis

**Description:**

Construction Technology (1) is a core specialized course for students of Engineering Management. The purposes of this course are to enable students to master basic knowledge of construction technologies, and develop their abilities to analyze and solve general technological problems in practices. This course covers earthwork, pile foundation work, marshalling work, reinforced concrete work, pre-stressed concrete work, structural hoisting work, and water proofing work.

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## **01207 Ground Treatment**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Engineering Geology, Soil Mechanics, Foundation Engineering

**Description:**

Ground Treatment is an elective course for students of civil engineering. The purposes of this course are to enable students to understand basic concepts and theories of Ground Treatment, and develop their abilities to design ground stabilization projects, calculate commonly used ground treatment cases and quality inspection methods. This course covers purposes, meanings, classifications, design principles and development of ground treatment, gravel pile methods, consolidation methods, grouting methods, and geosynthetics foundation methods.

## **01219 Composite Materials for Civil Engineering**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Elective

**Prerequisites:** Civil Engineering Materials

**Description:**

Composite Materials for Civil Engineering is an elective course for majors of civil engineering. It aims to enable students to understand materials, new composite materials with better performance in particular, in civil engineering for better use in construction programs. Main contents are introduction to composite materials, basic mechanic performance, steel fiber reinforced concrete, synthetic fiber reinforced concrete, fiber reinforced fiber, polymer cement concrete, and other composite materials.



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## **01222 Engineering Contract Management**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Project Management, Legal System of Engineering Contract

**Description:**

Engineering Contract Management is a core specialized course for students of Engineering Management. The purposes of this course are to enable students to master theories and structures of contract management, and develop their abilities to apply what they have learnt into practices. This course covers management systems, planning and risk management of civil engineering contracts, core process analyses of engineering contract management and settlement of disputes.

## **01223 Construction Histology**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Construction Histology is a core specialized course for students of Engineering Management. The purposes of this course are to enable students to master basic principles of flow process of construction organization, drawings of arrow diagramming methods and calculation of time parameters, and develop their abilities to edit designs of construction organization independently. This course covers introduction of construction organization, flow processes of construction organization, network planning techniques, design of construction management for unit projects, construction organization design, implementation, management and final acceptance of projects.

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## **01230 Real Estate Development and Management**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Real Estate Development and Management is an elective course for students of engineering management. The purposes of this course are to enable students to master basic knowledge of development stage and operation stage, and improve their abilities to control links of real estate development and management. The main contents of the course cover main forms and contents of real estate development and management, real estate finance and investment, taxes and costs of real estate, achievement of development land for real estate, management of real estate development, marketing and sales of real estate development, and bidding and tendering of real estate.

## **01241 Reliability Identification and Structure Reinforcement**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Elective

**Prerequisites:** Structural Mechanics, Concrete Structure Design Theory, Experiments of Architectural Structure

**Description:**

Reliability Identification and Structure Reinforcement is an elective course for students of civil engineering. It requires students to master basic methods and techniques of reliability identification and structure reinforcement to serve demands related to structure design, construction, identification and scientific researches. Main

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contents are introduction to reliability identification and structure reinforcement, development of building maintenance and renovation industry, building reliability projects, identification methods and related technology, basic theories of structural reliability, information collecting and processing, experiments of structure of dynamic load, and building maintenance and reinforcement.

## **01266 Steel Bridge**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Bridge Engineering A, Steel Structure

**Description:**

Steel Bridge is an elective course for students of civil engineering. The purposes of this course are to enable students to master construction principles, calculation theory and design methods of common steel bridges at home and abroad. The main contents of the course cover development situation of steel bridges, main structural forms and mechanic properties, general requirements and basic calculation and principle of steel bridge design, main materials of steel bridge bridging connection, welding connection, bridge deck structures, main girder, creep and shrinkage and temperature difference of concrete, compound sections, continuous beams and steel arch bridges, steel arch bridges, suspension bridges, girder bridges, and anti-corrosive coatings of steel bridges.

## **01268 Fluid Transmission and Distribution Network**

**Credits:** 2

**Credit hours:** 34

**Categories:** Compulsory

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**Prerequisites:** None

**Description:**

Fluid Transmission and Distribution Network is a compulsory course for students of building environment and equipment engineering. The purposes of this course are to enable students to master working mechanisms and computational analytical methods of fluid transmission and distribution in various projects; power producer of fluid transmission and distribution – basic theory and selection methods of pumps and draught fans, basic theories and methods of designing, debugging, modulating pipe network; and use design handbook properly and design calculation and check of pipe network. The contents of this course cover functions of pipe network in various projects, and interaction among pipe network and other components in projects; basic constructions of pipe network, functions of each constituent, and interaction among constituents.

## **01271 Heat and Mass Transfer Fundamentals and Equipment**

**Credits:** 2

**Credit hours:** 35

**Categories:** Compulsory

**Prerequisites:** Engineering Thermodynamics, Fluid Dynamics, Heat Transfer

**Description:**

Heat and Mass Transfer Fundamentals and Equipment is a core specialized course for students of Construction Environment and Equipment Engineering. The purposes of this course are to enable students to understand basic theories and calculation methods of mass transfer, and working principles of related equipments, and master heat and mass transfer fundamentals in constructional environment and equipments and related thermodynamic calculation methods. This course covers basic theories of mass transfer; homology of momentum, energy and mass transfer; and solutions of air processing.

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## **01278 Engineering Economics (A)**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Economics, Construction Technology, Building Material, Accounting

**Description:**

Engineering Economics (A) is a core specialized course for students of Engineering Management. The purposes of this course are to enable students to understand basic theories and methods of engineering economics, master relationship between engineering technologies and economic effectiveness, and develop their abilities to analyse engineering economics. This course covers basic theories of engineering economics, factors of engineering economics, rises and applications of project fund, life-circle cost analyses, financial evaluation of projects, national economic evaluation, engineering design and technical and economic analyses, and post project evaluation.

## **01282 Built Environment Measurement Technology**

**Credits:** 2

**Credit hours:** 34

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Built Environment Measurement Technology is a compulsory course for students of building environment and equipment engineering. The purposes of this course are to enable students to master basic measurement methods of temperature, pressure, humidity, flow velocity, flow quantity, liquid level, environmental noise, light intensity, and parameters of detrimental gas in environment, and basic theories and applications of measurement equipments; measurement objects and methods in

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building environment, and develop their abilities to design and carry out relevant experiments. The contents of this course cover basic knowledge of measurement and measurement equipments, treatment of measurement data, error analyses, heat measurement of buildings, measurement of fluid parameters and noxious gas in air.

### **01283 Energy Efficient Construction Technology**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Heat Transfer, Fluid Mechanics, Construction Environment Engineering, HVAC Engineering,

**Description:**

Energy Efficient Construction Technology is a core specialized course for students of Construction Environment and Equipment Engineering. The purposes of this course are to enable students to master methods of construction energy-efficient technologies, and energy efficiency management; develop their skills to research further in energy-efficient technologies. This course covers bases of construction energy-efficient technologies, bases and methods of construction energy-efficient design, energy-efficient technologies of construction equipment, reading of construction energy-efficient policies, and introduction of cases related to construction energy-efficient projects.

### **01293 Technological Design for Boilers and Boiler Rooms**

**Credits:** 2

**Credit hours:** 34

**Categories:** Elective

**Prerequisites:** Heat Transfer Theory, Thermodynamics Engineering, Hydromechanics

**Description:**

Technological Design for Boilers and Boiler Rooms is an elective course for students of building environment and equipment engineering. The purposes of this course are to enable students to understand types, structures, boiler mechanisms and rooms; master constitutions of boiler room systems, selection calculation of equipment, process design of industrial boilers; develop students' abilities to design boilers and boiler rooms equipment systems, constructions and operations. The main contents of the course cover basic knowledge of boiler equipment, combustion equipment of boilers, coaling handling of boiler rooms, deashing, water supply treatment of boiler rooms, process design of industrial boiler rooms, and operation management of industrial boiler rooms.

**01295 Numerical Methods for Fluid and Heat Flow**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Hydrodynamics, Heat Transfer Theory

**Description:**

Numerical Methods for Fluid and Heat Flow is an elective course for majors of building environment and equipment engineering. The aim of this course is to enable students to master basic theories of computational fluid dynamics and calculations of flowing and heat transfer, develop their scientific and engineering thinking abilities to solve practical problems in related fields. Main contents are one-dimensional thermal conductivity, multi-dimensional thermal conductivity, potential flow and flow fully developed in pipes, flow and heat transfer of boundary layer types, flow and heat transfer of reflux, numerical calculation of turbulence, introduction to general programs for vorticity-stream function methods, other numerical methods for solving

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flow and thermal conductivity problems

### **01307 Structural Design of High-Rise Buildings**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Structural Design of High-Rise Buildings is an elective course for students of civil engineering. The purposes of this course are to enable students to understand principles and methods of high-rise building design and design high-rise structure buildings. The main contents of the course cover mechanic properties of high-rise buildings, present situation and development trend of high-rise buildings, mechanic properties and structure systems of high-rise buildings, contents and requirements of structural form selections, principles of structural arrangement, setting principles of deformation joints, and design of reinforced concrete shear walls.

### **01309 Operation of Water Supply and Drainage Projects**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Operation of Water Supply and Drainage Projects is an elective course for students of water supply and drainage engineering. The purposes of this course are to enable students to understand emerging situations of domestic water crises to reinforce a sense of crisis and mission, and familiarize basic theories, related



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disciplines and modern scientific technology. The main contents of the course cover urban water supply systems, significance and conventional process of water purification, water purification, wastewater features and pollutant, building water supply and drainage systems, relationship between building water supply and drainage systems and municipal water supply and drainage systems.

## **01309 Engineering Geology**

**Credits:** 1.5

**Credit hours:** 26

**Categories:** Compulsory

**Prerequisites:** None

### **Description:**

Engineering Geology is an elective for students of civil engineering. The purposes of this course are to enable students to master basic concepts, theories and methods of engineering geology; understand phenomena and issues regarding engineering geology in civil engineering construction, and effects of these phenomena and issues on processes of engineering construction design, construction, and application; tackle and utilize natural geological conditions properly, familiarize requirements and methods of engineering geological investigation. The contents of this course cover mineral and rock of civil engineering construction sites, geological structure, engineering geological conditions, unfavourable geological phenomena and prevention, and basic theoretical knowledge of engineering geological investigation.

## **01310 Project Risk Management**

**Credit:** 2

**Credit hours:** 32

**Prerequisites:** None

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**Description:**

Project Risk Management is an elective course for majors of civil engineering. It aims to enable students to master definitions and methods of project risk management. The contents of this course are introduction to project risk management, types of project risk management, principles of project risk engineering, project risk analyses, precaution of project risk, counter measurement of project risk, insurance and warranty of projects, and cases of project risk management.

**01312 Construction Environment and Safety****Credits:** 2**Credit hours:** 32**Categories:** Elective**Prerequisites:** Introduction to Engineering Management**Description:**

Construction Environment and Safety is an elective course for students of engineering management. The purposes of this course are to develop students' abilities to collate, induce and master knowledge learnt and form a habit of independent thinking. The main contents of the course cover engineering environment construction, construction site environment, establishment and operations of safe management of constructive project systems, supervision and duties of safe management of production constructive projects, safe production construction projects, civilized construction supervision and occupational accident management.

**01313 Construction Project Management****Credits:** 2**Credit hours:** 32**Categories:** Compulsory

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**Prerequisites:** Engineering Cost, Engineering Construction, Construction Organization

**Description:**

Construction Project Management is a core specialized course for students of Engineering Management. The purposes of this course are to enable students to master basic theories of Construction Project Management and basic methods of investment control, progress control and quality control, familiarize applicable features of specific management methods, and develop their abilities to work in construction project management efficiently. This course covers concepts and types of construction project, decision-making process, planning of management, bidding and purchasing management, project progress management, cost management and resource management.

## **01321 Environmental Prevention and Sustainable Development**

**Credit:** 1

**Credit hours:** 16

**Prerequisites:** None

**Description:**

Environmental Prevention and Sustainable Development is an elective course for majors of civil engineering. It aims to enable students to master basic knowledge of environmental science and ecology and sustainable development theories and applications. The contents of this course are fundamental ecology, utilization and protection of natural resource, land deterioration and its control, implementation of sustainable development strategy, environment ethics, environment laws, and environment planning and management.

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## **01325 Concrete Bridges (1)**

**Credits:** 4

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Concrete Bridges (1) is a compulsory course for students of bridge engineering. The purposes of this course are to enable students to master basic characteristics, major construction features, design and calculation theories of bridge engineering, and bridge construction, developments and trends of bridge engineering, focus on reading literature and references, and develop students' abilities of autonomous study. The contents of this course cover deck construction, concrete bridges with simple beams, masonry and concrete arch bridges, bridge construction, bridge supporting, abutment and foundation, and computer-aided bridge design.

## **01326 Concrete Bridges (2)**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Concrete Bridges (2) is a compulsory course for students of bridge engineering. The purposes of this course are to enable students to master design principles of bridges, mechanical characteristics of bridges of various systems and basic theories of structural calculation, understand knowledge learned in classes by integrating course design and exercises, and develop practical skills. The contents of this course cover main content of design, calculation, configuration, and construction of bridges in arch

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systems, basic theories of design calculation, and understand long-span bridges, such as design and calculation characteristics.

### **01333 Construction Project Management**

**Credits:** 1,5

**Credit hours:** 24

**Categories:** Elective

**Prerequisites:** Project Cost, Engineering Construction, Construction Histology

**Description:**

Construction Project Management is an elective course for students of civil engineering. It aims to enable students to master fundamental theories of construction project management. The contents of this course are introduction to construction project management, feasibility study and economic appraisal of the construction projects, procurement and contract management of construction projects, construction project management organization, quality, progress, costs, resources of construction projects, risk management, assessment of construction projects, and occupational safety and environmental management.

### **01341 Traffic Engineering**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Highway Survey and Design

**Description:**

Traffic Engineering is an elective course for students of civil engineering. The purposes of this course are to enable student to master basic knowledge, theories, and methods of traffic engineering and solve general problems of traffic engineering. The

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main purposes of this course cover introduction to traffic engineering, features of traffic engineering, theories of traffic flow, road capacity, road traffic planning, road traffic safety, management and control of urban traffic, design and planning of parking lots.

### **01343 Traffic Control and Management**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Elective

**Prerequisites:** None

**Description:**

Traffic Control and Management is an elective course for students of civil engineering. It aims to enable students to master contents and facilities of traffic management and understand principles, technologies and equipment of traffic control. The contents of this course are overall management and local management, automobile management, pedestrian management, parking management, level-crossing management, traffic signal control in single intersection, traffic signal control in crossway of main stems, local traffic signal control systems and traffic control in high speed roads.

### **01350 Bridge Inspection and Rehabilitation**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Elective

**Prerequisites:** None

**Description:**

Bridge Inspection and Rehabilitation is an elective course for majors of civil

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engineering. It requires students to master applications of bridge inspection apparatus, basic methods of bridge inspection and static and dynamic load testing. Main contents cover conventional instruments for bridge inspection and static and dynamic load testing methods, and fundamental concepts and theories of bridge rehabilitation for superstructure and infrastructure.

### **01351 Air Pollution Control Engineering**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Air Pollution Control Engineering is an elective course for majors of building environment and equipment engineering. The aims of this course are to enable students to develop basic abilities related to air pollution control engineering design, understand basic concepts, theories and calculation methods of air pollution control engineering, and improve their abilities to analyze and solve practical problems. Main contents are basic concepts of air pollution control engineering, inflammation and air pollution, fundamentals of particle pollution control technology, dust collection devices, oxysulfide pollution control, stationary sources of nitrogen oxide pollution control, technologies of particle and SO<sub>2</sub> pollution control, and calculation methods of air pollution control engineering design.

### **01353 Heating, Ventilating and Air Conditioning Engineering**

**Credits:** 3

**Credit hours:** 52

**Categories:** Compulsory

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**Prerequisites:** Fundamentals and Equipment of Heat and Mass Transfer, Fluid Transmission and Distribution Pipe Networks, Construction Environment Engineering

**Description:**

Heating, Ventilating and Air Conditioning Engineering is a core specialized course for students of Construction Environment and Equipment Engineering. The purposes of this course are to enable students to master basic theories of air-conditioning, understand new theories, technologies and equipments related to air-conditioning technologies, so that they could have initial capacity to analyze and solve practical problems in air-conditioning technology. This course covers physical properties and enthalpy-humidity chart of air, load calculation of air-conditioning systems, heat-humidity treatment to air, air-conditioning systems, purification and quality control of air, and air distribution in air-conditioned rooms.

## **01355 Principles of HVAC Design**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Principles of HVAC Design is an elective course for students of building environment and equipment engineering. The purposes of this course are to enable students to master theories, concepts and design methods of air conditioners. The main contents of the course cover heat and humid exchangers, fluid transmission equipment, AC terminal, heat and cold source equipment, principles and design of HVAC equipment, air purification equipment, equipment of sound attenuation and vibration isolation, technological standards of AC equipment, design of AC terminal, and design of equipment related to sound attenuation and vibration isolation.



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## **01371 Computer Applications in Hydraulic Engineering**

**Credits:** 2

**Credit hours:** 40

**Categories:** Elective

**Prerequisites:** Hydromechanics, Computer Programming, Water Supply Engineering, Pumps and Pumping Station, Building Water Supply and Drainage

**Description:**

Computer Applications in Hydraulic Engineering is an elective course for students of civil engineering. It aims to enable the students to master basic concepts of computer application in water engineering. The contents of this course are methods of water supply and drainage calculation, hydraulic calculation programs, pumps and pump station calculation programs, hydrology and water engineering economy calculation programs, water supply and sewage network calculation programs, water supply and drainage design calculation programs of buildings, water quality engineering calculation programs, pump-stopping water hammer program design and CAD drawing of water supply and drainage.

## **01373 Economy and Budget of Hydraulic Projects**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Water Supply Engineering (1), Water Supply Engineering (2), Construction Water Supply and Drainage Engineering

**Description:**

Economy and Budget of Hydraulic Projects is a core specialized course for students of Water Supply and Drainage Engineering. The purposes of this course are

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to enable students to master basic principles and metrics of economic analyses of water supply and drainage techniques, contents and methods of economic evaluation and national economic evaluation of projects, and develop their abilities to analyze project economy and budget. This course covers economic evaluation of projects, national economic evaluation of projects, researches on feasibility and assessment techniques.

### **01380 Physicochemical Water Treatment Processes**

**Credits:** 3.5

**Credit hours:** 56

**Categories:** Compulsory

**Prerequisites:** Engineering Graphics, Physics Chemistry, water chemistry

**Description:**

Physicochemical Water Treatment Processes is a core specialized course for students of Water Supply and Drainage Engineering. The purposes of this course are to enable students to understand basic concepts, theories and methods of Physicochemical Processes for Water Purification, and develop their abilities to design physicochemical processes of urban and industrial water. This course covers coagulation, sediment, defecation, concentration, air flotation, filtration, sterilization, adsorption, ion exchange, and membrane methods.

### **01385 Soil Mechanics**

**Credits:** 2.5

**Credit hours:** 44

**Categories:** Compulsory

**Prerequisites:** None

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**Description:**

Soil Mechanics is an elective for students of civil engineering. The purposes of this course are to enable students to master basic concepts and theories of soil mechanics, comprehensively apply these theories and concepts, familiarize basic theories and methods in relation to calculation of foundation settlement, soil pressure, and slope stability analysis, and develop students' capacities to deal with general problems of soil mechanics. The contents of this course cover physics features and engineering categorization of soil mass, deformation features and intensity theory of soil mass, soil pressure, retaining walls, bearing capacity of foundation soil and stability of slopes.

**01386 Soil Mechanics and Ground Foundation****Credits:** 3**Credit hours:** 50**Categories:** Compulsory**Prerequisites:** Mechanics of materials, Design Principle of Concrete and Masonry Structure**Description:**

Soil Mechanics and Ground Foundation is a core specialized course for students of Engineering Management. The purposes of this course are to enable students to master basic theories of Soil Mechanics and geotechnical test, and develop their ability in ground foundation design and ground treatment. The contents of this course are engineering behaviours of soil, stress and strain calculation in soil, strength theory, calculation of earth pressure, analyses of ground bearing capacity and stability analyses of soil slopes.

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## **01387 Non-destructive Techniques of Civil Engineering**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Elective

**Prerequisites:** Concrete Material and Techniques, Civil Engineering Materials, Composite Material of Civil Engineering

**Description:**

Non-destructive Techniques of Civil Engineering is an elective course for majors of civil engineering. It requires students to understand frontier and basic concepts of non-destructive techniques of concrete quality, master common test methods and related regulations in China. Main contents are rebound methods of structural concrete strength, ultrasonic pulse methods of structural concrete strength, comprehensive methods of structural concrete strength, semi-destructive methods of structural concrete strength, flaw detection of ultrasonic pulse of structural concrete, and non-destructive methods of concrete pile quality.

## **01388 Modern Prestressed Concrete Structures**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Elective

**Prerequisites:** Structure Mechanics, Concrete Structure

**Description:**

Modern Prestressed Concrete Structures is an elective course for majors of civil engineering. It aims to enable students to master basic concepts, theories and design skills of concrete structures, develop their abilities to analyze and design complex pre-stressed concrete structures. Main contents are introduction to pre-stressed concrete structures, calculation of pre-stressed concrete flexural design, partial

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pre-stressed concrete flexural design, pre-stressed statically indeterminate structure design, and unbonded pre-stressed concrete structure design.

### **01391 Finite Element Theory**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Structure Mechanics

**Description:**

Finite Element Theory is an elective course for majors of civil engineering. It requires students to master basic theories and methods of finite element theories, solve problems in structures of bar systems and plastic mechanics, and understand theories and methods in structural analyses. Main contents are introduction to finite element theories, finite element theories of continuous beam structures, algorithmic languages and their applications, finite element theories of plan framework structure analysis, and online exercises.

### **01397 Automatic Control Theory**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Automatic Control Theory is a compulsory course for students of building environment and equipment engineering. The purposes of this course are to enable students to master concepts, basic analytical methods and calibration of control system related to closed loop feedback, lay a theoretical foundation for designing and

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debugging widely used closed loop control systems at present, and further study specialized literature and modern control theory. The contents of this course cover tasks of automatic control and basic concepts of automatic control; three control methods and properties such as closed loops, open loops and the compound methods.

## **01416 Construction Installation Engineering Budget**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Budgeting Environment and Equipment Engineering, All Courses of Building Water Supply and Drainage

### **Description:**

Construction Installation Engineering Budget is an elective course for students of building environment and equipment engineering. The purposes of this course are to enable students to understand constitution and classification of construction projects, fundamental construction and construction procedures, and engineering cost; develop students' abilities in the application of estimated budgeting for construction installation engineering. The main contents of the course cover constitution and classification of construction projects, composition and calculation of Instruments and implement purchasing cost, enterprise quota calculation of composition regarding other engineering construction cost, design estimate examination, budget of heating engineering construction drawing and water supply and drainage.

## **01500 Engineering Graphics (1)**

**Credits:** 3

**Credit hours:** 48

**Categories:** Elective

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**Prerequisites:** None

**Description:**

Engineering Graphics (1) is an elective course for students of civil engineering. The purposes of this course are to enable students to master projection theory, foundation of graphic techniques, surveying and drawing of components, sketch drawing, patterns and methods of descriptions, configurations, illustrations and graphics of elements in space geometry; with a focus on the training of computer-aided drawing; learn to apply modern design devices to expressing ideas of design swiftly and accurately, and thus develop their abilities of creative thinking in graphics, space analyses and computer-aided drawing and designing. The contents of this course cover projection theory, methods of drawing graphs and reading graphs, and development of engineer quality and graphic expressions of two-dimensional and three-dimensional design.

## **01501 Engineering Graphics (2)**

**Credits:** 1

**Credit hours:** 16

**Categories:** Elective

**Prerequisites:** None

**Description:**

Engineering Graphics (2) is an elective for students of civil engineering. The purposes of this course are to enable students to master basic concepts and theories, improve their spatial thinking capacity and imagination through a vast amount of practice from the easy to the difficult, from objects to pictures, and again from pictures to objects, develop vigorous and earnest attitudes, familiarize basic methods of using equipment, drawing various projections and size standards with the support of computers, and develop their abilities to read accurately and draw component and assembly pictures of machinery. The contents of this course cover descriptive

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geometry, foundation of cartography, mechanic cartography, computer-aided two-dimensional drawing and three-dimensional configuration methods.

## **01505 Pumps and Pumping Stations**

**Credits:** 2

**Credit hours:** 34

**Categories:** Compulsory

**Prerequisites:** Fluid Mechanics, Engineering Mechanics

**Follow-ups:** Water Supply and Sewerage Pipeline Engineering, Construction Water Supply and Sewerage Engineering

**Description:**

Pumps and Pumping Stations is a core specialized course for students of Water Supply and Drainage Engineering. The purposes of this course are to enable students to master basic structures, operating principles and major features of centrifugal pumps and flow pumps, speed governing operations and energy-saving principle of pump set, and solving methodology of operations of pumping stations; develop their abilities to work out enlarged preliminary design for pumping stations. This course covers unit choices for pumping stations, tube arrangement, supporting facilities, electric transformer and distribution equipments, fundamental functions and components of SCADA systems.

## **01506 Water Supply Pipeline Engineering**

**Credits:** 2.5

**Credit hours:** 40

**Categories:** Compulsory

**Prerequisites:** Hydraulics, Pump and Pumping Station

**Description:**



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Water Supply Pipeline Engineering is a core specialized course for students of Water Supply and Drainage Engineering. The purposes of this course are to enable students to master basic principles of water pumps and water pumping stations, understand components of water systems and calculation methods of water consumption, and develop students' abilities to design urban and industrial water supply network independently. This course covers components and arrangement of systems, factors affecting arrangement of systems, calculation of water consumption, features of arrangement of water pipes, general calculation formula of economic pipe sizes, concepts of economic velocity and economic pipe sizes, and factors affecting economic pipe sizes.

### **01507 Water Sewerage Pipeline Engineering**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Hydraulics, Water Supply Pipeline Engineering

**Description:**

Water Sewerage Pipeline Engineering is a core specialized course for students of Water Supply and Drainage Engineering. The purposes of this course are to enable students to understand basic features and purposes of urban network of drains and current regulations on city drainage pipelines, and master basic theories and techniques of network of drains. This course covers design of sewage conduit systems, design of rainwater pipe systems, combined drainage systems and maintenance and management of drain pipe systems.

### **01508 Utilization and Protection of Water Resources**

**Credits:** 1.5

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**Credit hours:** 24

**Categories:** Compulsory

**Prerequisites:** Hydrology and Hydrogeology, Hydrogeology of Water Supply

**Description:**

Utilization and Protection of Water Resources is a core specialized course for students of Water Supply and Drainage Engineering. The purposes of this course are to enable students to master basic concepts, theories and methods of water resource, familiarize theories, techniques and measures of modern water conservation, and understand calculation methods of water resources and basic principles of water protection. This course covers concepts and features of water resources, evaluation of regional water resources, water environmental quality and water pollution, water acquisition projects and introduction of urban water conservation.

## **01509 Construction of Water Supply and Drainage Systems**

**Credits:** 2.5

**Credit hours:** 40

**Categories:** Compulsory

**Prerequisites:** Hydraulics, Pump and Pumping Station

**Description:**

Construction of Water Supply and Drainage Systems is a core specialized course for students of Water Supply and Drainage Engineering. The purposes of this course are to enable students to understand basic theories and methods of Construction Water Supply and Drainage System, master basic engineering skills and design drawing skills, and develop their abilities to design construction water supply and drainage system of moderate complex degrees. This course covers classifications and components of water supply systems, water supply design flow rates, classification and components of construction water drainage systems, classification and components of hot water supply systems, and water supply projects in living quarters.

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## **01510 Water Treatment Experiment Technology**

**Credits:** 1

**Credit hours:** 26

**Categories:** Compulsory

**Prerequisites:** Physicochemical Purification of Water, Biological Purification of Water

**Description:**

Water Treatment Experiment Technology is a core specialized course for students of Water Supply and Drainage Engineering. The purposes of this course are to enable students to master basic principles and general methods of water treatment, and develop their abilities to design water treatment plan and analyze data individually. This course covers experiment scheme design, analyses and processing of experimental data, coagulation experiment, aeration and oxygenation experiments, filtering and back wash experiment, precipitation experiment, ion exchange softening experiment, and acidic wastewater neutralization experiments.

## **01050 Road Reconnaissance and Design**

**Credits:** 3.5

**Credit hours:** 56

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Road Reconnaissance and Design is a compulsory course for students of road engineering. The purposes of this course are to enable students to master design methods of road plane, road profiles, and road transects, methods of route selection and determination, design of level-crossing, develop their capacity of road

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reconnaissance design, and understand every aspect of road engineering, and familiarize basic knowledge and improve their competence to design, construct and manage road projects. The contents of this course cover basic concepts of road reconnaissance, design and construction of road plane, profiles and transect, and transect design of road plane and profiles.

## **01511 Geotechnical Engineering Reconnaissance and Measurement Technology**

**Credits:** 2.5

**Credit hours:** 44

**Categories:** Compulsory

**Prerequisites:** None

### **Description:**

Geotechnical Engineering Reconnaissance and Measurement Technology is a compulsory course for students of geotechnical engineering. The purposes of this course are to enable students to master various reconnaissance methods, understand numerous in-situ test methods, develop their skills to analyze factors affecting in-situ tests, and to design, explore, utilize and maintain new methods and equipment, improve their innovative capacity to analyze, and solve problems. The contents of this course cover basic concepts, procedures and methods of geotechnical engineering reconnaissance, operations of various reconnaissance and samplings, and methods of compiling project reconnaissance reports.

## **01524 Engineering Fire Control and Safety**

**Credits:** 2

**Credit hours:** 32

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**Categories:** Elective

**Prerequisites:** None

**Description:**

Engineering Fire Control and Safety is an elective course for majors of civil engineering. It aims to enable students to master basic knowledge of building fire-control and safety. The contents of this course are fireproof in building construction, automatic alarm systems, fire-extinguishing systems, smoke exhaust systems, safe escape and inducible systems, fire protection control rooms, and management and maintenance of fire control equipment in buildings.

## **01525 Solid Wastes Treatment and Disposal**

**Credits:** 1

**Credit hours:** 16

**Categories:** Elective

**Prerequisites:** None

**Description:**

Solid Waste Treatment and Disposal is an elective course for majors of civil engineering. It aims to enable students to understand advanced technologies and achievement of treatment and disposal of solid wastes. The contents of this course are disposal of solid wastes, incineration of solid wastes, pyrogenic decomposition of solid wastes, methods of waste landfills, recycling of wastes, collection, transportation, compaction, separation and crush of solid wastes.

## **01527 Seismic Design of Special Structures**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Elective

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**Prerequisites:** Concrete Structure, Structural Mechanics

**Description:**

Seismic Design of Special Structures is an elective course for majors of civil engineering. It aims to enable students to understand basic concepts, principles and requirements of seismic design of special structures, and develop their abilities to solve practical problems with seismic design theories. Main contents are seismic and principles of seismic design, seismic performance and structural seismic analyses, seismic damage of towers and seismic design, seismic damage of pools and seismic design, and seismic design of underground pipeline networks.

## **01528 Functional Construction Materials**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Elective

**Prerequisites:** None

**Description:**

Functional Construction Material is an elective course for majors of construction functional material. It aims to enable students to master properties of construction materials. The contents of this course are rigid gas inorganic cementitious material, concrete, cement concrete, building mortar, walling materials, structural steel, building functional materials, decoration material and electric materials.

## **01529 Concrete Technology**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Elective

**Prerequisites:** None

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**Description:**

Concrete Technology is an elective course for majors of civil engineering. It aims to enable students to master fundamental principles and rules of concrete technology. The contents of this course are structures and quality of concrete, raw materials and manufacturing technology, concrete construction technology, inherent stress concrete technology, special concrete technology, inspection and test for concrete products, deterioration diagnosis of concrete, concrete remediation and strengthening technology and case studies.

**01531 Water Analytical Chemistry****Credits:** 3**Credit hours:** 56**Categories:** Compulsory**Prerequisites:** Organic Chemistry, Inorganic Chemistry, Physical Chemistry**Description:**

Water Analytical Chemistry is a core specialized course for students of Water Supply and Drainage Engineering. The purposes of this course are to enable students to master basic concepts and theories of Water Analytical Chemistry, and develop their abilities to analyze and solve practical problems in analytical chemistry independently. This course covers acid-base titration, complexometric titration, precipitation titration, oxidation-reduction titration, electrochemical analyses, absorption spectrometry, chromatography and atomic spectrometry.

**01532 Traffic Tracking****Credits:** 1.5**Credit hours:** 24**Prerequisites:** None

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**Description:**

Traffic Tracking is an elective course for students of civil engineering. It aims to enable students to understand history and reform of tracking traffic. The contents of this course are introduction, tracking, tracking structures, ballastless tracking, railroad switch, track geometry bit, mechanical analyses of tracking structure, welded rails, vibration and noise of rails and tracking construction.

**01533 Beam on Elastic Foundation**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Elective

**Prerequisites:** None

**Description:**

Beam on Elastic Foundation is an elective course for majors of civil engineering. It aims to enable students to master basic theories of beams on elastic foundation. The contents of this course are beam on elastic foundation, common beam, classification of computer model, local elastic foundation model, semi-infinite elastic foundation model, short beams on elastic foundation, and long beams and rigid beams.

**01534 Structural Modeling of Civil Engineering**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Elective

**Prerequisites:** Materials Mechanics, Structure Mechanics, Reinforced Concrete, Construction Materials

**Description:**

Structural Modeling of Civil Engineering is an elective course for majors of civil



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engineering. It aims at improving students' abilities to solve practical issues, and cultivation of their creativity to combine theories with practical issues to obtain training as engineers. Main contents are designs, making and calculation of structural model, test plan making and results arrangement and analyses, simulation theories, plastic model and reinforced concrete model, loading, data measurement and conversion, studies on model analyses, errors and accuracy.

### **01535 GPS Theory and Practice**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Elective

**Prerequisites:** None

**Description:**

GPS Theory and Practice is an elective course for majors of civil engineering. It aims to enable students to understand basic principles, modes and operational methods of GPS navigation, thus laying a solid foundation for future work and studies. Main contents are introduction to development and formation of GPS, satellite signal structures, major error sources of GPS and measures of its elimination, methods of detecting distance from satellites to receivers, principles of GPS positioning, and different kinds of positioning model.

### **01536 Principles and Applications of Geographic Information System**

**Credits:** .5

**Credit hours:** 24

**Categories:** Elective

**Prerequisites:** None

**Description:**

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Principles and Applications of Geographic Information System is an elective course for majors of civil engineering. It aims to enable students to understand basic rules and applications of geographic information systems. The contents of this course are introduction to geographic information systems, spatial data acquisition, spatial data management, spatial data processing, inquiry and analysis of spatial data, spatial data visualization, ArcGIS and geographic information system engineering.

### **01537 Architecture Perspective Shadow**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Elective

**Prerequisites:** None

**Description:**

Architecture Perspective Shadow is an elective course for majors of civil engineering. It aims to enable students to master fundamental knowledge of Architectural Charting. The contents of this course are projection alteration, Curves and Surfaces, intersecting lines on surface, architectural morphology, Axonometric projections, projections with heights, basic methods of drawings in construction shadow, shadow of plane constructions, structures of curved construction, Vanishing point methods, selection of architectural perspectives, Panoramic perspectives, Practical painting in scenograph, three-point perspective, inverted image and virtual image and computer drawings.

### **01538 Drawing and Post-processing Architectural Effects**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Elective

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**Prerequisites:** Engineering Graphics (1), Engineering Graphics (2)

**Description:**

Drawing and Post-processing Architectural Effects is an elective course for majors of civil engineering. It requires students to master basic methods of architectural effect drawings, use 3ds max software to make simple indoor and outdoor effect drawings, and in the meanwhile, and develop their creativity and imagination. Main contents are 3ds max6 modeling environment, 3ds max6 modeling basics, scene setting of effect drawings, rendering and post-processing, and case studies.

### **01539 Introduction to Preventing and Reducing Natural Disasters**

**Credits:** 1.5

**Credit hours:** 24

**Prerequisites:** None

**Description:**

Introduction to Preventing and Reducing Natural Disasters is an elective course for students of civil engineering. It aims to enable students to master basic theories and methods of prevention and reduction of natural disasters. The contents of this course are counter measurement of earthquake and quakeproof, seismic response analyses and checking computation of quakeproof, isolation and energy dissipation design, design for wind and fire disaster, landslide, sedimentation, prevention and control of mudslide, and prevention of explosion disasters.

### **01541 Wind Engineering for Buildings**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Elective

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**Prerequisites:** Structural Mechanics, hydromechanics

**Description:**

Wind Engineering for Buildings is an elective course for majors of civil engineering. It aims to enable students to master basic theories and methods of wind engineering on buildings. The contents of this course are wind disasters, reviews of wind engineering achievement, wind tunnel experiments, characteristics of low-level wind and aerodynamics of bluff body, average wind characteristics of atmospheric boundary layer, average wind loads on structures, static and dynamic structures of wind-wind loads, structure of wind-induced cross-wind, building model wind tunnel tests, computational wind engineering, high-rise structures, static and dynamic wind loads, and static and dynamic wind loads of large-span roof structures.

## **01542 Blast and Protection Engineering**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Elective

**Prerequisites:** None

**Description:**

Blast and Protection Engineering is an elective course for majors of civil engineering. It aims to enable student to master fundamental principles and rules of blast and protection engineering, structure concept design and assessment of blast loading. The contents of this course are introduction to blast and structural anti-detonation design, blast theory and blast loading, structure dynamic response of explosion, progressive collapse and reinforced concrete anti-detonation design.

## **01543 Structural Vibration Control of Projects**

**Credits:** 1.5

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**Credit hours:** 24

**Prerequisites:** None

**Description:**

Structural Vibration Control of Projects is an elective course for civil engineering. It aims to enable students to master basic theories and methods of project structural vibration control. The contents of this course are basic knowledge of vibration, vibration of SDOF systems, vibration of two-degree freedom control systems, multi-degree freedom systems, elastomeric vibration and revolving body vibration.

## **01545 Introduction to Intelligent Computing of Structural Engineering**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Elective

**Prerequisites:** Structural Mechanics, Structural Dynamics

**Description:**

Introduction to Intelligent Computing of Structural Engineering is an elective course for majors of civil engineering. It aims to enable students to master genetic algorithms, Artificial Neural Networks and Fuzzy calculation, and their applications in construction engineering modeling, inspection and control. The contents of this course are genetic algorithm and its applications in construction engineering, artificial neural networks and applications in construction engineering, and intelligent control algorithms and applications in construction engineering.

## **01547 Bridge Aesthetics**

**Credits:** 1.5

**Credit hours:** 24

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**Categories:** Elective

**Prerequisites:** All compulsory courses of Bridget Engineering

**Description:**

Bridge Aesthetics is an elective course for majors of bridge engineering. It aims to cultivate students' knowledge and appreciation of bridge structures, and enable them to lay equal emphases on designs of bridge structure and basic philosophy and qualification of bridge aesthetics. Main contents are history of development of bridge architecture, philosophical fundamentals, basic principles and development of bridge aesthetics, sessions of bridge and environment, structural aesthetics design of girder bridges, arch bridges and cable-stayed bridges.

## **01549 Road Traffic Planning**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Elective

**Prerequisites:** None

**Description:**

Road Traffic Planning is an elective course for majors of civil engineering. It aims to enable students to understand operating rules of people, automobile and goods, and work out road network in accordance with operating rules by mathematic tools. The contents of this course are road construction foundation, data collection and its processing, operating demand analyses, transportation supply analyses, comprehensive appraisal of road traffic planning and case studies.

## **01550 Road Interchange Design**

**Credits:** 2

**Credit hours:** 32

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**Categories:** Elective

**Prerequisites:** Road Survey and Design

**Description:**

Road Interchange Design is an elective course for students of civil engineering. The purposes of this course are to enable students to understand basic theories and methods of roads, and plans and design of city roads interchange, and master processes and methods of interchange design. This course covers introduction to interchange, planning of interchange, type-selection design of interchange, comprehensive evaluation of interchange, design of ramp, and alignment design of ramp.

## **01551 Traffic Engineering Facility**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Elective

**Prerequisites:** None

**Description:**

Traffic Engineering Facility is an elective course for majors of civil engineering. It aims to enable students to understand design concepts and ranges of applications. The contents of this course are traffic engineering facilities, rules of general plans for traffic facilities, characteristics of road traffic, demand analyses in traffic and general plans for traffic engineering.

## **01553 Advanced Pile Foundation Design Theory**

**Credits:** 1.5

**Credit hours:** 24

**Prerequisites:** None

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**Description:**

Advanced Pile Foundation Design Theory is an elective course for majors of civil engineering. It aims to enable students to master fundamental concepts and computer calculation. The contents of this course are pile engineering, pile foundation survey, compressive pile properties, pile settlement calculation, tension pile properties, level pile properties, pile design, pile foundation work, support pile, pile engineering tests and inspections.

**01554 Underground Tunnel Inspection and Control**

**Credits:** 1.5

**Credit hours:** 24

**Prerequisites:** None

**Description:**

Underground Tunnel Inspection and Control is an elective course for majors of civil engineering. It aims to enable students to master basic theories and application of inspection and control of underground tunnels. The contents of this course are classifications of tunnels, pre-consolidation cost overrun protection, excavation, waterproof and drainage, construction control, construction measurement, quality inspection of concrete lining, ventilation detection and lighting tests.

**01555 Deep Foundation Pit Engineering**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Elective

**Prerequisites:** Soil Mechanics, Basic Engineering

**Description:**

Deep Foundation Pit Engineering is an elective course for majors of civil



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engineering. The aims of this course are to enable students to learn independent thinking and develop their abilities to handle issues in deep foundation pit design, construction and engineering accidents. Main contents are basic concepts, characteristics and design requirements of deep foundation pit engineering, theories, soil pressure calculation of deep foundation pit supporting forms, piling, design and calculation soil nailing wall, diaphragm walls, anchored retaining walls, double-row piles, groundwater control and earth excavation methods.

### **01556 Introduction to Underground Engineering**

**Credits:** 1.5

**Credit hours:** 24

**Prerequisites:** None

**Description:**

Introduction to Underground Engineering is an elective course for majors of civil engineering. It aims to enable students to understand principles and practical methods of underground engineering. The contents of this course are basic patterns of underground engineering, the application of underground engineering, the fundamental techniques of underground engineering, and planning, construction and economic management of underground engineering.

### **01558 Slope and Foundation Pit Support**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Soil Mechanics, Foundation Engineering

**Description:**

Slope and Foundation Pit Support is an elective course for students of civil

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engineering. The purposes of this course are to enable students to understand general forms, features and applicability of general slope and foundation pit retaining and protection structure; develop their abilities to apply knowledge learnt into practical work. This course covers design calculation of pile trestle and diaphragm wall, design and calculation of soil nailing wall, design and calculation of anchored bolt retaining wall, design and calculation of slide pile, groundwater control methods, and engine-driven methods.

## **01560 Steel Structured Building Design**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Design Principle of Steel Structures

**Description:**

Steel Structured Building Design is an elective course for students of civil engineering. The purposes of this course are to enable students to master common theories of steel structures and design single storey light steel plant, large-span steel structures and multi-storey and high-rise steel buildings. The main contents of the course cover steel-concrete composition structure, multi-storeyed and high-rise steel structure large-span steel structures, portal strut light building structures, and design methods of steel structures.

## **01561 Construction Technology**

**Credits:** 3

**Credit hours:** 52

**Categories:** Compulsory

**Prerequisites:** None

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**Description:**

Construction Technology is a compulsory course for students of constructional engineering. The purposes of this course are to enable students to master basic content and formation methods of construction scheme, have the ability to formulate quality guarantee measures and work safety practices for general building construction methods, familiarize construction factors affecting construction costs, understand the connection of professional knowledge among construction organizational management, bidding, and project supervision within the course. The contents of this course cover construction technology and schemes of various major projects, selection and application of relevant construction machinery, the development tendency of new material, technologies and processes, and basic theories, knowledge and construction methods of construction technology in various trades and projects.

**01562 Structure Test Technology****Credits:** 2**Credit hours:** 32**Categories:** Elective**Prerequisites:** None**Description:**

Structure Test Technology is an elective course for students of civil engineering. The purposes of this course are to enable students to master basic methods and skills of structural test to meet demands of structural design, construction, test appraisal and scientific researches of civil engineering. The main contents of the course cover designing principles of structural tests, structure static load tests, structural dynamic tests, non-defect testing and identification of building structures, structural model tests, experiment data analyses and processes.

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## **01563 Bridge and Culvert Hydrology**

**Credits:** 1.5

**Credit hours:** 16

**Categories:** Elective

**Prerequisites:** Theory of Probability and Mathematical Statistics A, Hydraulics

**Description:**

Bridge and Culvert Hydrology is an elective course for students of civil engineering. The purposes of this course are to enable students to master basic theories of hydraulics, calculation methods of water power and familiarize collection, arrangement and application of hydrological data. The main contents of the course cover river runoff, hydrologic statistics, basic eigenvalue of rivers, random events, random variable, design frequency and statistical parameter calculation.

## **01565 Computer Methods of Bridge Structure Analysis**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Computer Methods of Bridge Structure Analysis is an elective course for students of civil engineering. The purposes of this course are to enable students to master common application theories of calculation in bridge engineering design, write some simple programs in calculations of bridge design and understand basic functions and operation steps of bridge calculation software. The main contents of the course cover finite element analyses of structures, linear systems solving method, Cholesky methods, the operation of Fortran power stations, structural analyses and thematic analyses.

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## **01566 Road Engineering Detecting Technology**

**Credits:** 2

**Credit hours:** 40

**Categories:** Elective

**Prerequisites:** Subgrade and Pavement Construction, Road Survey and Design, Civil Engineering Materials

**Description:**

Road Engineering Detecting Technology is an elective course for students of civil engineering. The purposes of this course are to enable students to understand basic theories and methods of road engineering test detection, and develop their abilities to apply knowledge learnt into practices. This course covers soil tests, tests of subgrade materials, tests of asphalt and asphalt mixture, tests of cement concrete, field detection of subgrade and pavement, geometric size detection of road, tests of communication and environmental protection, and test data processing.

## **01567 Anti-Seismic Highway Engineering**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:**

**Description:**

Anti-Seismic Highway Engineering is an elective course for students of civil engineering. The purposes of this course are to enable students to master basic knowledge of anti-seismic design of road engineering, principles for anti-seismic design and structural anti-seismic design methods, and thus lay a solid foundation for further studies. The main contents of the course cover basic knowledge of

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earthquakes, anti-earthquake structural for road projects, anti-earthquake structural for roads, project and seismic foundation, seismic response analyses for road engineering road and anti-seismic checking, and isolation structures damping control technology.

## **01568 Construction Parasismique**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:**

**Description:**

Construction Parasismique is an elective course for students of civil engineering. The purposes of this course are to enable students to understand anti-seismic design methods for common building structures and thus lay a solid foundation for future work. The main contents of the course cover seismic design theories based on earthquake response spectrum, basic requirements of seismic design of buildings, anti-seismic methods of brick-concrete structures, over-long concrete frame structures and single-storey industrial buildings, analyses of structural seismic responses and anti-seismic calculation, and anti-seismic design of structural design of multiple-storey and high-rise steel structures.

## **01569 Construction Organization and Budget**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Architectural Design Construction, Construction Material, Engineering Structure

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**Description:**

Construction Organization and Budget is an elective course for students of civil engineering. The purposes of this course are to enable students to understand engineering cost, content composition, calculation methods, master organizational principles of flow construction, drawings of activity-on-arrow networks and calculation of time parameter. The main contents of the course cover project cost forms and calculation, pricing bases of engineering, calculation methods of quantity of engineering, engineering bill pricing, settlement of project cost, final accounts and building flow construction.

**01570 Wind and Earthquake Resistant of Bridges****Credits:** 2**Credit hours:** 32**Categories:** Elective**Prerequisites:** Structural Mechanics, Road Engineering, Bridge Engineering, Outline of Civil Engineering**Description:**

Wind and Earthquake Resistant of Bridges is an elective course for students of civil engineering. The purposes of this course are to enable students to understand bridge seismic and wind-resistant design. The main contents of the course cover seismic damage of bridges, basic knowledge of earthquakes; principles, calculation theories and requirements of earthquake resistant of bridge; procedures of earthquake resistant design of bridge; basic principles and methods of bridge seismic ductility; theories, installation and application of seismic mitigation and isolation technique; wind-resistance characteristics; aero elasticity; wind tunnel experiment; equivalent wind load and anti-wind concept design of bridges.

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## **01572 Construction Technology for Underground Engineering**

**Credit:** 2

**Hours:** 32

**Category:** Elective

**Prerequisites:** Engineering geology, Underground Structure

**Description:**

Construction Technology for Underground Engineering is an elective course for students of civil engineering. The purposes of this course are to enable students to understand up-to-date development and new trends of construction technology for underground engineering, familiarize commonly used construction methods in underground construction, and develop their abilities to organize the whole operating procedures during underground construction, and to conduct construction management design. This course covers drilling and blasting methods, tunnel boring methods, shield tunnelling methods, pipe jacking methods and immersed tube methods, freezing methods, grouting methods, ventilation, and power supply.

## **01575 Project Financing and Investment**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Economics, Economic Law, Engineering Economics

**Description:**

Project Financing and Investment is an elective course for students of civil engineering. It aims to enable students to master fundamental knowledge of project financing and investment. The contents of this course are project investment management, investment decision, investment appraise, financing management, financing assurance and investment and financing risk management.



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## **01576 Introduction to Property Management**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Introduction to Property Management is an elective course for majors of engineering management. It aims to enable students to understand the reason, ways of the implementation of property management and the solutions to its conflicts and disputes. Main contents include the introduction to property management, financial management of property management companies, property management and community culture, service quality of property management, intelligentization of property management, introduction to property management laws and property management in foreign countries.

## **01577 International Construction Management**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:**

**Description:**

International Construction Management is an elective course for students of engineering management. The purposes of this course are to enable students to understand international project bidding, international project contract, international engineering (risk) management. The main contents of the course cover international project contracting, international project bidding, international project contract,

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international project financing, international risk management, international project risk-sharing, venture prevention and countermeasures, risk utilizing and risk transfer.

## **01578 Building Decoration Project and Budget**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Building Decoration Project and Budget is an elective course for majors of civil engineering. It aims to enable students to master fundamental theories and methods of building decoration projects and its budget. The contents of this course are fixed consumption in building decoration projects, personnel, materials of construction decoration, budgets of construction cost and quantitative computation of construction decoration.

## **01580 Financial Management**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Management, Law of Economy, Financing and Investment of Project

**Description:**

Financial Management is an elective course for students of civil engineering. The purposes of this course are to enable students to understand basic theories of financial management, and develop their ability to apply knowledge learnt into practices. This course covers introduction to financial management, financial analyses, investment decision-making methods, financing decision-making method, profit distribution

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methods, management of circulating fund, and financial planning and control.

## **01582 Construction Enterprise Management**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Construction Enterprise Management is an elective course for majors of civil engineering. It aims to enable students to master fundamental theories, knowledge and methods of construction enterprise management. The contents of this course are construction enterprises, construction enterprise concepts, management organization of construction enterprises, culture of construction enterprises, strategic management of construction enterprises, business forecasting and decision-making in construction enterprises, contract management of construction enterprises, planning management of construction enterprises, technological management of construction enterprises, quality management of construction enterprises, HR management of construction enterprises, mechanic equipment and material management of construction management, and financial cost management of construction enterprises.

## **01584 Construction Law**

**Credits:** 2

**Credit hours:** 34

**Categories:** Elective

**Prerequisites:** Engineering Cost, Construction Consultant, Building Architecture, Architectural Structure

**Description:**

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Construction Law is an elective course for students of engineering management. The purposes of this course are to enable students to master basic knowledge of construction law, foster legal awareness of construction law and handle relevant legal issues in constructions by applying knowledge of construction law. The main contents of the course cover construction laws, bidding laws, production safety laws, licensing regulations, contract laws, treatment of disputes in construction projects, legal responsibility of construction projects, relevant laws and regulations of engineering construction, basic procedures of engineering construction, city planning law, construction contract management, city immovable administration laws, engineering survey and design laws.

## **01585 Engineering Accident Analysis and Countermeasures**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Construction Technology and Management

### **Description:**

Engineering Accident Analysis and Countermeasures is an elective course for students of engineering management. The purposes of this course are to enable students to master types of various structural accidents and cause analysis, foster students' abilities to think independently. The main contents of the course cover types and characteristics of construction work accident, analyses of foundation engineering accidents, types of concrete structural accidents and cause analyses, timber structure accident analyses and countermeasures, steel structure accident analyses and countermeasures, structures accident analyses and countermeasures, fire accident analyses and countermeasures.

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## **01586 Calculation and Optimization of Building Environment and Services Engineering**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Calculation and Optimization of Built Environment and Services Engineering is an elective course for majors of Building Environment and Equipment Engineering. It aims to enable students to master definitions and common algorithm of common computer calculation. The contents of this course are common Computational Methods, computer simulation of building heat and moisture processing, and CAD of HVAC.

## **01588 Introduction to Built Environment and Equipment Engineering**

**Credits:** 1

**Credit hours:** 16

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Introduction to Built Environment and Equipment Engineering is a compulsory course for students of building environment and equipment engineering. The purposes of this course are to enable students to master concepts of temperature, moisture, radiation, air flow, air quality, noises, and sound effects of building environment, i.e., mechanisms of building environment, supplying heat, ventilation, air-conditioning equipment, understand working mechanisms affecting major equipment of heating,

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ventilation and air conditioning in building environment. The contents of this course cover working mechanisms, systematic composition and classification of heating, ventilation, air conditioning and other systems and equipment.

## **01589 Construction Organization and Engineering Budget**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Construction Organization and Engineering Budget is an elective course for students of civil engineering. The purposes of this course are to enable students to understand engineering costs, content composition, calculation methods, master organizational principles of flow construction, drawings of activity-on-arrow network and the calculation of time parameter. The main contents of the course cover project cost form and calculation, pricing bases of engineering, calculation methods of quantity of engineering, engineering bill pricing, settlement of project costs, final accounts and building flow construction.

## **01590 Gas Transmission and Distribution Projects**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Hydromechanics, Heat Transfer Theory, Fluid Transmission and Distribution Network

**Description:**

Gas Transmission and Distribution Projects is an elective course for students of

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civil engineering. It aims to enable the students to master fundamental technologies and theories of fuel gas transmission, storage and distribution. The contents of this course are classifications, quality of fuel gas, fuel gas's co-ordination of supply and demand in cities and towns, long-distance transmission systems of fuel gas, pipe-networks of fuel gas transmission in cities and towns, hydraulic calculation of gas pipe lines, hydraulic regime of gas pipe lines, regulator and metering of fuel gas, air pressure transmission of fuel gas, storage of fuel gas and liquefied petroleum gas (LPG) supply.

## **01591 Construction Technology and Organization of Building Equipment**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** HVAC Engineering, Heating Engineering, Air-conditioning and Refrigeration, Boiler and Boiler House Equipment, Fluid Supply Network

### **Description:**

Construction Technology and Organization of Building Equipment is a core specialized course for students of Construction Environment and Equipment Engineering. The purposes of this course are to enable students to master basic laws, common construction techniques and advanced methods of construction organization management, develop students' abilities to apply national standards, construction norms and inspection norms to practical projects proficiently. The contents of this course cover common materials, material processing and jointing, installation of indoor heating systems, installation of outdoor heating pipe work, installation of boilers and attached equipment, construction of ventilation air-conditioning systems, installation of refrigeration equipment, construction of building water supply and

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drainage, construction organization and design and construction management in installation enterprises.

### **01592 Sustainable Building Technology (A)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Sustainable Building Technology (A) is an elective course for students of budgeting environment and equipment engineering. The purposes of this course are to enable students to understand significance of sustainable building, familiarize all professional knowledge of sustainable building environment. The main contents of the course cover motivation, theories and application of sustainable buildings, climate and sustainable building, integration design sustainable building, indoor air quality, sustainable urban planning, passive building technology, renewable energy source, intelligent building, and analyses of building integration systems.

### **01593 Sustainable Building Technology (B)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Sustainable Building Technology (B) is an elective course for students of budgeting environment and equipment engineering. The purposes of this course are to enable students to understand significance of sustainable buildings, familiarize all



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professional knowledge of sustainable building environment. The main contents of the course cover architectural process control, energy performance contracting, green construction, operation, green building materials, maintenance, renewable energy resources, building simulation, performance of the architectural systems, and applications of life cycle cost analysis in buildings.

## **01601 Water Supply and Drainage Engineering Design and Construction Plan**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Elective

**Prerequisites:**

**Description:**

Water Supply and Drainage Engineering Design and Construction Plan is an elective course for students of water supply and drainage engineering. The purposes of this course are to enable students to work in the field of water supply and drainage engineering and construction, and foster students' abilities to analyze and solve problems. The main contents of the course cover construction method and selection foundation of water supply and drainage engineering and construction; performance index of conventional material in drainage constructions; construction organizations, construction methods, technical standards, measurement methods, installation methods and quality detection methods of conventional construction category in water supply and drainage engineering and construction.

## **01603 Industrial Ventilation**

**Credits:** 2

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**Credit hours:** 32

**Categories:** Elective

**Prerequisites:**

**Description:**

Industrial Ventilation is an elective course for students of building environment and equipment engineering. The purposes of this course are to enable students to understand ventilation modes of ventilation systems; overall ventilation and high efficiency exhaust hood; master methods of ventilation and dusting, purification methods of dust collector and noxious gas; familiarize methods of air heating and structures, calculation and installation of air heaters. The main contents of the course cover industrial hazardous substances, ventilation modes, overall ventilation, local exhaust hood, purification of noxious gas; natural ventilation, partial air supply and heat insulation; and design calculation of air duct of ventilation systems.

## **01605 Foundation of Thermodynamics for Built Environment and Equipment Engineering**

**Credits:** 3.5

**Credit hours:** 56

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Foundation of Thermodynamics for Built Environment and Equipment Engineering is a compulsory course for students of building environment and equipment engineering. The purposes of this course are to enable students to master ideas and methods of analyzing energy conversion accurately, develop their interest in solving practical problems related to thermal power. The contents of this course cover basic concepts, definitions, laws of thermodynamics, qualities of ideal gas and real gas, the second law of thermodynamics, entropy equations of thermodynamics,

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exergy analysis, Maxwell equations, chemical heat, all kinds of practical power equipment and cycle, and analyses of equipment and cycle by applying thermodynamics theories.

## **01606 Architectural Mechanics (B)**

**Credits:** 4

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Architectural Mechanics (B) is a compulsory course for students of building environment and equipment engineering. The purposes of this course are to enable students to master basic knowledge, theories and skills of architectural mechanics, and lay a solid foundation for further courses. The contents of this course cover balance of external force (load and constraint reaction) of bar structure (or constructional elements), distribution patterns of internal force (axial force diagrams, shearing force diagrams and bending moment diagrams), calculation methods and distribution of stress, concept of strain, calculation of deformation, and mechanical performance of materials.

## **01608 Roadbed Engineering**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:**

**Description:**

Roadbed Engineering is an elective course for students of civil engineering. The

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purposes of this course are to enable students to master basic theories and knowledge of roadbed, and solve practical problems of pavement engineering. The main contents of the course cover development situation of road engineering, deformation and force bearing of roadbed soil; road disease prevention and treatment; analytical methods of slope stability; earth-retaining wall design, roadbed and surface drainage design, gravel pavement, inorganic binder stabilized road pavement, asphalt pavement, asphalt pavement design, pavement maintenance and management.

### **01609 Conceptual Design and Aesthetics of Bridges**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:**

**Description:**

Conceptual Design and Aesthetics of Bridges is an elective course for students of civil engineering. The purposes of this course are to enable students to develop creativity, aesthetic and hands-on abilities. The main contents of the course cover aesthetic thought and bridge, creation of aesthetics of bridge, basics for bridge model design, conceiving method of bridge design, modeling design of main functional units of bridges, applications of bridge landscape, landscape design and bridge shaping, evaluation on bridge and case studies.

### **01617 Rock Dynamics and Anti-seismic Engineering**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

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**Prerequisites:** None

**Description:**

Rock Dynamics and Anti-seismic Engineering is an elective course for students of civil engineering. It aims to enable students to master basic theories and methods of rock dynamics and anti-seismic engineering. The contents of this course are dynamic strength of the soil, dynamic pore water pressure, liquefaction of saturated sand soil, soil dynamic models, analyses of deposit dynamic responses, dynamic stability analysis of soil, rock mechanical properties, anti-seismic design for sub grade, anti-seismic structure design, structural seismic response, Seismic Design of Concrete Structures, bridge seismic design, Seismic design for underground space and isolation and structural design of energy dissipation.

## **01618 Engineering Evaluation**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Building Construction, Engineering Structure, Construction Material

**Description:**

Engineering Evaluation is an elective course for majors of civil engineering. It aims to enable students to understand definitions, elements, computational methods, fixed principles, budget base price and base of engineering costs. The contents of this course are elements of engineering cost, fixed quota pricing of engineering cost, computational methods of engineering cost bill of quantities, and computation of quantities.

## **01957 Civil Engineering Survey**

**Credits:** 3

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**Credit hours:** 56

**Categories:** Elective

**Prerequisites:** None

**Description:**

Civil Engineering Survey is an elective for students of civil engineering. The purposes of this course are to enable students to develop their practical skills, knowledge and innovative capacity, and realistic and vigorous attitudes, diligence, and team spirits, bring students' initiatives into full play, and thus lay a solid foundation for their future engineering investigation, design, construction and management. The contents of this course cover basic knowledge and theories of measurement, construction and utilization of basic measurement equipment, measurement errors, treatment of measurement data, basic contents and methods of construction measurement, deformation monitoring, and acceptance survey.

## **01962 Construction Materials**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Elective

**Prerequisites:**

**Description:**

Construction Materials is an elective course for students of water supply and drainage engineering. The purposes of this course are to enable students to master basic components of conventional building materials in engineering construction and applicable methods of technical performance, qualification test procedures, and to correctly choose and use construction materials according to features of engineering construction projects. The main contents of the course cover basic properties of construction materials, air-hardening binding inorganic material, cement, concrete, building mortar, wall materials and roof materials; thermal insulation, sound

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absorption, and decoration materials.

### **02003 Art (3)**

**Credits:** 4

**Credit hours:** 88

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Art (3) is a compulsory course for majors of landscape architecture. It aims to enable students to master basic knowledge of colors in painting, understand aesthetic forms, space aesthetic, and emotions in colors. This course covers development of water color painting, features of water color painting, procedures of water color painting, tools used in water color painting, appreciation of classical water color painting, dry and wet drawing methods, still life sketching in water colors, views of landscape painting, principles of composition, composition of sketching, and landscape sketching with small buildings.

### **02031 Expression Techniques**

**Credits:** 4

**Credit hours:** 88

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Expression Techniques is a compulsory course for majors of landscape architecture. It aims to enable students to master basic knowledge of performance techniques and their characteristics, and develop their abilities to show a sense of space, environment and materials. This course covers meanings of architectural

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paintings, perspective of architectural paintings, colors in architectural paintings, background in architectural paintings, artistic techniques in architectural paintings, and performance techniques of architectural paintings.

## **02040 Art History**

**Credits:** 2.5

**Credit hours:** 40

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Art History is a compulsory course for majors of artistic design. It aims to enable students to master basic knowledge of art history, understand different characteristics of different schools of art. This course covers art in prehistoric and pre-Qin period, the Qin and Han Dynasty, the Wei and Jin Dynasty, the Southern and Northern Dynasties, the Sui and Tang Dynasty, the Five Dynasties, the Song and Yuan Dynasty, the Ming and Qing Dynasty, the modern times, the primitive and ancient times, the Medieval Europe, art of Europe in the eighteenth and nineteenth centuries, art of Europe and the U.S in the nineteenth and twentieth century.

## **02041 Building Construction (A)**

**Credits:** 4

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** Constructional Engineering Drawing, Building Materials

**Description:**

Building Construction (A) is a compulsory course for students of constructional engineering. The purposes of this course are to enable students to master basic



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theories and methods of civil and industrial building design, carry out preliminary design for buildings, understand theories and methods of general civil and industrial building construction through learning building construction, and ultimately develop preliminary capacity to design schemes for small-scale civil buildings and constructional drawings. The contents of this course cover main contents and design procedures of architectural design, two-dimensional, three-dimensional and profile design for general civil buildings, all constituents of building constructions for civil buildings, and basic knowledge related to high-rise buildings and building energy conservation.

## **02056 Architectural Photography**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Compulsory

**Prerequisites:** None

### **Description:**

Architectural photography is a compulsory course for majors of artistic design. It aims to enable students to master basic techniques, principles and applications of photography, develop their abilities of architectural photography by applying artistic methods. This course covers selecting subjects, designing, composition, capturing the moment by light, uses and maintenances of cameras, uses of diaphragm, shutter, focusing, depth of field, photometry, exposure, and PHOTOSHOP post-processing techniques.

## **02094 Principles of Public Building Design**

**Credits:** 2

**Credit hours:** 32

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**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Principles of Public Building Design is a compulsory course for majors of architecture and urban planning. It aims to enable students to understand general features of public architectures, master principles and methods of public architecture design, thus laying a solid theoretical foundation for architecture design. Main contents are fundamental constitutes of architecture, characteristics and methods of cluster organization, functional relation and space organization of public architecture, types and characteristics of structures, meanings and calculations of technological economic indicators, and principles and methods of public architecture design.

## **02107 Sketch (1)**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Sketch (1) is a compulsory course for majors of artistic design. It aims to enable students to master basic theories and performance techniques of sketch forms, develop their aesthetics, and abilities to understand, express and create. This course covers introduction to sketches, basic knowledge of portrait-sketching, plaster statues drawn from life and its techniques, plaster geometry drawn from life, still life paintings, architectural and natural landscape, and sketch design.

## **02108 Sketch (2)**

**Credits:** 3

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**Credit hours:** 80

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Sketch (2) is a compulsory course for majors of artistic design. It aims to enable students to master basic theories and performance techniques of sketch, develop students' aesthetics, and abilities to understand, express and create. This course covers methods of sketch design, training for drawing accurately, training for ability of structural analyses, sketches of space, training for imagination, and training of light and shadow.

## **02122 Color (1)**

**Credits:** 3

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Color (1) is a compulsory course for majors of artistic design. It aims to enable students to apply colors creatively in life painting, develop their abilities to summarize and express complicated colors. This course covers basic knowledge of colors, gouache painting, watercolor painting from life, colour design, color contrast, harmonizing colors and psychological effects, landscape painting from life, flower painting from life, and architectural painting from life.

## **02127 Foundation of Environment Art Design (1)**

**Credits:** 4

**Credit hours:** 80

**Categories:** Compulsory

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**Prerequisites:** None

**Description:**

Foundation of Environment Art Design (1) is a compulsory course for majors of artistic design. It aims to enable students to master basic knowledge of urban planning, landscape design, gardening, and ecological protection. This course covers human and environment, interior environment design, exterior environment design, color design in exterior environment, design of lighting in exterior environment, greening and waterscape design, decorative art indoor and outdoor, prospects of environmental art, and case studies.

**02146 Color (2)**

**Credits:** 3

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** Colour (1)

**Description:**

Color (2) is a compulsory course for majors of artistic design. It aims to enable students to use colours creatively in life painting, develop their abilities to summarize and express complicated colors. This course covers reviews of students' homework in holidays, lectures about theories of color, indoor practices, trainings related to basic knowledge of colors, relationship between colors and pigment, control of moisture contents in color, relationship between light and colors, trainings of using contrast colours, contrast between warm colors, uses of harmonizing colors, and landscape paintings from life.

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## **02169 Architectural Modeling**

**Credits:** 1

**Credit hours:** 16

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Architectural Modeling is a compulsory course for majors of artistic design. It aims to enable students to familiarize materials of modeling, master basic methods and techniques in modeling, and develop their abilities to practise, imagine and express. This course covers varieties and materials of tools used in modeling, modeling, spatial component models, module models, model display (paper models, organic glass models, and hectograph models), base plate and background of models, and model photography.

## **02172 Foundation of Environment Art Design (2)**

**Credits:** 4

**Credit hours:** 80

**Categories:** Compulsory

**Prerequisites:** Foundation of Environment Art Design (1)

**Description:**

Foundation of Environment Art Design (2) is a compulsory course for majors of artistic design. It aims to enable students to master basic knowledge of urban planning, landscape design, gardening, and ecological protection. This course covers categories of landscape architecture, elements defining landscape architecture categories, environmental architecture and planning consciousness, layouts of roads, sports and entertainment facilities, environmental standards, water supply and sewage treatment, landscape architectural design, mapping, energy design in landscape architecture,

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design of gardening, and modeling.

## **02208 Computer Aided Design (A)**

**Credits:** 2.5

**Credit hours:** 56

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Computer Aided Design (A) is a compulsory course for majors of artistic design. It aims to enable students to master basic techniques in computer graphics, develop their abilities to design and draw construction maps. This course covers basic architectural components of AutoCAD, two-dimensional drawing, three-dimensional drawing and drawing of simple graphics, editing objects by applying commands of modifications, drawings of three-dimensional meshes and objects, and TArch three-dimensional drawings.

## **02209 Computer Aided Design (B)**

**Credits:** 2.5

**Credit hours:** 56

**Categories:** Compulsory

**Prerequisites:** Computer Aided Design (A)

**Description:**

Computer Aided Design (B) is a compulsory course for majors of artistic design. It aims to enable students to master basic techniques in computer graphics, develop their abilities to design and draw construction maps. This course covers introduction of architectural drawings, drawings of standard graphic and common graphic in

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architecture, information of architecture in architectural drawings, creating dimension label, plane graph, stereogram, and sectional graphs in architectural drawings, and detailed drawings in architecture.

## **02215 Expression Techniques for Environment Art Design**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Expression Techniques for Environment Art Design is a compulsory course for majors of artistic design. It aims to enable students to master different qualities of materials, different performance techniques, and techniques in effect drawings, develop students' abilities of drawings, abstract thinking and communication. This course covers design performance, perspective drawing, colour-shaping space, hue and life arrangement, shadow and projection, performance of material quality, common performance techniques in graphic design, and graphic design by computers.

## **02315 Introduction to Building Technology**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Introduction to Building Technology is a compulsory course for majors of architecture. It aims to enable students to understand related techniques in architectural design, master origins and development of architectural techniques,

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develop students' correct architectural views. This course covers introduction to architectural techniques, components of architectural techniques, varieties of architectural structure and its requirements, masonry structures, frame structures, shear wall structures, introduction to architectural physics environment, architectural light environment and vision, natural lighting and artificial lighting in architecture, weather and architectural thermal environment, building heat preservation and heat insulation, basic knowledge of acoustic environment, introduction to architectural equipments, heating and ventilating air-conditioner systems, architectural water supply systems and sewerage systems, electrical systems in architecture, design and assessment of green buildings.

## **02320 Architectural Design (C1)**

**Credits:** 4

**Credit hours:** 80

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Architectural design (C1) is a compulsory course for majors of artistic design. It aims to enable students to master correct methods of design, and develop a correct view of design. This course covers buildings and architecture, aesthetic knowledge in architecture, basic forms of architecture and sculpting methods, architectural expressions, technical lettering, architectural painting, modeling, introduction to architectural design methods, forms and space environment, functions, materials, light and shadow, structure and tectonics.

## **02321 Architectural Design (C2)**

**Credits:** 4



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**Credit hours:** 80

**Categories:** Compulsory

**Prerequisites:** Architectural design (C1)

**Description:**

Architectural design (C2) is a compulsory course for majors of artistic design. It aims to enable students to master basic principles, programs and design methods, develop students' senses of space, function and environment. This course covers introduction to villa design, function division, and analyses of functional units, plane layouts and streamline analyses of villas, space environment design of villas, appreciation of classical design of villas, and public architectural design.

## **02373 Architectural History (A)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Architectural History (A) is a compulsory course for majors of artistic design. It aims to enable students to understand achievements and developments in architectural history, master the characteristics and styles of different types of architecture, develop their abilities to analyze and evaluate buildings. This course covers introduction to development of ancient buildings, urban architecture, palace, temple, mausoleum and religious architecture, residence and settlement, garden and landscape construction, features and evolution of ancient wooden structure buildings, architecture in modern China, architecture in contemporary China (1949~now), case studies (analyses of traditional buildings, analyses of structures related to Chinese traditional bracketing).

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## **02374 Architectural History (B)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Architectural History (A)

**Description:**

Architectural History (B) is a compulsory course for majors of artistic design. It aims to enable students to understand origins, development and features of western architecture, master backgrounds of major architectural schools and trends in different times and their theories, classics and important figures, and develop their abilities to think independently. This course covers introduction, ancient Egyptians architecture, ancient Greek architecture, ancient Roman architecture, Byzantine architecture, romanesque architecture, Gothic architecture, architecture in Renaissances, baroque architecture, French classical architecture, restoration trends, architectural schools and trends, and pluralism after the Second World War.

## **02501 Introduction to Urban Design**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Introduction to Urban Design is a compulsory course for majors of urban planning. It aims to enable students to master basic concepts of urban design, understand history of urban design and emergence of modern city design. This course covers introduction to urban design, reviews of urban design history, overall urban form design, construction of urban space, typical urban space design, applications and

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practices of urban design, design of urban street space, design of urban square space, design of urban green space, and design of urban environmental facilities.

## **02545 History of Western Architecture**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

History of Western Architecture is a compulsory course for majors of architecture. It aims to enable students to understand origins, development and features of western architecture, master backgrounds of major architectural schools and trends in different times and their theories, classics and important figures, and develop their abilities to think independently. This course covers introduction, ancient Egyptians architecture, ancient Greek architecture, ancient Roman architecture, Byzantine architecture, romanesque architecture, Gothic architecture, architecture in Renaissances, baroque architecture, French classical architecture, restoration trend, architectural schools and trends, and pluralism after the Second World War.

## **02554 Garden Design**

**Credits:** 2.5

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Garden Design is a compulsory course for majors of artistic design. It aims to

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enable students to familiarize classifications of landscape plants and ecological characteristics of common landscape plants, master basic methods and requirements of planting, and develop students' abilities of garden design. This course covers introduction, classifications of landscape plants, ecological habits of landscape plants, relationship between plants and environment, configuration and cultivation of landscape plant, and cognition practices.

## **02562 Site Design (2)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Site Design (1), Architectural Design, Architectural Design

**Description:**

Site Design (2) is a compulsory course for majors of landscape architecture. It aims to enable students to understand theoretical bases of site design, master basic knowledge, expression and techniques of site design. This course covers introduction of site design, analyses of site design, overall layout of site, site greening design, road design, parking lot design, site vertical design, comprehensive design of pipelines, and editing files of site design.

## **02568 Public Art**

**Credits:** 3

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Public Art is a compulsory course for majors of artistic design. It aims to enable

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students to understand basic concepts and knowledge of public art, and develop their abilities to analyze and evaluate artistic works. This course covers concepts of public art, history, functions, characteristics, categories, and forms of public art, public art creation and appreciation.

## **02572 Architectural Construction (1)**

**Credits:** 2.5

**Credit hours:** 40

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Architectural Construction (1) is a compulsory course for majors of urban planning. It aims to enable students to understand basic theories and methods of civil architecture and industrial architecture. This course covers architectural graphic design, architectural section design, sizes of buildings and elevation design, introduction of civil architectural structures, wall and base configurations, floor construction and stratigraphic structures, stair structures, roof constructions, constructions of windows and doors, deformation joints, introduction to civil industrialized architecture systems, introduction to industrial architecture, plane design of single storey factory buildings, section design of single storey factory buildings, and multi-storey factory buildings.

## **02573 Architectural Construction (2)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Architectural Construction (1)

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**Description:**

Architectural Construction (2) is a compulsory course for majors of artistic design. It aims to enable students to understand basic theories and design methods of large-scale public architecture design. This course covers high-rise building constructions, high-rise building structures and modeling, floor structure in high-rise buildings, equipment layers in high-rise building, external wall structures of high-rise buildings, basement structure of high-rise buildings, stairs and elevators in high-rise buildings, fire prevention, architectural decoration structures, long-span architecture construction, roof structures of long-span architecture, and industrial architecture constructions.

**02576 Architectural Design (1)****Credits:** 4**Credit hours:** 88**Categories:** Compulsory**Prerequisites:** None**Description:**

Architectural Design (1) is a compulsory course for majors of landscape architecture. It aims to enable students to understand basic knowledge and theories of architectural design, have a correct view of design, master correct design methods, and develop students' design and practical abilities. This course covers graphic thinking and design methods of modeling, base modeling, exchange of ideas by PPT and evaluation, researches on excellent design cases of small-size public architecture, overall plane design, architecture and design, researches on excellent design cases of medium- and small-size public architecture.

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## **02577 Architectural Design (2)**

**Credits:** 4

**Credit hours:** 88

**Categories:** Compulsory

**Prerequisites:** Architectural Design (1)

**Description:**

Architectural Design (2) is a compulsory course for majors of landscape architecture. It aims to enable students to understand basic principles, programs and design methods of architectural design, develop their senses of space, functions and environment. This course covers analyses of functions of houses, relationship between men and furniture sizes, arrangement and analyses of residential parts, arrangement and analysis of transportation, arrangement and analyses of supplementary parts, design of different types of houses, technology and economic efficiency of house.

## **02582 Residential Space Interior Design**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Residential Space Interior Design is a compulsory course for majors of artistic design. It aims to enable students to master detailed contents and requirements of residential space design, develop their design abilities. This course covers introduction to Interior Design of Residential Space, design methods of residential space, atmosphere construction of residential space design, detailed design of interior residential space, environmental design of lobby (vestibule and entrance), design of living rooms and dining rooms, design of bedrooms and rooms for children, design of

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studio, and practices of residential space design.

## **02586 Introduction to Design**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Introduction to Design is a compulsory course for majors of architecture, urban planning and landscape architecture. It requires students to understand meanings, goals, values and categories of design, and develop a better understanding of professional design, thus laying a solid foundation for further studies. Main contents are scopes and status quo of design, multiplicity of design, origins and types of design, designers and design criticism.

## **02587 Design Fundamentals (1)**

**Credits:** 3

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** Introduction to Architecture, Sketching, Engineering Graphics

**Follow-ups:** Architectural Design, Site Design, Architectural and Environmental Design

**Description:**

Design Fundamentals is a compulsory course for students of architecture, urban planning, and landscape architecture. This course aims to enable students to master aesthetic abilities to design and address issues related to the forms and space of professional design, and to understand the basic knowledge of design. Students are required to master basic art literacy and engineering drawing skills. Main contents are



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ratio, surface division, ratio analysis of architectural elevation, laws of form cognition, constitution and features of form composing, point-line-plane composing, and methods of plain composing, solid composing, and accessorial building composing.

## **02588 Design Fundamentals (2)**

**Credits:** 4

**Credit hours:** 88

**Categories:** Compulsory

**Prerequisites:** An Introduction to Architecture, Sketching, Engineering Graphics

**Follow-ups:** Architectural Design, Site Design, Architectural and Environmental Design

### **Description:**

Design Fundamentals (2) is a compulsory course for students of architecture, urban planning, and landscape architecture. This course aims to enable students to master certain aesthetic ability of design and address issues related to forms and space of professional design, and understand basic knowledge of design. Main contents are principles of plain composing, solid composing, space composing and color composing, architectural pen drawings and professional drawings (architectural drawings).

## **02591 History of Western Architecture (B)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

### **Description:**

History of Western Architecture (B) is a compulsory course for majors of urban

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planning. It aims to enable students to master basic concepts of urban planning, understand development of urban planning and origins of modern urban planning. This course covers Secession, early reinforced concrete building, the Chicago School, Deutscher Werkbund, buildings after World War I , architecture in post-war time, architecture in slavery society, ancient Egyptian architecture, ancient architecture in west Asia, Islamic architecture, ancient architecture in Japan, pluralist theories in modern western architecture, and design case.

### **02651 Site Design (1)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Basic Architectural Design, Small-sized Architectural Design

**Description:**

Site Design (1) is a compulsory course for majors of architectural design, landscape design, and environment design. This course aims to enable students to understand theoretical fundamentals, basic contents and methods of side design, and updated design standards. Main contents are introduction to side design, site analyses, constraints of site design, overall outlines, design of city square and parking lots, finalized program, and formal model-making.

### **03003 Ecology**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

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Ecology is a compulsory course for majors of environmental science. The purposes of this course are to enable students to master basic concepts and theoretical systems of ecology, cultivate their ecological and environmental consciousness, and develop their abilities to reflect on environmental problems and ecological phenomena by applying knowledge of ecology. The contents of this course cover organisms and their environment, genecology, synecology, ecosystem ecology, landscape ecology, characteristics, dynamic changes and basic principles of environmental protection and sustainable development.

### **03304 Environmental Monitoring**

**Credits:** 5

**Credit hours:** 96

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Environmental Monitoring is a basic course for majors of environmental engineering. It aims to enable students to master types, properties, concentration, spatial and temporal distribution, migration, and transformation of monitoring pollutants, understand the stationing, sampling, sample retention, pretreatment methods of pollutants, and develop their abilities to analyze environmental data and monitor environment. The contents of this course include introduction, surveillance of water and waste water, surveillance of air and waste gas, surveillance of solid wastes, surveillance of soil contamination, surveillance of bio-contamination, noise surveillance, surveillance of environmental radioactivity, and quality assurance of surveillance processes.

### **04015 Interchangeability and Fundamentals of Measurement Technology**

**Credits:** 1.5

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**Credit hours:** 26

**Categories:** Compulsory

**Prerequisites:** Engineering Graphics, Mechanical Principle and Mechanical Elements, Fundamentals of Mechanical Manufacture Technology

**Follow-up Courses:** Mechanical Manufacture Equipment Design, Mold Design

**Description:**

Interchangeability and Fundamentals of Measurement Technology is a compulsory course for majors of machinery. It is designed to enable students to master basic knowledge of engineering product GDOP design, understand basic principles and methods of precision design, and develop their ability to carry out accuracy designs, like dimensional accuracy design, forms and positions accuracy design, and surface roughness accuracy design and draw correct marks on pictures according to designs. The contents of this course are interchangeability overview, limits and fits, fundamentals of measurement technology, tolerance of shape and location, and surface roughness.

## **04017 Principles of Mechanics (A)**

**Credits:** 3.5

**Credit hours:** 54

**Categories:** Compulsory

**Prerequisites:** Mechanical Graphing, Engineering Mechanics

**Description:**

Principles of Mechanics (A) is a compulsory course for students of mechanical engineering. It is designed to enable students to master basic concepts, theories, and techniques of structuring and dynamics of machinery, and develop their abilities of mechanical design and analyses. The contents of this course include principles of mechanical composition, kinematics mechanisms, dynamics of machinery, analyses and design methods of the kinematic and dynamic performance of machines in

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common use, and design of components in common applications.

### **04030 Fundamentals of Mechanical Design (A)**

**Credits:** 4

**Credit hours:** 68

**Categories:** Compulsory

**Prerequisites:** Engineering Graphics, Theoretical Mechanics, Mechanics of Materials, Interchangeability and Fundamentals of Measurement Technology, Engineering Materials

**Description:**

Fundamentals of Mechanical Design (A) is a compulsory course for majors of thermal energy and power engineering. It aims to enable students to master structures, features of common mechanisms, understand working principles, features, applications and simple design of commonly used machinery components, and develop their abilities to select, analyze, and design simple mechanical transmission. The contents of this course are introduction, kinematic sketch of mechanical systems, design of planar linking mechanisms, cam mechanisms, gear drive, worm drive, gear design, flexibility transmission design, axis, sliding bearing, antifriction bearing, and couplers.

### **04031 Fundamentals of Mechanical Design**

**Credits:** 3

**Credit hours:** 51

**Categories:** Compulsory

**Prerequisites:** Engineering Graphics, Engineering Mechanics, Engineering Materials

**Description:**

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Fundamentals of Mechanical Design is a compulsory course for majors of non-mechanical. It aims to enable students to understand policies and development trends of science and technology, master working principles, features, design and selection of common mechanism and components, and develop their abilities to design mechanical transmission and simple machinery by using modern engineering software tools. The contents of this course cover introduction, pre-knowledge of machinery design, concepts of plane mechanism, kinematic sketch of mechanisms, calculation of plane mechanism degrees of freedom, planar linkage, design of plane mechanisms, introduction of cam mechanisms, introduction of gear mechanisms, gear train, introduction of belt drive, introduction of antifriction bearing, and introduction of axis.

### **04103 Engineering Thermodynamics (A)**

**Credits:** 3.5

**Credit hours:** 60

**Categories:** Compulsory

**Prerequisites:** Theoretical Mechanics, Basic Mechanic Engineering Control, Automobiles Construction, Automobiles Theory, Automobiles Design

**Description:**

Engineering Thermodynamics (A) is a compulsory course for majors of thermal energy and power engineering. It aims to enable students to master laws of thermodynamics, understand how to apply these laws to analyzing thermal fluid working processes, and develop their abilities to think scientifically and logically. The contents of this course include: introduction, basic concepts of thermodynamics, thermodynamic properties of working medium, the first law of thermodynamics, thermodynamic processes of working medium, the second law of thermodynamics, general thermodynamics relationship of pure substances, compression cycles of gas or vapour, steam power cycle, gas power cycle, the flow of gas and steam, refrigeration

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cycle, and applications of basic theories of thermodynamics in chemical processes.

### **04105 Heat Transfer Theory (A)**

**Credits:** 3

**Credit hours:** 50

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Heat Transfer Theory (A) is a compulsory course for students of building environment and equipment engineering. The purposes of this course are to enable students to master mechanism of heat transfer, procedural analyses and calculation, equipment design and procedural control, and develop their abilities to compete in engineering design and scientific research in modern mechanic manufacturing and automation. The contents of this course cover basic analytical methods of heat transfer, analyses of basic theories and application of heat transfer, heat convection, convection heat transfer, heat radiation, and radiation heat transfer; comprehensive analyses of heat transfer process and design principles of heat interchanger.

### **04305 Fundamentals of Material Forming Technology**

**Credits:** 2

**Credit hours:** 30

**Categories:** Compulsory

**Prerequisites:** Engineering Graphic, Engineering Mechanics, Engineering Materials

**Follow-ups:** Mechanical Designing, Fundamentals of Mechanical Manufacture Technology, Sheet Metal Forming Technology and Mold Design, Plastic Forming Technology and Mold Design

**Description:**

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Fundamentals of Material Forming Technology is a basic course for majors of machinery. It aims to enable students to understand common alloy material technological properties and its influence on molding processes and component quality, master principles, approaches, process features and applications of common forming procedures and develop their abilities to select proper alloy materials and analyze demands of forming technology to components. The contents of this course include engineering material forming processes and their characteristics, casting processes, press working processes and welding processes.

## **04308 Electrotechnics**

**Credits:** 3

**Credit hours:** 52

**Categories:** Compulsory

**Prerequisites:** Advanced Mathematics, College Physics

**Follow-ups:** Electronics Technique, Basis of Control Engineering

### **Description:**

Electrotechnics is a compulsory course for majors of Mechanical Design Manufacturing and Automation, Vehicle Engineering and Thermal Engineering. It aims to enable students to master basic concepts, theories and techniques of electrotechnics, understand basic principles and laws of electric circuits and develop their abilities to analyze and solve problems by applying theories. The main contents of this course are basic concepts and laws of circuits, approaches of circuits analysis, circuits transient analysis, sine alternating current circuits, three-phase circuits, magnetic circuits, and coil circuits.

## **04311 Engineering Materials**

**Credits:** 2



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**Credit hours:** 30

**Categories:** Compulsory

**Prerequisites:** Engineering Graphics, Engineering Mechanics

**Follow-ups:** Fundamentals of Material Forming Technology, Mechanical Designing, Fundamental of Mechanical Manufacture Technology, Sheet Metal Forming Technology and Mold Design, Plastic Forming Technology and Mold Design

**Description:**

Engineering Materials is a compulsory course for majors of machinery. It aims at students' mastery of the relationship among chemical composition, organizational structure, processing procedures, and properties of engineering material, understanding of applications and processing procedures of common engineering materials, and development of their abilities to select proper materials and ways of processing them. The main contents of this course are properties of engineering materials, basic metallographic, heat treatment, principles and processes of steel heat treatment, industrial steel, cast iron, selection of materials and design of manufacturing procedure of components.

## **04316 Management Information System**

**Credits:** 3

**Credit hours:** 56

**Categories:** Compulsory

**Prerequisites:** Database

**Description:**

Management Information System is a compulsory course for majors of industrial engineering. It aims at students' mastery of basic concepts, theories, development methods and processes of management information systems, understanding of knowledge regarding management information systems, such as management science,

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information science, system science, behaviour science, computer science and communication technology, and development of their abilities to analyze and solve practical problems. The contents of this course include system planning, system analysis, system design, system implementation and system evaluation.

## **04517 Numerical Methods in Engineering**

**Credits:** 1.5

**Credit Hours:** 36

**Category:** Compulsory

**Prerequisites:** Advanced Mathematics, Linear Algebra, Mechanics of Materials, Theoretical Mechanicals

**Follow-ups:** Finite Element Analysis, Mechanical Reliability Design

### **Description:**

Numerical Methods in Engineering is a compulsory course for majors of Industrial Engineering. It aims to enable students to master basic approaches and theories of modern Numerical Methods, understand how to solve practical problems related to mechanical engineering with numerical calculation methods, and develop their abilities to deal with problems associated with applications of numerical calculation tools. The contents of this course are bases of modeling numerical methods in engineering, numerical interpolation and fitting, numerical integration and differentiation, and numerical solution of ordinary differential functions, and root finding of equations.

## **05003 Art History**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

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**Prerequisites:** None

**Description:**

Art History is a compulsory course for students of industrial design. The purposes of this course are to enable students to master development of western art, and evolution of western artistic styles by comparing different periods, areas and nationalities so as to enhance students' qualities in professional skills, and improve their capacity in art appreciation. The contents of this course cover arts in primitive periods, ancient arts, European arts in middle ages, in Renaissance, and in the seventeenth and eighteenth century, arts movement in which France was the centre during the nineteenth century, and modern arts development.

## **05010 History of Industrial Design**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Introduction to Industrial Design

**Description:**

History of Industrial Design is a compulsory course for students of industrial design. The purposes of this course are to enable students to master motivation and sources of industrial design, understand future development of industrial design, provide a vast number of design references for students to design their coursework, and have an in-depth understanding of various design styles and schools. The contents of this course cover burgeon of design, periods of handicraft design, design and commerce of the eighteenth century, mechanization and design, design reforms, industry, technology and design, fashionable styles during 1920s and 1930s, emergence of professional industrial designers, post-war reconstruction and design, and industrial design in diversification-oriented and information era.

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## **05015 Introduction to Design**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Design Sketches, Color Design

**Description:**

Introduction to Design is a compulsory course for students of industrial design. The purposes of this course are to enable students to master notions of design, multiple characteristics of design in art, technology and economy, origins of design, understand domains and classification of design, knowledge and skills designers are supposed to have, and decide on the orientation for further study. The contents of this course cover basic knowledge of design, significance, purposes, patterns, values, and status quo of design, multiple characteristics of design, design in the nineteenth century, modern design movement, typology of design, cultivation of designers, and assessment of design.

## **05017 Text Design**

**Credits:** 3

**Credit Hours:** 48

**Category:** Compulsory

**Prerequisites:** Fundamentals of Modeling, Graphic Design

**Description:**

Text Design is a core specialized course for students of Art Design. It aims to enable students to master basic concepts and functions of text design, and develop their skills of innovative text design. This course covers origins and development of characters, classification of text design, character style and modern S&T, innovative text design, typography, and text application design.

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## **05025 Form and Product Design**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Two-dimension Construction, Three-dimension Construction, Modelling, Colour Design, Introduction to Industrial Design

**Description:**

Form and Product Design is a compulsory course for students of industrial design. The purposes of this course are to enable students to master forms and their corresponding visual and tactile aesthetic laws and rational design of forms so as to understand the basic contradiction between perception and rationality of forms in industrial design. The contents of this course cover unity between forms and functions, relationship among structures, materials and organizations, some basic aesthetic problems such as personalized design, systematic form design, and learning from nature, receive training of basic connections and flow of corresponding furniture and personal products; key points and methods of regular and curved form design; form design of systematic products and principles and methods of form design related to systematic products.

## **05035 Design Psychology**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Introduction to Industrial Design

**Description:**

Design Psychology is a compulsory course for students of industrial design. The

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purposes of this course are to enable students to master consumer psychological principles, develop their abilities to investigate market, gather and analyze data, and examine consumer psychology in designing processes, enhance their understanding of relationship among product design, commodity design and enterprise design, and thus lay a solid foundation in systematic operations of product design. The contents of this course cover research objects, significance and research methods of design psychology, design and consumer demands, design and consumer motivation, design and consumer attitudes, micro-analyses of design psychology, macro-analysis of design psychology, design added value and consumer satisfaction, product design and consumer psychology and commodity design and consumer psychology.

## **05049 Foundation of Photography**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Foundation of Photography is a compulsory course for students of industrial design. The purposes of this course are to enable students to master basic knowledge, theories and skills in photography, develop their basic and practical skills in photography and hence their all-round qualities, with a focus on their abilities to complete filming with diversified themes under various conditions by applying all types of photographic equipment and technology, and to accomplish high quality images with distinct gradations, color concordance, and appropriate contrast. The contents of this course cover introduction to photography technology and art, film cameras, digital cameras, black and white photography, color photography, photography composition, modeling principles, human figure photography, landscape photography, still photography, and theme photography.

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## **05090 Design Expression Techniques**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Sketches, Colours, Composition

**Description:**

Design Expression Techniques is a compulsory course for students of industrial design. The purposes of this course are to enable students to master basic methods and procedures of expressing three-dimensional forms on two-dimensional planes, develop their abilities to express concepts and effects of product design swiftly, accurately and vividly on the basis of a vast amount of practice in design expression, improve students' capacity to think and express from three-dimensional perspectives, and thus lay a solid foundation for students to express design concepts in product designing processes in future. The contents of this course cover capacity to express product space conversion, design conceptual perception; and three-dimensional forms and spatial effects of accomplishing product design concepts on two-dimensional planes accurately and vividly.

## **05096 Logo Design and Identification**

**Credits:** 2.5

**Credit Hours:** 40

**Category:** Compulsory

**Prerequisites:** Fundamentals of Modeling

**Description:**

Logo Design and Identification is a core specialized course for students of Art Design. It aims to enable students to understand history and development of logo, and master general rules and expression techniques of logo design. The contents of this course are introduction, functions and features of logo; origins and development of

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logo; types, design principles, design forms, design techniques of logo; expression techniques and design processes of logo.

## **05107 Computer Aided Design (1)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Computer Aided Design (1) is a compulsory course for students of industrial design. The purposes of this course are to enable students to develop their abilities to draw engineering graphs with the support of computers, receive training by integrating teaching and learning, with a focus on universality and references of cases, help students apply what they have learned to analyzing and solving real-life problems. The contents of this course cover setup of drawing environment, functions and applications of basic drawing tools, characteristics of layers and graphic objects, accurate drawing with the support of computers, editing and revision of graphs, creation and editing of complicated graphic objects, text input, size marking, block and exterior references, blueprint arrangement and printout.

## **05155 Design Creativity (A)**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Design Creativity (A) is a compulsory course for students of industrial design.



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The purposes of this course are to enable students to master sketch, transformation, re-creation, develop their abilities to understand and create beauty, improve their creating thinking by breaking away from conventional thinking patterns, learn to observe, understand, and express ideas from alternative perspectives, and develop their capacity to create and discover beauty by observing regular and common objects with their own eyes. The contents of this course cover basic and definite elements, deformation, reversion, distortion, and difference; creative thinking related to graphic languages, methods of graphic design, systematic expressions of graphs, and visual expressions of graphs.

## **05320 Modeling**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Arts Foundation, Two-dimension Construction, Colour Composition, Three-dimension Construction

### **Description:**

Modeling is a compulsory course for students of industrial design. The purposes of this course are to enable students to master four types of modeling techniques: wood, metal, plastic, and paper models, develop their abilities to make small home electric appliances models with proportional and beautiful forms with ABS, familiarize coating techniques of models, and develop their independent thinking and abilities to propose and solve real-life problems. The contents of this course cover relevant concepts of model design; materials and tool selection; materials expression techniques; procedures of making small home electric appliance models: decomposing product blueprint, and making large samples on ABS board; surface decorative treatment techniques related to modeling; and analyses and realization of model samples.

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## **05501   Typography**

**Credits:** 2.5

**Credit Hours:** 40

**Category:** Compulsory

**Prerequisites:** None

**Description:**

Typography is a basic specialized course for students of Art Design. It aims to enable students to understand the history of western graphic design, and develop their abilities to think independently and analyze problems from different perspectives. The main contents are theories of design, transformation of art languages, exploration of history of posters, researches on design in 1960s, and researches on animated film modeling.

## **05530   Material Forming Technology**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Material Forming Technology is a compulsory course for students of industrial design. The purposes of this course are to enable students to master basic theories of materials forming, understand processes of metal materials forming, basic principles of various metal materials in diverse forming methods, familiarize basic laws of metal materials melting forming, pressing forming, and welding-and-joining forming. The contents of this course cover universality of physical, chemical and mechanical functions of materials forming processes, heat and mass transfer and flow in forming processes, techniques and characteristics of liquid and plastic forming, methods and techniques of welding forming processes of metal materials, and welding properties of

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materials.

## **05536 Foundation of Two-dimension Forms**

**Credits:** 4

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Foundation of Two-dimension Forms is a compulsory course for students of industrial design. The purposes of this course are to enable students to master elements in graphs — acute observation, perception and understanding of forms, colors and qualities, familiarize the organizational relationship among area, space, texture, color, rhythm and prosody, and practise graphic creation and composition gradually. The contents of this course cover understanding, development and experience of tools, basic elements of forms, constitution of points, lines and planes, graphic base and composition, and comprehensive organizational relationship of various elements — skeleton and form laws.

## **05537 Engineering Drawing**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Engineering Drawing is a compulsory course for students of industrial design. The purposes of this course are to enable students to master basic theories and methods of expressing space geometric forms and solving geometric problems by

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means of projection theory, develop students' abilities to draw and read projections, receive training in drawing by tools and hands, familiarize basic methods of marking sizes, and improve their capacity to draw and read component and assembly graphs. The contents of this course cover projection foundation of points, lines and planes, lines of section and intersection, views of composites, size marking of composites, reading views of composites, cutaway views of complicated forms, linking methods of regular and standard components, reading component graphs, and size marking of component graphs.

### **05543 Foundation of Three-dimension Forms**

**Credits:** 4

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Foundation of Three-dimension Forms is a compulsory course for students of industrial design. The purposes of this course are to enable students to master basic theories of three-dimensional modeling: distinct characteristics of volume, space, forms, structures, materials and colors in three-dimensional modeling, familiarize the organizational relationship and formal laws of form creation, develop their basic expression techniques and skills, and improve their capacity to appreciate aesthetics in three-dimensional modeling. The contents of this course cover materials and quality from two-dimension to half three-dimension and half two-dimension forms, three-dimension construction, space modeling and comprehensive modeling.

### **05545 Color Design**

**Credits:** 3

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**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Color Design is a compulsory course for students of industrial design. The purposes of this course are to enable students to master theories and laws of color design, develop their abilities to comprehensively design products and amply express ideas from the perspectives of functional, market and constitutional colors, with a focus on their abilities to re-create objects and use colors subjectively, and thus lay a solid foundation for other design courses. The contents of this course cover relationship between colors and design, differences between color design and basic colors, common methods and expression techniques of color design, inductive methods, exaggerated methods, and principles and practice of decorative color creation.

## **05553 Fundamentals of Modeling**

**Credits:** 7.5

**Credit Hours:** 120

**Category:** Compulsory

**Prerequisites:** None

**Description:**

Fundamentals of Modeling is a basic specialized course for students of Art Design. It aims to enable students to understand how natural images turn into graphic arts, and develop their ability to find modeling languages from nature. This course covers development of modeling arts, fundamental requirements of modeling art, theories associated with relations of design and painting, transformation of thinking, modeling language, composition and its expression, lighting and shadows.

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## **06010 Human Resources Management**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** The Principles of Management, Organizational Behavior

**Description:**

Human Resources Management is a compulsory course for students of management and economics. The purposes of this course are to enable students to master basic concepts and principles of human resources management, develop students' abilities to analyze and solve practical problems. The contents of this course cover basic theories, knowledge and skills of human resources management, comparison of modes of human resources management, labor organization, individual behaviour, motivation, Recruitment and allocate, staff training, labor wages, employee benefits, salary of managers, trade union and collective bargain, and solving practical problems in human resources management by case studies.

## **06059 Organizational Behavior**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Management

**Description:**

Organizational Behavior is a compulsory course for students of business administration. It aims to enable students to master objects of study, research methods and significance of organizational behavior, and major theories of organizational behavior at individual, group and organizational level, and apply theory to practice of organizations in life and administration. The contents of this course include

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development stages and research methods of organizational behavior science, individual psychology and activities, teamwork spirits and behavior, motivation theories, leadership psychology and organizational behavior, organizational culture and organizational behavior, teamwork and its organization, organizational reform, influence of organizations on their members; minds, emotions and behavior, influence of members' behavior on organizations and influence of performance on the whole organization.

## **06082 Public Relations**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Public Relations is a compulsory course for majors of marketing. It aims at enabling students to understand basic concepts, theories, methods, and strategies of public relations, have a general knowledge regarding modern public relations, and develop students' abilities to solve practical problems by apply knowledge learned into public relations. This course covers introduction of public relations, origins and development of public relations, subjects, organizations and employees in public relations, objects of public relations, public relation dissemination, and images, investigation, planning, implementation, evaluation, negotiation, and etiquettes related to public relations, and management of public relations crises.

## **06103 Management**

**Credits:** 3

**Credit hours:** 48

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**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Management is a compulsory course for students of management and economics, and also a general education course for all undergraduates. It aims to enable students to master fundamental principles, approaches and laws of management and management science, and foster students' basic managerial qualities and management performance perspectives so as to lay a solid foundation for developing a well-rounded knowledge structure and studying follow-up specialized courses. The essential teaching modules include: introduction, planning and decision-making, organization and changes, leadership and motivation, and control and quality.

## **06115 Operation Research**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Advanced Mathematics, Linear Algebra, Probability Theory

**Description:**

Operation Research Theory is a compulsory course for students of economics and management. It aims to enable students to master fundamental contents, theories and methods which are frequently used in administrative decision, enhance student's ability to apply quantitative analysis methods to solving practical problems, and lay a solid foundation for further study of modern management theories. The contents of this course cover basic features and methods of operation research, linear programming, modeling, analysis and solution of model, simplex methods, mathematical model, objective programming and its mathematical model, decision analysis, and typical algorithms in operation research.



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## **06130 Investment Project Analysis and Management**

**Credits:** 3

**Credit hours:** 48

**Categories:** Elective

**Prerequisites:** None

**Description:**

Investment Project Analysis and Management is an elective course for majors of engineering management. The purposes of this course are to enable students to understand and master basic concepts of engineering economics and basic principles and economic results, apply basic principles to assessing economic effects of engineering plans, understand technological policies, measures and plans that are made by state departments and enterprises, master methods of improving economic effects of engineering technological plans. The contents of the course cover time value of funds and equivalence calculated, appraisal criterion of capital projects, comparison and choice of capital projects, uncertainty analyses, financial analyses of projects, and economic analyses of public utilities project and value engineering.

## **06132 Management Information System**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Operational Research, Mathematics Statistics, Production Management, Marketing, Database System, Computer Network

**Description:**

Management Information System is a compulsory course for students of information management and information system. It aims to enable students to master management information systems and other related concepts, understand features of

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information systems, familiarize characteristics of analysis, design and time of information systems under the network environment and methods and strategy of development, gradually form basic quality of applying theories and methods of modern management of computer network platform to solving practical problems in managerial decision. The contents of this course include information, information systems and related concepts, theories of the establishment of information systems, development methods and processes of information systems, theories of planning, analysis, design, realization, and maintenance of information system.

## **06158 Corporate Finance**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Accounting

**Description:**

Corporate Finance is a compulsory course for students of business administration. It aims to enable students to master fundamental contents and methods of analysis of corporate finance, discuss and investigate some specialized subjects of corporate financial management, enhance student's abilities of finance decision-making. The contents of this course cover concepts of financial management, objective of financial management, methods of financial management, system of financial management, meaning and manifestation of time value of money, basic theories, evaluation and analytical methods of investment, financing, working capital, risk analysis, capital results, capital costs in applications of security investment, and project investment.

## **06181 Corporate Strategic Management**

**Credits:** 3

**Credit hours:** 48

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**Categories:** Compulsory

**Prerequisites:** Microeconomics, Management, Accounting, Human Resources  
Management, Marketing, Management of Operation and Finance

**Description:**

Corporate Strategic Management is a compulsory course for students of business administration. It aims to enable students to master basic concepts, theories and analytical tools of strategic management, develop their abilities to analyze and solve problems of system decision. The contents of the course include establishment of enterprise mission and strategic objectives by using rational external and internal enterprise environment analysis methods, choosing different strategies based on development goals and external and internal environment analysis, implementing and controlling of strategy, competitive advantages and development of core competitiveness, establishment of systematic concept of value and management logic.

## **06184 Data Structures and Algorithm**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** JAVA Programming, Management, Mathematics

**Description:**

Data Structure and Algorithm is a compulsory course for students of electronic commerce. It aims to enable students to master abstract data types of computer, data structures of fundamental types and related processing algorithms, and thus lay a solid foundation for further studies. The contents of the course are data organization table, concepts of data structures and algorithms, trees, graphs, basic algorithms of precedence ordering, stack, queue, serial, array, generalized list, sequence of linear list, chain and realization of linear list, tree of data structures, binary trees, definitions, properties and storage architectures of forest, methods of traversal, undirected graphs and spanning trees.

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## **06186 Principles and Applications of Database**

**Credits:** 3

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** Management, Mathematics

**Description:**

Principles and Applications of Database is a compulsory course for students of E-commerce. It aims to enable students to master basic concepts, theories of database, SQL language, theories and skills of database design, and thus lay a solid foundation for further studies such as management information system, and JAVA programming. The contents of the course are modeling of database, development of database management systems, SQL language of database and database design.

## **06189 Enterprise Ethics**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Economics, Management

**Description:**

Enterprise Ethics is a compulsory course for students of marketing, enterprise management, and electronic commerce. It aims to enable students to develop their ability of ethical analyses of enterprise and economic activities, and their abilities of ethical decision-making through basic analyses and discussions of enterprise interests, stakeholder and enterprise moral norm system. The contents of the course include basic concepts of enterprise ethics and basic opinions, theories and methods of business ethics; stakeholders, social functions of enterprises, moral hazards of enterprises, fundamental concepts of enterprises' social responsibility, foreign

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enterprises social accountability management mode, and unity of moral principles and profits.

## **06196 Supply Chain Management**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Management and Logistic Management

**Description:**

Supply Chain Management is an elective course for majors of business administration. The purposes of this course are to enable students to master independent thinking and innovative abilities, ascertain and select most efficient strategy to achieve objectives, execute the very strategy, control and evaluate strategic processes based on analyzing external and internal enterprise environment. The contents of the course covers basic analyses of supply chain (SC), configurations and basic management processes of SC, uncertainties and “long scourge domino effect of SC, basic strategies of SCM, measures of SCM, analytical models of SCM, circulating configurations and resource collocation of SC, inventory management of SC, cooperative fellowship of SC, information management of SC, cost management of SC, performance evaluation of SC, and international SCM.

## **06200 Public Relations and Management Communication**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Management, Psychology, Basic writing

**Description:**

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Public Relations and Management Communication is a compulsory course for students of management and economics. It aims to enable students to master basic methods and knowledge of managerial communication, familiarize means of communication, and acquire basic skills of communication through case studies in order to lay a solid foundation of communication for work and social life. The contents of this course include basic knowledge of managerial communication, strategic communication, strategy of communicator, strategy of audience, strategy of information, strategy of channel selection, strategy of cultural, listening, writing, speech, negotiating, interview, meeting, conflict management, reform communication, crisis communication, application of communication tools (effective writing, effective listening, effective speech), and interpersonal communication.

## **06203 Introduction to E-Commerce**

**Credits:** 3

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** Management

**Description:**

Introduction to E-commerce is a compulsory course for students of E-commerce. It aims to enable students to master basic knowledge of E-commerce. The contents of this course are basic theories of E-commerce including infrastructures, requirements on safety, application of E-commerce in enterprises, global development condition of E-commerce, emergence of E-commerce, the influence of Relevant supporting discipline and environment on E-commerce, structure and design rules of E-commerce, principles of E-commerce system integration, design methods of virtual enterprise, and case study methods.

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## **06229 JAVA Programming**

**Credits:** 3

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** C Language, Database Principles and Applications

**Description:**

JAVA Programming is a compulsory course for students of electronic commerce. It aims to enable students to master basic concepts, grammar of JAVA, develop methods for object-oriented software, and thus lay solid foundation for further courses such as management information systems, data structures and algorithms. The contents of the course are basic java grammars, class and inheritance, interface, abstract class, ping, exception handling, programming (SWING、SWT and RCP) , network programming, JAVA I/O system, JDBC, database and multithreading, type, transformation, declaration of class, objects, polymorphism, applications and applet, interaction of HTML and applet, array and character string, programming and multithreading.

## **06240 Establishment and Management of E-Commerce**

**Credits:** 2

**Credit hours:** 40

**Categories:** Compulsory

**Prerequisites:** Introduction to E-Commerce, Principles and Design of Database

**Description:**

Establishment and Management of E-Commerce is a compulsory course for students of E-commerce. It aims to enable students to master structures of E-commerce systems, methods of design, ideas of management, familiarize basic processes of E-commerce structures, and understand basic contents and technologies of E-commerce of different levels. The contents of this course are relations between

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E-commerce system and ERP, SCM, and CRM systems, structures of E-commerce, hardware and software platform, systematic plan, analysis, design, implementation, maintenance, operation, promotion, evaluation, common tools of E-commerce systems, and concepts of E-commerce maintenance.

## **06256 Channel Decisions and Management**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Marketing, Management

### **Description:**

Channel Decision Making and Management is a compulsory course for students of economics and management. It aims to enable students to master functions, processes, structures and classifications of distribution channels, and knowledge of basic theories and structures of channel strategy design in marketing activities. The contents of the course include functions of distribution channel, relationship between structures and management, strategic design of distribution channel, procedures and methods of controlling and management, operation rules of channel in marketing activities, channel strategy featuring in market coverage, main types, source and common strategies of channel check, differences of foreign marketing and domestic marketing, basic requirement of international design of distribution channel; choosing factors that have influence on international distribution channel mode; principles and strategies that coordinate relations of international distribution channels.

## **06257 Product Decisions and Management**

**Credits:** 2

**Credit hours:** 32



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**Categories:** Compulsory

**Prerequisites:** Marketing

**Description:**

Product Decisions and Management is a compulsory course for students of economics and management. It aims to enable students to develop the awareness of brand management and marketing, master basic theories and methods of product and brand management, and enhance students' abilities to analyze and solve problems of brand operations and management in order to help students meet demands of marketing management. The contents of the course include brand operation, management activities and their regularities, related concepts of brand, situations of Chinese brand competitiveness, differences between competitiveness of Chinese brands and foreign brands, determination of brand positioning, decisions of brand positioning strategy, general principles and forms of brand communication, principles of brand communication, basic contents and strategies of brand maintenance.

## **06258 Price Decisions and Management**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Marketing, Market Research and Forecasting

**Description:**

Price Strategy and Management is a compulsory course for students of economics and management. It aims to enable students to understand and master basic theories of pricing for modern enterprises, analytical methods for pricing environment, processes and methods of pricing, strategies of pricing, and learn how to apply advanced analysis tools to studying prices. The contents of the course include macro environment analysis of pricing, market environment analyses and analysis of internal environment of enterprise, importance of pricing, objectives, principles and processes

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of pricing, customer oriented pricing, competition driven pricing and cost-oriented pricing, and basic contents of conjoint analysis.

## **06259 Theory of Modern Enterprises**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Microeconomics

**Description:**

Theory of Modern Enterprise is a compulsory course for students of business administration. It aims to enable students to master fundamental contents of modern enterprise theory to lay a solid foundation for organizational and enterprise management researches. The contents of this course cover background of modern enterprise theory, development of enterprise theories, enterprise properties transaction cost and property theories, contract theory, corporate governance theory, core competitiveness of enterprise analysis, and special studies of modern enterprise governance.

## **06276 Analysis for Strategic Marketing**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Marketing, Management, Strategy Management

**Description:**

Analysis for Strategic Marketing is an elective course for majors of business administration. The purposes of this course are to enable students to master systematic and scientific decision-making and facile applications of marketing theories and

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methods, familiarize strategic marketing planning and how to study and analyse market, and understand mature analysis methods to help marketing managers make decisions. The contents of the course include strategies and strategy marketing, processes of marketing management, analyses of market opportunities, market segmentation, potential buyers, demands identification, competitor identification, environment analysis and prediction, analyzing of competition advantage, competition, and methods of resource distributions.

### **06311 Economic Prediction and Decision**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Statistics, Macroeconomics, Microeconomics, Econometrics, Advanced Mathematics, Analysis of Time Series, Multivariate Statistical Analysis

**Description:**

Economic Prediction and Decision is a compulsory course for students of business administration. It aims to enable students to master measurement and evaluation for precise prediction, forecasting technique, and basic methods of decision-making and to apply these methods in economic phenomena to making scientific forecast and decision under uncertain conditions. The contents of this course include concepts, functions, methods, types, principles and procedures of forecasting, market research and forecasting, spot check, error analysis, determination of sample sizes, processing market survey data, expert judgments forecast, sales force judgment, forecast composite method, regressive forecast method, time series decomposition, trend extrapolation, time-series flat forecast, and box-jenkins method.

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## **06318 e-Marketing**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Marketing, Principles of Computer Network and its Applications

**Description:**

e-Marketing is a compulsory course for students of marketing. It aims to enable students to master basic concepts, theories, marketing tools and methods of e-Marketing, learn applied technologies of e-Marketing such as enterprise site planning oriented on marketing, construction, management, optimizing, promotion skills, search engine marketing, online ads strategy, permission E-mail marketing. The contents of the course cover basic theories of e-Marketing, common tools and methods of network marketing, web design, development, maintenance, management oriented on marketing, theories and operations of registration and ranking of search engine for website promotions, theories and implementation of viral marketing, design of online advertisements, implementation of permitting E-mail marketing, marketing strategies of mail tabulation, marketing of affiliate programs, establishment and management of online shops, online surveys, mobile network marketing, evaluation and management of network management effects, and applications of e-Marketing.

## **06320 Operation Production Management**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Microeconomics, Operation Research

**Description:**

Operation Production Management is a compulsory course for students of

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management. It aims to enable students to understand future development of enterprise operations in management, master basic theories and methods of managing enterprise operations, and enhance their abilities to systematically solve practical problems of production operation management. The contents of this course cover introduction to production operation management, production type and organizing of production procedure, production plan and forecasting of production capacity, location and distribution, MRP material requirement planning, MRP II, ERP, production planning and controlling, project management (application of network planning technique), quality management and control (International Standardization Organization 9000), punctual production system and lean manufacturing, changes of management, and advanced mode of production.

## **06501 Modern Management**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Modern Management is an elective for students of civil engineering. The purposes of this course are to enable students to master two major systems of basic knowledge, develop five key skills, and thus achieve targets of integrating managerial knowledge with capability development. The contents of this course cover fundamental knowledge in managerial systems including concepts and properties of management, management subjects, objects and environment, management mechanism, methods and functions; management thoughts, including evolution and updated trends of management thoughts, management theory and organizational culture; and five key skills including planning and decision-making skills, organization and personnel skills, control of leadership and communication skills,

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skills in information treatment and innovation capacity.

### **06503 Marketing**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** The Principles of Management, Organizational Behavior

**Description:**

Marketing is a compulsory course for students of management and economics. The purposes of this course are to enable students to master basic knowledge, skills of marketing, and the philosophy of marketing, and understand significance of reinforcing marketing management in developing the socialist market economy. The contents of this course cover basic theories, knowledge and methods of marketing, marketing environment, market purchasing behavior, combination decision of marketing, basic processes and methods of organizing and controlling marketing activities, designing of sales teams, recruitment and training of salesmen, and performance appraisal.

### **06505 Business Operations Simulation**

**Credits:** 1.5

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Microeconomics, Operation Research

**Description:**

Business Operations Simulation is a compulsory course for students of management. It aims to enable students to understand some factors that should be considered in the business operations in an enterprise-like environment, enhance their

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ability to command whole situations, decision-making, and strategic management, train student's commercial logical thinking, familiarize strategic and financial management oriented on the market, and experience cruelty of commercial rivalry and feelings of decision makers. The contents of the course cover strategic planning, fund procurement, marketing, product research and development, production organizing, equipment investment and updating, financial accounting and management.

## **06510 Service Marketing**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Marketing, Management

**Description:**

Service Marketing is a compulsory course for students of marketing. It aims to enable students to master standpoints, viewpoints and methods of service marketing theory, and enhance students' ability to apply service marketing theory to discovering, analyzing and solving practical problems in service industry. The contents of the course include basic concepts, theories, strategies, methods of service marketing; awareness of modern service marketing; functions, procedures, structures and classification of distribution channel in marketing activities; basic theories and structures of channel strategy design in marketing activities; conflict resolution, application of channel information system and channel check.

## **06512 Advertising Communication and Promotion Management**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

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**Description:**

Advertising Communication and Promotion Management is a compulsory course for students of economics and management. It aims to enable students to master theories and practical issues in advertisement communication and sales promotion management, and carry out analyses and researches from seven aspects based on scientific logic including advertisement communication, sales promotion, marketing objects, action objectives of target audience, communication objectives, position, creativeness strategy, media strategy, advertisement research and evaluation. The contents of the course include advertisement communication, sales promotion and marketing objectives, target audience and action objectives, idea implementation strategies, advertisement communication of enterprises, sales promotion of manufacturers, sales promotion of direct marketing, selection of media in advertisements and marketing communication, implementation of media plan, advertisements and evaluation of advertisements.

**06513 Personnel Promotion****Credits:** 2**Credit hours:** 32**Categories:** Compulsory**Prerequisites:** Marketing**Description:**

Personnel Promotion is a compulsory course for students of marketing. It aims to enable students to understand functions, responsibility of personnel promotion, make selling career planning comply with laws and ethics, familiarize purchasing determinants, effectively make sales plans to find potential consumers, sale products and service in accordance with sale procedures and keep long-term cooperation relationship with clients. The contents of the course include basic theories, procedures and skills of personal selling, management of personal selling, basic theories of negotiation, organization of negotiation, strategies, and skills of negotiation.



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## **06517 Marketing Simulation**

**Credits:** 1.5

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Marketing, Business Administration

**Description:**

Marketing Simulation is a compulsory course for students of marketing. It aims to enable students to master strategic thinking ability, learning ability, communication ability, cooperation ability, decision-making ability of marketing, and strengthen competitive awareness; effectively raise learning interesting, marketing teaching effect, and quarantine education quality in the fierce market competition. The contents of the course include exhibiting resources of enterprise through sand table; launch business activities according to established procedures; basic ideas and methods of operating an enterprise, basic skills of exhibiting economic resources of an enterprise and its distribution conditions of resources through sand table.

## **06520 Introduction to Logistics Management**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Electronic Commerce, Enterprise Management, Marketing, Business Administration

**Description:**

Introduction to Logistics Management is a compulsory course for students of electronic commerce. It aims to enable students to master related concepts of modern logistics management, preliminary design of strategic logistics management, analyze and solve some typical logistic cases by applying theories and methods of logistic distribution, transportation, storage, packaging, service, organization and systematic evaluation. The contents of the course are modern logistics, modern logistics system,

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functions significance of supply chain in logistics, significance, functions and concepts of modern logistics management, management of logistics supply chain; basic methods of logistic distribution, transportation ,storage, packaging, service, strategic design, system evaluation, information system design, new types of logistics, and management.

## **06522 Online Payment and Safety**

**Credits:** 2

**Credit hours:** 40

**Categories:** Compulsory

**Prerequisites:** Introduction of E-business

### **Description:**

Online Payment and Safety is a compulsory course for students of electronic commerce. It aims to enable students to form innovative thinking abilities of online payment methods and research ability of network information security. The contents of the course are significance of online payment to electronic commerce and relationship between electronic money and online payment, connotation, features, supporting network platform, operation mode of online payment, security problems in online payment processes including availability, access control, data confidentiality, data integrity, non-repudiation, theories and methods of security technique that can solve security problems including symmetric encryption technology, asymmetric encryption technology, digital digest technology, digital signature, digital certification, firewall, concepts and structures of network bank, business procedures, and practical operations of online payment.

## **06526 Special Topics on E-Commerce**

**Credits:** 2

**Credit hours:** 16

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**Categories:** Elective

**Prerequisites:** None

**Description:**

Special Topics on E-Commerce is an elective course for majors of management. The purposes of this course are to enable students to master major information technologies and theories related to E-Commerce, and the recent development trends of those technologies and theories. The contents of the course cover up-to-date knowledge in E-Commerce logistics and supply chain, information security technologies and its development trends, related technologies in business intelligence and its development trends, and frontier knowledge in M-Commerce.

### **06533 New Theories of Marketing**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Marketing

**Description:**

New Theories of Marketing is a compulsory course for majors of marketing. The purposes of this course are to enable students to master updated concepts and theories of marketing both in China and abroad, develop students' abilities to recognize marketing development and practices based on theoretical analyses. The contents of the course include new ideas and methods such as direct-marketing, green-marketing, concept-marketing, and consumer-marketing, trends of overseas marketing, up-to-date theories of relationship-marketing, customer relationships, management theories and practices, marketing methods and technologies for non-profit organizations and social marketing.

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## **06540 Principles and Applications of ERP**

**Credits:** 2

**Credit hours:** 40

**Categories:** Compulsory

**Prerequisites:** Principles of Database, Diploma in Industrial and Operations Management

**Description:**

Principles and Applications of ERP is a compulsory course for students of electronic commerce. It aims to enable students to master abilities to apply ERP. The contents of this course are history of ERP and its meaning in each period, the importance of ERP systems in enterprise management, procedures and practical operations of ERP, meanings, functions and compiling of BOM, meanings and relations of working centers and capacity requirements planning, methods and procedures of capacity requirements planning, common methods of forecasting, compiling principles and methods of master production schedule.

## **06543 Retail Marketing**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Marketing

**Description:**

Retail Marketing is a compulsory course for students of marketing. It aims to enable students to master basic concepts, knowledge, operation theories and skills of retail marketing, understand structures and operation theories of retail marketing mixtures, develop their abilities of retail marketing plans and operational capacity. The contents of the course include market area analysis, types of store location, strategy of retail store locations, qualities of buyers, contents of retail purchase decisions, private brand decisions, influence and contents of retail pricing decisions,

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functions and purposes of sales promotions, inscapes of retail purchasing environment, retail sales connotation, and strategies of dealing with consumer complaints.

## **06544 Principles of Marketing**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Business Administration

**Description:**

Principles of Marketing is a compulsory course for students of marketing. It aims to enable students to understand market-oriented perspectives on customer, master principles and methods of marketing, effectively organize operating activities in economic activities, engage in marketing activities such as development, production, pricing, distribution, sales promotion of products to develop their abilities of enterprise management. The contents of the course include concepts and contents of marketing, significance of five concepts of market and their differences, the relationship between enterprises and marketing environment, main contents and trends of total environment and microenvironment, measures of enterprises to changes of marketing environment, basic methods and strategies of pricing, brand strategy, and marketing strategy.

## **06546 System Simulation**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

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System Simulation is a compulsory course for majors of management science. The purposes of this course are to enable students to carry out model researches of managerial decision-making, and simulations and CAD of management systems. The contents of the course include basic theories, methods and tools of system simulation, continuous system simulation, simulation of discrete event systems and modern technology of simulation.

### **06548 New Product Development Management**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

New Product Development Management is an elective course for majors of marketing. The purposes of this course are to enable students to master marketing theories, develop student's modern logic thinking, and international perspectives of looking at things. The contents of the course include the basic recognition of new product development management, discussions and sharing of cases of new products and technologies.

### **06550 Marketing and Risk Management**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Principles of Marketing

**Description:**

Marketing and Risk Management is a compulsory course for majors of

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marketing. The purposes of this course are to enable students to master basic concepts and methods of marketing risk management, functional principles, and develop students' awareness of marketing risk management through experiments and skills. The contents of the course include basic concepts, principles and methods of marketing risk management, and applying related software to carry out marketing risk management.

## **06551 Marketing Engineering**

**Credits:** 2

**Credit hours:** 40

**Categories:** elective

**Prerequisites:** Principles of Marketing

### **Description:**

Marketing engineering is an elective course for majors of marketing. The purposes of this course are to enhance the students' understanding of marketing, decision-making model analysis, apply modeling methods and analysis tools to solving complex marketing decision-making problems, familiarize contents and roles of marketing engineering, master applications of a variety of marketing models, techniques and skills of solving problems, some necessary analysis, quantitative techniques and computer modeling, and develop students' ability to apply comprehensive knowledge and practical hands-on ability. The main contents of this course are numbers of marketing models of market segmentation, market positioning, marketing strategy decision-making, new product decision, and sales force and distribution channel decisions.

## **06801 Consumer Behaviour**

**Credits:** 2

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**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Marketing

**Description:**

Consumer Behavior is a compulsory course for students of marketing. It aims to enable students to master psychology bases and influencing factors of consumer behavior, purchase decision processes, understand how to guide and regulate consumer behavior by using marketing methods, and thus lay a solid foundation for future work in the relevant fields after graduation. The contents of the course include significance, history, theories and methods of consumer behavior research, decision-making procedures of purchasing, influences of individual and psychological factors on consumer behavior, influences of environment factors on consumer behavior, and internal and external factors of consumer behavior.

## **06802 Market Research and Forecasting**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Marketing, Statistics

**Description:**

Market Research and Forecasting is a compulsory course for students of economics and management. It aims to enable students to understand basic methods, concepts, theories, skills of investigating and forecasting of market information, fully realize characteristics and activities of market, and understand significance of market research and forecasting in enterprise management, form a habit of emphasizing analyses and researches, enhancing students' ability of analyzing, researching and solving problems. The contents of the course include sample design, questionnaire design, measurement design, statistical analyzing technique, arrangement of market survey data, and methods of market survey.



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## **06815 Fundamentals of E-Commerce Technology**

**Credits:** 3

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** C Language, Database Principles and Applications

**Description:**

Fundamentals of E-commerce Technology is a compulsory course for students of electronic commerce. It aims to enable students to apply knowledge learned from many courses to analyzing, designing, coding, installing and debugging Web systems to gain valuable experiences. The contents of the course include HTML language of static web pages, cascading style sheet language, C# language, user interaction web widget, development of real-time dynamic websites based on database or XML language, summarization of .NET, features of C# language, bases of ASP.NET, basic operations of database, application of XML language, Web services, and development of tri-layer system of ASP.NET.

## **07012 Electrical Measurement Technology**

**Credits:** 1

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Calculus, Circuits

**Description:**

Electrical Measurement Technology is a basic course for majors of electrical and information science and technology. It aims at students' mastery of basic applications and adjustments of common instruments, understanding of concepts of measurement errors, basic experimental and testing methods, and development of their abilities to process experimental data correctly. The contents of this course are DC circuits

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theorem, sine AC parallel circuits, three-phase AC circuits, applications of oscilloscopes and signal generators, response of the first order circuits, characteristics of RLC serial circuit resonance, inductive coupled circuits, measurement of network parameters of AC two ports, characteristics of filter frequency, controlled sources and their characteristics, and negative impedance converters.

## **07013 Electromagnetic Field**

**Credits:** 2

**Credit hours:** 30

**Categories:** Compulsory

**Prerequisites:** Advanced Mathematics, Vector Analysis, College Physics, Equations of Mathematical Physics

### **Description:**

Electromagnetic Field is a basic course for students of electrics. It aims at students' mastery of basic rules and application of macro electromagnetic field theories from their previous electromagnetic knowledge in college physics, understanding of basic attributes, motion rules and mutual effects of substances from the perspective of electromagnetic field and development of their abilities to observe, analyze and solve problems from the perspective of Field. The contents of this course are vector analysis, fundamental physical quantity and experimental laws of electromagnetic fields, electrostatic field analysis, solution of boundary value problems of electrostatic fields, stationary magnetic field analysis, time-dependent electromagnetic fields, and sine plane electromagnetic waves.

## **07015 Digital Electronic Technology (B)**

**Credits:** 4

**Credit hours:** 72

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**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Digital Electronic Technology (B) is a compulsory course for students of electronic technology. It aims to enable students to master basic knowledge and application expertise of digital electronic technology, and develop their skills in digit circuit design and comprehensive competence. The contents of this course cover digital logic foundation, logical algebra, representation of combinational logic function, simplification of combinational logic function, data selector, basic RS flip-flop, and impulse characteristics of flip-flop.

## **07109 Analog Electronics Techniques (A)**

**Credits:** 4

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** The Circuits

**Description:**

Analog Electronic Techniques (A) is a compulsory course for majors of electronic and electric information. It aims at enabling students to understand composition, basic operation principles, and analytical methods and applications of basic circuits, master design and debugging methods of basic circuit, and basic theories, knowledge and skills of electronic technology, and develop their abilities to analyze and solve problems. The contents of this course cover structures, operating principles, equivalent models, performance index and application of electronic components, the operating principles of amplifying circuits, calculation of quiescent points, analyses and calculation of small-signal equivalent circuits and main circuit parameters, main unit circuits of integrated operational amplifiers, main parameters and applications of operational amplifiers, improvement of feedback amplifiers by

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feedback amplifiers and back-feeds, analyses, design and applications of feedback amplifiers, signal generation, and power circuits.

## **07218 Electronic Technology**

**Credits:** 2.5

**Credit hours:** 44

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Electronic Technology is a compulsory course for students of material modeling and control. It aims to enable students to master essential knowledge, theories and skills of electronic technology, and familiarize applications and general situations of development. The contents of this course cover semiconductor devices, amplifying circuit, integrated operational amplifiers, DC regulated power supply, trigger, sequential logic circuit and conversion between analog and digital signals.

## **07219 Electrotechnics**

**Credits:** 3

**Credit hours:** 56

**Categories:** Compulsory

**Prerequisites:** Advanced Mathematics, College Physics

**Description:**

Electrotechnics is a compulsory course for students of building environment and equipment engineering. The purposes of this course are to enable students to master basic theories, knowledge and skills of electrotechnics, understand application of electrotechnics and development trends of China's industrial electricians, lay a solid foundation for learning further courses and carry out technician work and scientific

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research in relevant fields. The contents of this course cover circuit theory, and electrical machines and control, including basic concepts of circuit, analytical methods of circuit, sinusoidal circuit, three-phase circuit, time domain response of circuit, magnetic circuit, transformer, electromotors, and relay contactor control.

## **08026 Database Principles and Applications**

**Credits:** 3

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** Statistical Software and Its Applications

**Description:**

Database Principles and Applications is a compulsory course for majors of statistics. It aims to enable students to understand basic knowledge of database, and rationale of database management system, master SQL, develop their abilities to design and implement a database innovatively in order to solve practical issues. This course covers data models, structures of data management system, relational data models, theories of relational data design, case studies of relational data management systems, SQL, database protection, and database design.

## **08052 Signal and System**

**Credits:** 4

**Credit hours:** 80

**Categories:** Compulsory

**Prerequisites:** Complex Function, Integral Transform

**Follow-ups:** Principles of Communication, Digital Signal Processing

**Description:**

Signal and System is a compulsory course for majors of communication

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engineering, computer science and technology and information security. It aims to enable to master basic knowledge, theories and analytical methods of signal and linear system, and develop their abilities to analyze and solve problems. The contents of this course cover principles of basic signals and systems, characteristics of linear time invariant (LTI) systems, Fourier analysis in discrete and continuous time systems, numerical methods in time domain and frequency domains, Fourier transformation, energy spectrum and power spectrum.

## **08082 Computer Organization and Architecture**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Digital Circuits and Logical Programming

**Follow-up Courses:** Operating System, Computer Architecture

**Description:**

Computer Organization and Architecture is a compulsory course for majors of computers. It aims to enable students to master organization, interconnection and internal working principles of single-processor computers' components, and concepts of integrated computer systems, understand hierarchical organization, hardware and software of computer systems, and develop their abilities to apply basic knowledge regarding ISA (Instruction Set Architecture) and realize it. The main contents of this course are computer organization, instruction set architecture design, register transfer languages, data-path design, controller design, memory systems, computer arithmetic and I/O interface.

## **08101 Digital Circuits and Logic Designs**

**Credit:** 4

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**Hours:** 80

**Category:** Compulsory

**Prerequisites:** None

**Follow-ups:** Principles of Computer Composition, Design of Digital System, Computer Principles and Interface Techniques, Embedded System

**Description:**

Digital Circuits and logic Designs is a compulsory course for majors of Computer Science and Technology, Electronic Information Engineering, Measurement & Control Technology and Instrument, and Mechanical Design, Manufacture & Automation. It aims at enabling students to master knowledge regarding digital circuits and digital systems, and develop their abilities to analyze, integrate, and test digital circuit independently. The contents of this course are logic circuits, analyses and design of synchronous sequential logic circuits, EDA tools, digital system design, commercial integrated circuits modules, combinational circuit, VHDL (Very-High-Speed Integrated Circuit Hardware Description Language), state machine design, and feedback sequential circuits.

## **08113 Data Structure**

**Credit:** 4

**Hours:** 80

**Category:** Compulsory

**Prerequisites:** Discrete Mathematics, Programming Design

**Description:**

Data Structure is a basic course for majors of computers. It aims at students' mastery of fundamental data structures of linear lists, stacks, queues, binary trees, trees, graphs and applications, understanding of applications and analyses of sorting and searching, as well as time-space complexity analysis, and development of their abilities to analyze and organize data, and select optimal data structure and algorithm

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for specific problems. This course covers basic concepts of data structures, types of abstract data, relationships between data structure and other courses, algorithm asymptotic analysis, linear lists, sequence lists, single linked lists, circular linked lists, double circular linked lists, stacks, basic data structures like queues, binary trees, trees, graphs, and Huffman trees.

## **08126 Fundamentals of Computer Programming**

**Credits:** 3.5

**Credit hours:** 72

**Categories:** Compulsory

**Prerequisites:** 08247

### **Description:**

Fundamentals of Computer Programming is a basic course for majors of computer science and technology, communication engineering, information security, and intelligence science and technology, and a compulsory course for all students of science and engineering. It aims to enable students to master main knowledge units of C language, and gradually grasp concepts of and approaches to modularized programming. The main contents include the following aspects: (1) the basic structure of the programming language C, data types and data accessing, and basic programming expressions; (2) basic descriptions of program algorithms; (3) basic control structures of programming sentences for simple computer program designing; and (4) concepts of and approaches to modularized programming, such as functions, arrays, pointers, structures, files, and bit computing.

## **08131 Electrical Circuit Analysis**

**Credits:** 3

**Credit hours:** 80



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**Categories:** Compulsory

**Prerequisites:** Higher Mathematics, Linear Algebra

**Follow-ups:** Electronic Circuits, Communication Circuits, Fundamentals of Mono-Chip Computers

**Description:**

Electrical Circuit Analysis is a basic course for majors of computers and communication. It aims at students' mastery of basic theories and approaches of electrical circuit analyses, understanding of applications of simulation tools and EDA tools to analyze, design and debug computer systems and develop their abilities to analyze and solve problems of circuits analyses, design, development, applications and maintenance. This course covers basic principles of circuit analyses, resistive circuits, first order dynamic circuits, alternating current stable circuits, phaser methods, three-phase circuits, and inductive-coupled circuits.

## **08205 Advanced Programming**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** C Programming Language

**Follow-ups:** Data Structure

**Description:**

Advanced Programming is a compulsory course for majors of computer science and technology, communication engineering and information security. It aims to enable students to master basic concepts and methods of object-oriented programming, learn C language programming, and develop their abilities to think logically, analyze, and self-study. The contents of this course cover basic concepts of objects oriented programming, characters and programming methods of C language, data abstraction, operator overloading, polymorphism and virtual functions.

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## **08583 Fundamentals of Programming**

**Credits:** 3

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** Advanced Mathematics B

**Description:**

Fundamentals of Programming is a compulsory course for students of electronic commerce. It aims to enable students to master C language, basic algorithms and skills of programming, methods of programming, develop their abilities to use computers to solve practical problems and to use advanced language to design programs. The contents of the course are introduction of C language, basic data type and arithmetic, input and out of data, operation of buffer file systems, edit pre-process and command linear parameters, search of disorder data sequences and order data sequences, numerical computing methods, approximate calculation of polynomials infinite functions, basic styles and methods of programming such as modularization, and step refinement.

## **08651 Applied Statistics and Stochastic Processes**

**Credits:** 2.5

**Credit hours:** 40

**Categories:** Compulsory

**Prerequisites:** Signals and System

**Description:**

Applied Statistics and Stochastic Processes is a basic course for majors of communication engineering, computer science, and intelligent information processing. It aims at students' mastery of characteristics, statistical features, and analytical methods of random signals in programming processes and in-depth understanding of

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theories learned in Signals and System classes and main algorithm in Stochastic Process Theory. The main contents cover basic concepts of stochastic processes, statistical properties descriptions of stochastic processes, stochastic signal analyses, narrowband, normal stochastic processes, Markov processes, and Poisson processes.

### **09015 Inorganic Chemistry (B)**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Inorganic Chemistry (B) is a compulsory course for majors of environmental engineering. It aims to enable students to master basic concepts and theories, understand ways to apply basic concepts and theories, and develop their ability to analyze and solve problems. The contents of this course cover basic concepts and laws of chemistry, Chemical equilibrium, ionization equilibrium, chemical thermodynamics, chemical reaction, atomic structure and periodic laws of elements, molecular structures, crystal structures, hydrogen and noble gas, redox reaction, halogen, oxygen family elements, nitrogen group elements, carbon, silicon, boron, nonmetallic elements, alkali metal, alkaline-earth metals, copper group elements and zinc group elements, transition elements, lanthanide series and actinide elements, and nuclear chemistry.

### **09066 Biochemistry**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

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**Prerequisites:** None

**Description:**

Biochemistry is a basic course for majors of environmental science. It aims to enable students to master basic theories of biochemistry and molecular biology, understand basic knowledge and skills, and develop their abilities to analyze and solve problems by applying what they learnt. The contents of this course include saccharides, structures and functions of protein, nucleic acid, enzyme, glycometabolism, lipid metabolisms, biological oxidation, amino acid metabolism, relations and adjustments of metabolisms, biosynthesis of DNA, biosynthesis of RNA, biosynthesis of protein, gene expressions and regulations, genetic recombination, and genetic engineering.

## **09116 Structural Chemistry**

**Credits:** 2.5

**Credit hours:** 40

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Structural Chemistry is a compulsory course for students of chemistry. It aims to enable students to master basic laws and theories of microcosmos movement, principles of molecular study and crystal texture and thus lay a foundation for further studies. The contents of this course cover bases of quantum mechanics, atomic structures, chemical bonds and molecular structures, lattice theory and crystal texture, and secondary bonds.

## **09154 Analytical Chemistry (B)**

**Credits:** 3

**Credit hours:** 48

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**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Analytical Chemistry (B) is a compulsory course for students of chemistry. It aims to enable students to master principles and methods of analytical chemistry, and develop competence in solving practical problems by means of learned analytical methods. The contents of this course are tasks and functions of analytical chemistry, data error processing and analyses, introduction of titrimetry, acid-base titration, non-aqueous titration, compleximetry, precipitation titration, and gravimetric methods.

## **09155 Organic Chemistry (B)**

**Credits:** 4

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Organic Chemistry (B) is a basic course for majors of environmental engineering. It aims to enable students to master basic theories and concepts of organic chemistry, understand updated fruits and development tendencies, and develop their abilities to transform different organics. The contents of this course are introduction, alkane, monoolefine, alkynes and dienes, mellow wine, phenol, ether, enantiomerism, arene, the application of modern physical experimental approaches, halohydrocarbon, alicyclic hydrocarbon, aldehyde and ketone, carboxylic acid, carboxylic acid derivative, organics containing nitrogen, pericyclic reaction, heterocyclic compound, proteins and nucleic acid, and carbohydrate.

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## **09164 Basic Chemical Experiments**

**Credits:** 2

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** Inorganic Chemistry, Quantitative Chemical Analysis, Organic Chemistry

**Description:**

Basic Chemical Experiments is a compulsory course for students of environmental engineering. It aims to enable students to understand basic theories and operating skills of chemical experiments, master approaches to obtaining information through handbooks, reference books, and Internet, and develop their abilities to observe, analyze and design experiments independently. The contents of this course are basic knowledge of chemical experiments, claims of instruments, cleaning and drying, glass blower, extraction, re-crystallization purification, determination of organics' melting points, distillation, boiling point determination, steam distillation, reduced pressure distillation, fractionation, thin-layer chromatography, preparation of vinyl episulfide, preparations of butyl bromide, determination of refractive index, preparation of diethyl ether, preparation of butyl ether, preparation of acetophenone, and preparation of furancarbinol.

## **09175 Elementary Chemical Engineering**

**Credits:** 5

**Credit hours:** 96

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Elementary Chemical Engineering is a compulsory course for majors of applied chemistry and materials chemistry. It aims to enable students to learn technical

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process of chemical production and basic concepts of chemical engineering, and master fundamental principles of chemical reaction engineering and chemical unit operation. The contents of this course are basic concepts of chemical engineering, process of chemical production, differences between lab study and chemical production, fluid flow and transportation, heat-transfer processes, mass transport processes, Newton's laws of viscosity, Gas-liquid Phase Balance, and rectification.

### **09176 Physical Chemistry (B)**

**Credits:** 4

**Credit hours:** 72

**Categories:** Compulsory

**Prerequisites:** Advanced Mathematics

**Description:**

Physical Chemistry (B) is a basic course for students of Water Supply and Drainage Engineering. The purposes of this course are to enable students to understand basic concepts and principles of Physical Chemistry B, and develop their abilities to apply principles and theories of physical chemistry to understanding and solving practical problems related to production and researches. The contents of this course are three principles of chemical thermodynamics, chemical equilibrium, chemical kinetics, electrochemistry, colloids and interface chemistry.

### **09409 Basic Chemistry Experiments (A3)**

**Credits:** 2

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

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Basic Chemistry Experiments (A3) is a compulsory laboratory course for students of chemistry. It aims to enable students to understand principles of chemical experiments, master skills in purification and quantitative analysis and learn qualitative detection and data processing. The contents of this course cover colloid adsorption, determination of Avogadro constant, purification of coarse salt, CuSO<sub>4</sub> crystal for copper oxide preparation, preparation of standard acid solution, and basic solution.

## **09500 Biochemistry Experiment**

**Credits:** 0.5

**Credit hours:** 16

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Biochemistry Experiment is a basic course for majors of environmental science. It aims to enable students to master applications and verification of biochemistry in experiments, understand basic technologies and applications of biochemistry, and develop their abilities to solve practical problems by applying their knowledge. The contents of this course include decomposition of amino acid, color reaction of protein and amino acid, determination of protein isoelectric points and precipitation reaction, Kjeldahl methods, extraction of nuclear acid from animal tissues, characteristics of enzyme, and quantitative determination of Vitamin C.

## **09553 Introduction to College Chemistry**

**Credits:** 2

**Credit hours:** 36

**Categories:** Compulsory



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**Prerequisites:** None

**Description:**

Introduction to College Chemistry is a basic course for majors of mechanical design and manufacturing automation. It aims to enable students to master concepts of states and structures of substance, thermo chemistry, chemical equilibrium, and chemical reaction rates, understand chemistry knowledge involved in materials science, bioscience, environmental science, and develop their abilities to analyze and solve problems with theories. The contents of this course are basic concepts of chemistry, gas, liquid and their conversion, solution, thermo chemistry, chemical reaction rates and chemical equilibrium, acid-base balance, precipitation and dissolution equilibrium.

**09557 Analytical Chemistry (A)**

**Credits:** 4

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Analytical Chemistry (A) is a compulsory course for students of chemistry. It aims to enable students to master basic principles of gravimetric method and absorption photometry, and learn to solve titrimetry problems with equilibrium theory. The contents of this course are data processing and quality assurance, titrimetry, gravimetric methods, absorption photometry, titration curve and titration errors.

**09590 Organic Chemistry (A1)**

**Credits:** 3

**Credit hours:** 48

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**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Organic Chemistry (A1) is a compulsory course for students of chemistry. It aims to enable students to master basic theories, knowledge and experimental skills of organic chemistry, and lay a foundation for further study and working. The contents of this course cover structural theories of organic chemistry, concepts of organic compounds and organic chemistry, classification of organic compound, relation between organic chemistry and pharmacy, and structure determination of organic compounds.

## **10012 Advanced Mathematics (B)**

**Credits:** 4

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Advanced Mathematics (B) is a compulsory course for majors of management and economics. The objectives of this course are to enable students to master mathematical approaches to analyzing and solving problems, the abilities to make inferences, generalize problems and calculate, and thus lay a solid foundation for follow-up courses in mathematics and specialized courses in management science and economics. It covers basic ideas, elementary theories and fundamental methods for univariate and multivariate calculus, infinite series, and differential equations.

## **10012 Advanced Mathematics (B1)**

**Credits:** 3

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**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Advanced Mathematics (B1) is a compulsory course for students of science and engineering. It aims to enable students to master basic knowledge of calculus and Differential equation, foster students' abilities of abstract thinking abilities, arithmetic capability, Critical and reasoning abilities, and lay a solid foundation for further studies. The contents of the course are real numbers, variables and functions, sequence and limit, functional limit, derivative, composite function, derivative of inverse function, derivative of elementary functions, higher order derivative, differential, AND-function, indefinite integral, differential integral, Newton and Leibniz dimitrios formula, integration by substitution, integration by parts, common integral method, Romberg, Rolle's theorem, Lagrange theorem, monotonicity and concavity of function, l'Hôpital's rule, extreme value problem, vector concept and arithmetic operations, space equation of lines and planes, the classification of quadric surface, ordinary differential equations, methods of separation of variables, elementary proof, solution of second order linear differential equations, and solution of Second-order constant coefficient equations.

## **10012 Advanced Mathematics (B2)**

**Credits:** 5

**Credit hours:** 80

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Advanced Mathematics (B2) is a compulsory course for students of science and engineering. It aims to enable students to master basic knowledge of calculus and differential equation, foster students' abilities of abstract thinking, arithmetic capability, critical thinking and reasoning, and thus lay a solid foundation for further studies. The contents of the course are concepts of function of several variables, limits

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and continuity of function of several variables, partial derivative and complete differential, chain rule, Taylor formula of several variables, theorem of the existence of implicit functions, extreme value problem, definitions and calculation of double integral, definition and calculation of triple integral, application case of multiple integral, the first type and the second type curve integrals, Green theorem, the first type and the second type surface integral, Gauss formula, Cauchy principle of convergence, convergence of series, positive term series, function series, power series, Taylor series, improper integral and its convergence, parametric variable, Beta function and Gamma function, trigonometric function systems, Fourier expansion, and Bessel equality.

### **10013 Advanced Mathematics (A1)**

**Credits:** 5.5

**Credit hours:** 88

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Advanced Mathematics (A1) is a basic course for majors of science and engineering. It aims to develop students' ability for abstract generalization, logical reasoning, spatial imagination and skills in computation, and abilities to analyze and solve problems with the knowledge learned. The contents of this course are functions, limits, continuity and basic ideas, theories, and computation of univariate calculus.

### **10014 Advanced Mathematics (B)**

**Credits:** 4

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** 10012

**Description:**

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Advanced Mathematics (B) is a compulsory course for majors of management and economics. The objectives of this course is to enable students to master mathematical approaches to analyzing and solving problems, abilities to make inferences, generalize problems and calculate, and lay a solid foundation for follow-up courses in mathematics and specialized courses in management science and economics. It covers basic ideas, elementary theories and fundamental methods for univariate and multivariate calculus, infinite series, and differential equations.

### **10013    Advanced Mathematics**

**Credits:** 11.5

**Credit hours:** 184

**Categories:** Compulsory

**Prerequisites:** Elementary Mathematics

**Description:**

Advanced Mathematics is a compulsory course for all majors of sciences. It aims to enable students to master basic concepts, theories and methods of advanced mathematics, and develop their abilities of logic reasoning, spatial visualization and self learning, and their capacity to analyze and solve practical problems by applying the knowledge learned, thus laying a solid foundation for the study of follow-up specialized courses. This course covers functions, limits and continuity, single variable differential calculus, single variable integral calculus, vector algebra, analytic geometry, multivariable differential calculus, multivariable integral calculus, infinite series, and ordinary differential equations.

### **10014    Advanced Mathematics**

**Credits:** 11.5

**Credit hours:** 184

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**Categories:** Compulsory

**Prerequisites:** Elementary Mathematics

**Description:**

Advanced Mathematics is a compulsory course for all majors of sciences. It aims to enable students to master basic concepts, theories and methods of advanced mathematics, and develop their abilities of logic reasoning, spatial visualization and self learning, and their ability to analyze and solve practical problems by applying the knowledge learned, thus laying a solid foundation for studying follow-up specialized courses. This course covers functions, limits and continuity, single variable differential calculus, single variable integral calculus, vector algebra, analytic geometry, multivariable differential calculus, multivariable integral calculus, infinite series, and ordinary differential equations.

## **10015 Advanced Mathematics**

**Credits:** 11.5

**Credit hours:** 184

**Categories:** Compulsory

**Prerequisites:** Elementary Mathematics

**Description:**

Advanced Mathematics is a compulsory course for all majors of sciences. It aims to enable students to master basic concepts, theories and methods of advanced mathematics, and develop their abilities of logic reasoning, spatial visualization and self learning, and their capacity to analyze and solve practical problems by applying the knowledge learned, thus laying a solid foundation for studying follow-up specialized courses. This course covers functions, limits and continuity, single variable differential calculus, single variable integral calculus, vector algebra, analytic geometry, multivariable differential calculus, multivariable integral calculus, infinite series, and ordinary differential equations.

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## **10037 Mathematical Analysis (1)**

**Credits:** 5

**Credit hours:** 80

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Mathematical Analysis (1) is a compulsory course for majors of mathematics and applied mathematics and computational science. It aims to enable students to master fundamental concepts and mathematical analytical abilities and thus lay a foundation for further study. The contents of this course are set of real numbers and relevant concepts of functions, definitions and limits of a sequence and its existence conditions, functional limits, concepts and characteristics of continuous functions, differential coefficient and differential coefficient, differential mean value theorem and its applications.

## **10038 Mathematical Analysis (2)**

**Credits:** 6

**Credit hours:** 96

**Categories:** Compulsory

**Prerequisites:** Mathematical Analysis (1)

**Description:**

Mathematical Analysis (2) is a compulsory course for students of mathematics. It aims to enable students to master basic theories of mathematical analysis and modeling, and develop their abilities of logical thinking and reasoning. The contents of this course are implicit function theorem and its application, containing parameter integral, curvilinear integral, multiple integral, surface integral, differential calculus

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on manifold, numerical experimentation, power series expansion of functions, integral calculation, and fitting curve.

### **10039 Mathematical Analysis (3)**

**Credits:** 5.5

**Credit hours:** 40

**Categories:** Compulsory

**Prerequisites:** Mathematical Analysis (1), Mathematical Analysis (2)

**Description:**

Mathematical Analysis (3) is a compulsory course for students of mathematics. It aims to enable students to master basic theories and methods of multi-function calculus, develop their abilities of logical thinking and reasoning with mathematical analytical approaches. The contents of this course cover integral depending on a parameter and improper integral, multiple integral, curvilinear integral and calculation of surface integral, relation among integrals, gauss formula, and Stokes formula.

### **10040 Probability and Mathematical Statistics (A)**

**Credits:** 1

**Credit hours:** 16

**Categories:** Elective

**Prerequisites:** None

**Description:**

Probability and Mathematical Statistics (A) is an elective for students of civil engineering. The purposes of this course are to enable students to master basic concepts, theories and methods of random process, which can be applied to solving real-life random problems, improve students' mathematical competence to carry on



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research projects and solve practical problems, and enhance students' abilities to establish mathematical models, and analyze and solve various problems. The contents of this course cover probability distribution of random variants, figure characteristics, and parameter estimation, and mastery and application of statistical analytical methods of hypothesis tests.

## **10040 Probability and Mathematical Statistics (A)**

**Credits:** 3.5

**Credit Hours:** 56

**Category:** Compulsory

**Prerequisites:** Advanced Mathematics

### **Description:**

Probability and Mathematical Statistics (A) is a basic course for majors of electrical and information science and technology. It aims to enable students to master concepts of probability theory and mathematical statistics, understand its basic theories and approaches, and develop their abilities to analyze and solve practical problems with probabilistic statistics. The contents of this course include random experiments, random events of sample space, stochastic variable, bi-variable random variable and its distribution, concepts of mathematical statistics, point estimation, hypothesis testing, and unary linear regression models.

## **10046 Computation Methods**

**Credits:** 4

**Credit hours:** 72

**Categories:** Compulsory

**Prerequisites:** None

### **Description:**

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Computation Methods is a compulsory course for majors of applied mathematics and information. It aims to enable students to understand fundamental concepts and methods of numerical calculation, master arithmetics of classical mathematical problems and develop their competence in numerical calculation and programming. The contents of this course are vector and norms of matrix, general theories of interpolation, Lagrange interpolation, difference quotient, Newton interpolation, basic concepts of function approximation, best uniform approximation, numerical differentiation, general concepts of numerical integration, complex integration methods, and Gauss integral methods.

## **10049 Modern Algebra**

**Credits:** 3.5

**Credit hours:** 56

**Categories:** Compulsory

**Prerequisites:** Advanced Algebra

### **Description:**

Modern Algebra is a compulsory course for majors of mathematics and applied mathematics. It aims to enable students to understand basic knowledge and theories of modern algebra, master conventional research methods of algebraic structure and thus lay a foundation for further relevant studies. The contents of this course are fundamental concepts of group, ring and domain, algebraic extension fields, factors of integral domain, formation and characteristics of algebra.

## **10071 Discrete Mathematics**

**Credits:** 4

**Credit hours:** 72

**Categories:** Compulsory

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**Prerequisites:** None

**Description:**

Discrete Mathematics is a basic course for majors of computer science and technology. It aims to enable students to master concepts and theories of discrete mathematics, understand approaches to applying descriptive tools into discrete structures, and develop their abilities to analyze and solve practical problems with abstract thinking and logic reasoning. The contents of this course are mathematical logic, counting, set theory, relational theories, modern algebra, graphics, combinatorial mathematics, and programming.

## **10097 Differential Geometry**

**Credits:** 3.5

**Credit hours:** 56

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Differential Geometry is compulsory course for students of mathematics and applied mathematics. It aims to enable students to master basic knowledge and theories of differential geometry, develop their abilities to think, analyze and solve problems and lay a foundation for further relevant studies. The contents of this course cover vector function and its calculus, tangent to curves, common prism, tangent plane, local structure of curved surface, ruled surface, and developable surface.

## **10124 Advanced Algebra (2)**

**Credits:** 2.5

**Credit hours:** 40

**Categories:** Compulsory

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**Prerequisites:** Advanced Algebra (1)

**Description:**

Advanced Algebra (2) is a compulsory course for majors of mathematics and applied mathematics and computational science. It aims to enable students to master basic features of modern algebra research, develop their abilities of abstract thinking, reasoning and creation and thus lay a foundation for further studies. The contents of this course are polynomial theory, linear systems of equations, linear space, linear transformation, quadrics and Euclidean space, basic concepts, and operation properties of matrix.

## **10125 Spatial Analytic Geometry**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Plane Analytic Geometry, Solid Geometry

**Description:**

Spatial Analytic Geometry is a compulsory course for majors of mathematics and applied mathematics, information and computational science and mathematical statistics. It aims to enable students to develop their abilities of spatial imagination, mathematical operations and solving problems, and lay a foundation for further studies. The contents of this course are vector algebra, space curves, plane surface and straight lines, general theories of conic, simplification of quadratic equations, affine transformation, introduction of conicoid, and straight line parametric equations.

## **10135 Complex Variable Functions (A)**

**Credits:** 2.5

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**Credit Hours:** 40

**Category:** Compulsory

**Prerequisites:** Calculus

**Description:**

Complex Variable Functions (A) is a compulsory course for majors of electrical and information science and technology. It aims to enable students to master concepts, theories, and approaches of complex variables functions, understand the ways to use complex variables functions as calculating tools, and develop their abilities to solve calculating problems quickly. The contents of this course are introduction to complex variables functions, definitions of complex number, algebraic operation, geometrical significance of complex number, complex plane, complex plane, differential coefficient of complex variables functions, C-R equation, analytic functions and properties, introduction to elementary functions, Cauchy-Goursat Theorem, primitive function, Cauchy integral formula, derivatives of high order formula, relationship between analytical functions and harmonic functions, Taylor expansion in analytical functions, Laurent series, and Laurent expansion.

## **10144 Mathematical Equations in Physics**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** College Physics, Advanced Mathematics, Complex Variables Functions

**Description:**

Mathematical Equations in Physics is a basic course for majors of computer science and technology. It aims to enable students to master connections of mathematics with physics, understand approaches to apply mathematics to physics and other interdisciplinary science, and develop their abilities to analyze and solve

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practical problems with mathematical equations in physics. The contents of this course cover vector analyses and field theory, establishment and solution of mathematical equations in physics, definite problems, traveling wave methods, separation of variables, integral-transform methods and Green function methods, variation methods, special functions, Legendre's polynomials, Bessel functions, and Sturm-Liouville boundary problems.

## **10145 Constant Differential Equation**

**Credits:** 3.5

**Credit hours:** 56

**Categories:** Compulsory

**Prerequisites:** Mathematical Analysis, Advanced Algebra

### **Description:**

Constant Differential Equation is a compulsory course for majors of mathematics and applied mathematics and information and computational science. It aims to enable students to master basic knowledge, theories and methods of constant differential equations, and develop their abilities to think, analyze and solve problems. The contents of this course are elementary methods of integration, general theories of constant differential equations, linear differential equations, systems of linear differential equations, actual model of constant differential equations, and elementary solution of nominal linear differential equations.

## **10146 Differential Equation**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Calculus, Linear Algebra

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**Description:**

Differential Equation is a basic course for majors of computer science and technology. It aims to enable students to understand concepts, theories, and approaches of differential equations, and develop their abilities to solve problems by applying differential equations. The contents of this course cover introduction, solution of first order differential equations, equation of higher order, linear systems of differential equations, nonlinear differential equations and stability, separate equations and variables, exact equation and integrating factors, uniqueness theorem, and systems of linear differential equations with constant coefficient.

**10301 Field Theory****Credits:** 2**Credit hours:** 32**Categories:** Compulsory**Prerequisites:** None**Follow-ups:** Electrodynamics, Hydromechanics, Thermodynamics**Description:**

Field Theory is a compulsory course for students of engineering mechanics. It aims to enable students to master basic concepts and theories of field theory, develop their abilities of analysis and solving problems and thus lay a foundation for further study. The contents of this course are vector analyses, directional derivative of scalar field and its grads, flux and divergence of vector field, and operation rules of Hamilton operators.

**10310 Integral Transformation****Credits:** 1**Credit hours:** 16

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**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Integral Transformation is a basic course for majors of mechanical design and manufacturing automation. It aims to enable students to understand basic concepts and properties of Fourier transform and Laplace transform, master commonly used transform pairs, and develop their abilities to solve practical problems with what they have learnt. The contents of this course are Fourier integral formulas, concepts of Fourier transform, unit impulse function and Fourier transform, spectrum of non-periodic functions, properties of Fourier transform, convolution and convolution theorem, Laplace transform, properties of Laplace transform, inverse functions, and applications of Laplace transform.

## **10506 Mathematical Model**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Mathematical Analysis, Advanced Algebra, Constant Differential, Equation, Methods of Computation

**Description:**

Mathematical Model is a compulsory course for students of mathematics and applied mathematics. It aims to enable students to master basic knowledge and theories of mathematical model, and develop their abilities to think, analyze and solve problems. The contents of this course cover mathematical modeling, elementary modeling, discrete models, optimization models, mathematical programming models, differential equation models, stability models, statistical analysis models, statistical analysis models and collective models.



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## **10525 Theory of Probability and Mathematics Statistics**

**Credits:** 3.5

**Credit hours:** 56

**Categories:** Compulsory

**Prerequisites:** Advanced Mathematics B

**Description:**

Theory of Probability and Mathematics statistics is a compulsory course for students of electronic commerce. It aims to enable students to master basic concepts of probability theories and mathematical statistics, understand its basic theories and methods, understand basic thoughts and methods of random phenomenon and data information analysis, improve students' abilities to apply methods of probability and statistics to analyzing and solving problems, and thus lay a solid mathematic foundation for further studies. The contents of the course are random time, random variable, probability distribution, numerical features of random variable, common statistics, sampling distribution and parameter estimation, basic concepts, theories, and methods of hypothesis tests.

## **10527 Numerical Calculation and Optimization Theory**

**Credits:** 2.5

**Credit hours:** 40

**Categories:** Compulsory

**Prerequisites:** Advanced Mathematics, Linear Algebra

**Description:**

Numerical Calculation and Optimization Theory is a basic course for majors of electrical and information science and technology. It aims to enable students to master concepts, theories, and approaches of numerical calculation and optimization theories, understand analytical approaches of numerical calculation and realization of common numerical calculation, and develop their abilities to analyze and solve problems with numerical calculation. The contents of this course are introduction, the solution of

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nonlinear equation, the solution of linear systems, interpolation approximation, curve fitting, numerical differentiation and integration, solution of differential equations, and numerical optimization.

## **10801 Linear Algebra**

**Credits:** 2.5

**Credit hours:** 40

**Categories:** Compulsory

**Prerequisites:** High School Mathematics

**Description:**

Linear Algebra is a compulsory course for students of science and engineering. The purposes of this course are to enable students to master basic theoretical knowledge and skills in linear algebra, improve their abilities of abstract thinking and logic reasoning, skilful matrix operation and methods, develop their capacity to solve real-life problems with the support of computers and knowledge of linear algebra. The contents of this course cover fundamental theories of matrix, determinants, linear simultaneous equations, linear space and transformation, similar matrix and quadratic forms.

## **10801 Linear Algebra (B)**

**Credits:** 2.5

**Credit hours:** 40

**Categories:** Compulsory

**Prerequisites:** High School Mathematics

**Description:**

Liner Algebra (B) is a general education course for all majors of science and engineering. It aims to enable students to master basic theories of linear algebra,

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improve their abilities of abstract thinking and logic reasoning, and enhance their skills to analyze and solve problems by applying computer with the knowledge learnt. The contents of this course covers matrix, determinants, linear equations, linear space, linear transformations, similar matrix and quadratic forms.

## **10846 Insurance Accounting**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Risk Management and Insurance, Basic Accounting

**Description:**

Insurance Accounting is a compulsory course for students of Insurance. It requires students to understand concepts and characteristics of insurance accounting, differences and connection between GAAP and SAP on the basis of a mastery of fundamental theories and knowledge of insurance and accounting. Main contents are accounting of insurance incomes, premium reserves, cost, special insurance business, reinsurance business, and insurance investment, financial statement and its analysis of insurance companies.

## **11001 College Physics (1)**

**Credits:** 3.5

**Credit hours:** 56

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

College Physics (1) is a compulsory course for all majors of science and engineering. The objectives of this course are to familiarize the students with structures, properties, interactions and laws of motion of matters in nature so as to lay

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a solid foundation of physics for follow-up basic courses and specialized courses; to help students gradually grasp thinking of and approaches to problems in physics; to develop students' abilities to construct models for qualitative analysis, estimation, and computing; and to cultivate students' capacity to acquire knowledge independently and solve real-life problems with physical knowledge. This course covers particle kinetics, particle dynamics, momentum conservation of particle system, mechanics of special theory of relativity, wave optics (interference, diffraction, and polarization), Kinetic theory of gas, and macroscopic thermodynamics.

## **11001 College Physics (1)**

**Credits:** 4

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** Calculus

**Description:**

College Physics (1) is a compulsory course for students of science and engineering. The purposes of this course are to enable students to familiarize structures, interaction and properties of objects in nature and its basic laws of movement, master methods of physical research, form world outlook and methodology of dialectical materialism, improve their abilities to set up physical models, qualitative analyses, estimating, quantitative computation and independently obtaining knowledge, and thus lay a solid foundation for further study. The contents of the course cover particle kinematics, mechanical quantity conservation of particle system, plastic mechanics of special relativity, wave optics (interference, diffraction, and polarization), kinetic theory of gases, and macroscopic thermodynamic basis.

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## **11002 College Physics (2)**

**Credits:** 3.5

**Credit hours:** 56

**Categories:** Compulsory

**Prerequisites:** 11001

**Description:**

College Physics (2) is a compulsory course for all majors of science and engineering. The objectives of this course are to familiarize the students with structures, properties, interactions and laws of motion of matters in nature so as to lay a solid foundation of physics for follow-up basic courses and specialized courses; to help students gradually master thoughts and approaches to problems in physics; to develop students' abilities to construct models for qualitative analysis, estimation, and computing; and to develop students' capacity to acquire knowledge independently and solve real life problems with physics knowledge. This course covers electrostatic field in vacuum, conductor electrostatic induction and dielectric polarization, steady magnetic field, magnetization of media, electromagnetic induction and electromagnetic field, and fundamental quantum physics.

## **11003 College Physics (2)**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Calculus, College Physics (1)

**Description:**

College Physics (2) is a compulsory course for students of science and engineering. The purposes of this course are to enable students to familiarize structures, interaction and property of objects in nature and its basic laws of movement,

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master methods of physical research, form world outlook and methodology of dialectical materialism, improve their abilities to set up physical models, qualitative analyses, estimating, quantitative computation and independently obtaining knowledge, and thus lay a solid foundation for further studies. The contents of the course cover electrostatic field in the vacuum, electrostatic induction and polarization of medium, static magnetic fields, magnetization of media, electromagnetic induction and electromagnetic field, and basics of quantum physics.

## **11004 College Physics Experiment**

**Credits:** 1

**Credit hours:** 16

**Categories:** Elective

**Prerequisites:** None

**Description:**

College Physics Experiment is an elective for students of civil engineering. The purposes of this course are to enable students to master basic knowledge, methods, and skills in carrying out physics experiment; understand physics experiment through teaching and learning basic physics experiments, develop fundamental qualities in implementing scientific experiment, including vigorous and scientific attitudes, and positive and adventurous spirits. The contents of this course cover physics experiments including mechanics, thermology, electromagnetism, optics, microphysics, and modern physics experiment such as atomic physics, nuclear physics, laser, X-rays, magnetic resonance, microwave technology, low-temperature physics, and semiconductor physics.

## **11013 Optics**

**Credits:** 3

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**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Follow-ups:** Applied Optics, Optoelectronics

**Description:**

Optics is a compulsory course for students of applied physics. It aims to enable students to master basic knowledge and theories of optics, and lay a foundation for further relevant study. The contents of this course are interference of light, diffraction of light, fundamental principles of geometrical optics, fundamental principles of optical instrument, polarization of light, scattering and chromatic dispersion, quantum optics and bases of modern optics.

## **11500 Analytic Mechanics**

**Credits:** 4

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Analytic Mechanics is a compulsory course for students of applied physics. It aims to enable students to master basic knowledge and theories of analytic mechanics, and learn to solve mechanics problems in science and engineering. The contents of this course are history and status quo of analytic mechanics, basic concepts of analytic mechanics, principles of virtual displacement and analytical statics, general equations of dynamics and variation principles of mechanics.

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## **11076 Modern Physical Experiments**

**Credits:** 1

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Modern Physical Experiments is a compulsory course for students of applied physics. It aims to enable students to learn functions of experimental physics in developing processes of physical conception, and master common methods, skills and instrument knowledge of contemporary physics. The contents of this course cover Millikan oil drop experiment, Zeeman effect experiment, nuclear magnetic resonance, hologram, light velocity measurement, microwave measurement and optical magnetic resonance experiments.

## **11085 Electrodynamics**

**Credits:** 4

**Credit hours:** 64

**Categories:** Compulsory

**Description:**

Electrodynamics is a compulsory course for students of applied physics. It aims to enable students to master basic laws of electromagnetic field and deepen understanding of the nature of electromagnetic field and space-time concept, so as to lay a solid foundation for further study. The contents of this course are vector analysis and field theory, electrostatic field, magnetostatic field, special theory of relativity, charged particle, and the interaction of electromagnetic fields.



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## **12001 Theoretical Mechanics (A)**

**Credits:** 5

**Credit hours:** 80

**Categories:** Compulsory

**Prerequisites:** Advanced Mathematics, Linear Algebra

**Follow-ups:** Mechanics of Materials, Elastic Mechanics, Structural Mechanics

### **Description:**

Theoretical Mechanics (A) is a compulsory course for students of engineering mechanics. It aims to enable students to solve simple practical engineering problems by applying theories and analytical methods of theoretical mechanics and thus lay a foundation for further studies. The contents of this course cover foundations of mathematics, statics, plane motion of a rigid body kinematics, bases of vector dynamics, rigid body dynamics, and bases of analytical mechanics.

## **12002 Theoretical Mechanics (B)**

**Credits:** 1

**Credit hours:** 16

**Categories:** Elective

**Prerequisites:** None

### **Description:**

Theoretical Mechanics (B) is an elective for students of civil engineering. The purposes of this course are to enable students to master basic concepts, theories and methods in theoretical mechanics, analyze and establish balance equation and kinetic equation, and solve simple equations, and develop students' abilities to raise (discover) problems from mechanical phenomena and real projects, analyze problems by qualitative and quantitative methods and apply the book knowledge learned to solving practical problems. The contents of this course cover statics, kinetics, theoretical mechanics, and research methods of theoretical mechanics.

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## **12002 Theoretical Mechanics (B)**

**Credits:** 4

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Theoretical Mechanics (B) is a basic course for majors of mechanical design and manufacturing automation. It aims to enable students to master laws and research methods of particle, systems of particles, and rigid body's mechanical movement, understand dialectical materialistic views of world, and develop their abilities to analyze and solve practical engineering problems with these theories. The contents of this course include introduction, statics principle, plane arbitrary force systems, special force systems, friction, kinematics of points, simple movement of rigid body, resultant motion of points, plane motion of rigid body, theorem of angular momentum, theorem of kinetic energy, d'Alembert principles, and principles of virtual displacement.

## **12003 Mechanics of Materials (A)**

**Credits:** 5

**Credit hours:** 85

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Mechanics of Materials (A) is compulsory course for students of engineering mechanics. It aims to enable students to master basic concepts and analytical methods of mechanics of materials and thus lay a foundation for further studies. The contents

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of this course are basic concepts of statics, stress analysis of materials, theories of strength, stress and strain, bending deflection, bending stress, energy approach, reduction of force systems, equilibrium of force systems, axial tension and compression.

## **12004 Mechanics of Materials (B)**

**Credits:** 1

**Credit hours:** 16

**Categories:** Elective

**Prerequisites:** None

**Description:**

Mechanics of Materials (B) is an elective course for students of civil engineering. The purposes of this course are to enable students to familiarize the force analysis, master basic concepts and fundamental knowledge regarding capacity and stability of structure, intensity, strength and stability of constructional elements, and skilful calculation and preliminary analytical skills. The contents of this course cover inner force, stress, and deformation of bars, stress status, intensity theory, calculation of intensity, strength and stability of bars, calculation of inner force, stress and deformation of beams, and surface stress status.

## **12004 Mechanics of Materials (B)**

**Credits:** 4

**Credit hours:** 66

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Mechanics of Materials (B) is a compulsory course for majors of mechanical

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design and manufacturing automation. It aims to enable students to understand basic theories, concepts and analyzing methods of mechanics of materials, master formulas and principles of mechanics of materials, and develop their abilities to scientifically recognize different concepts, principles and terms of mechanics of materials. The contents of this course include introduction, axial tension and compression, geometric properties of section, twists, bending stress, displacement in girder bending, stress state and strength theory, stability of compressed column, energy transfer, strain analyses, dynamic load and repeated stress, and experiments.

## **12062 Engineering Mechanics**

**Credits:** 4

**Credit hours:** 66

**Categories:** Compulsory

**Prerequisites:** Advanced Mathematics, College Physics

### **Description:**

Engineering Mechanics is a compulsory course for majors of environmental engineering. It aims to enable students to understand basic concepts and laws of mechanics, master basic approaches of solving mechanical problems, and develop their abilities to solve simple mechanical problems in engineering, and analyze problems of statics. The contents of this course are statics, coplanar systems of concurrent forces, spatial force systems, introduction to mechanics of materials, axial tension and compression, bending internal force, bending stress and strength conditions of girders, stress state, combined deformation, and column stability.

## **12530 English Pronunciation**

**Credits:** 1

**Credit hours:** 16

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**Categories:** Compulsory

**Prerequisites:** None

**Description:**

English Pronunciation is a basic specialized course for students majoring in English. It aims at students' mastery of received English pronunciation, development of their abilities to read and communicate with natural and proper English pronunciation and intonation, and improvement of their pronunciation and intonation for communication through practices of pronunciation, listening and speaking. The contents of this course are vowels, consonants, strong and weak forms, sense group and pauses, liaisons, word stresses, sentence stresses, rhythms, and intonation.

## **12595 Japanese Writing (1)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Japanese Writing (1) is a compulsory course for students of Japanese. The purposes of this course are to enable students to comprehend relevant knowledge generally and lay a solid foundation for following writing practices. The main contents of the course cover foundation of modern articles, basic knowledge of writing, articles and styles, main body, paragraphs and sentences of articles, writing steps, basic rules of writing, notes, methods of selecting titles, designing structure, and common modified methods.

## **12596 Japanese Writing (2)**

**Credits:** 2

**Credit hours:** 32

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**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Japanese Writing (1) is a compulsory course for students of Japanese. The purposes of this course are to enable students to master how to write modern Japanese practical articles so as to further master main points of writing Japanese articles. The main contents of the course cover the stylistic features, text structure, modified means and writing skills of diary, letters, essays, thought, travels, reportage, instructions, contracts, reports, argumentation and exposition. It also covers exercises of different types of writing, such as narration, argumentation, practical writing, and rules and regulation of quality writings.

## **12601 English Listening (1)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

English Listening (1) is a basic specialized course for students majoring in English. The purposes of this course are to enable students to improve their abilities in listening comprehension and communication by providing systematic training for listening skills, and develop their abilities to master strategies for listening and to understand daily conversations by native speakers. This course covers strong and weak forms, link-ups, contractions, basic abilities of note-taking, making predictions, listening for main ideas, identifying specific information, and drawing inferences from contexts.

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## **12602 English Listening (2)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** English Listening (1)

**Description:**

English Listening (2) is a compulsory course for majors of English. It aims to enable students to develop their communicative abilities. The contents of this course are current news, films and video, academic English and related information, dictations, reproduction of news stories from Voice of America and British Broadcasting Corporations, and note-taking skills.

## **12603 English Listening (3)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** English Listening (1), English Listening (2)

**Description:**

English Listening (3) is a compulsory course for English majors. The aim of this course is to enhance students' skills of speaking, listening and writing and lay a solid foundation for English Listening (4), and translation, interpretation and communication abilities. Main contents are blank filling, main idea listening, dialogues, short passage, and listening comprehension of news.

## **12604 English Listening (4)**

**Credits:** 1

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**Credit Hours:** 16

**Category:** Compulsory

**Prerequisites:** English Listening (1), English Listening (2), English Listening (3)

**Description:**

English Listening (4) is a basic course for English majors. It aims to enable students to master techniques for English listening, speaking, and writing, understand listening materials of medium difficulty, such as VOA standard English and BBC news, and develop their abilities to think quickly, distinguish different accents correctly, analyze logically, and process, record, and memorize information exactly. The contents of this course are listening and interpretation, dictation of long sentences, listening to main ideas, select useful details, reasoning and conclusions.

## **12605 English Writing (1)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Integrated English

**Follow-ups:** English Writing (2), Advanced English Writing, Academic Writing

**Description:**

English Writing (1) is a compulsory course for English majors. It aims at improving students English writing skills, and their mastery of basic English writing theories, techniques, wording, sentence patterns and structures of narrative paper and essays. Main contents are basic requirements of English writing, wording, types and meanings of words, general and specific words, synonyms, rhetorical devices, English sentence writing, types of sentences, common sentence expressions, sentence cohesiveness and coherence, exemplification and induction, comparison and contrast, paper's outlining, structures and transitions.



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## **12606 English Writing (2)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** English Writing (1)

**Description:**

English Writing (2) is a compulsory course for majors of English. It aims to enable students to master basic knowledge and techniques in English writing, and familiarize all kinds of practical writings, thus laying a solid foundation for future thesis writing. This course covers Unity and Coherence of the Paragraph, Transitional Paragraph, Development of Paragraph, Development by Time, Development by Process, Development by Comparison and Contrast, Development by Cause and Effect, Development by Classification, Development by Definition, Development by Combination, Planning a Composition, Types of Outlines, Writing and Revising the Draft, Description of a person, Description of places, Description of objects, Description of scenes, Narration, and Exposition.

## **12610 Integrated English (1)**

**Credits:** 4

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Integrated English (1) is a compulsory course for students majoring in English. It aims to improve students' language proficiency and language awareness, consolidate their basic grammar and vocabulary, familiarize social and cultural background of English-speaking countries, and improve their comprehensive language skills related to listening, speaking and reading comprehension. This course covers Never Say

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Goodbye, Whatever Happened to Manners? When Lightning Struck, World of the Future, Dealing with AIDS, Towards a Gender Free Society , The Fun They Had, Five Traits of the Educated Man, World Wide Web Technology: What's Hot and What's Not? Hollywood, How to Be True to Yourself, She's Leaving Home, Darkness at Noon, Cultural Encounters, Salvation, and My Forever Valentine.

## **12611 Integrated English (2)**

**Credits:** 4

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Integrated English (1)

**Description:**

Integrated English (2) is a compulsory course for majors of English. It aims to enable students to develop practical skills of language and communication. The contents of this course are Colourful Language, Customs of Communication, Food Culture, Questions of Intelligence, Dreams of Life, Famous People, Average but Respectable Persons, Weather and Climate, Problems of Education, Thanksgiving and Easter.

## **12612 Comprehensive English (3)**

**Credits:** 4

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** Comprehensive English (1), Comprehensive English (2)

**Description:**

Comprehensive English (3) is a compulsory course for majors of English. It aims to enable students to enhance their English listening, speaking, reading and writing,

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and improve their comprehensive capability. This course covers Fresh Start, Tyranny of the Urgent, Chinese Food, Why I Want a Wife, The Company Man, Knowledge and Wisdom, The Chaser, Fun, Oh, Boy. You Could Die from It, On Becoming a Better Student, The Wonderful Lousy Poems, The Real Truths about Lies, Out of Step, A Magic Circle of Friends, Father Forgets, The Roots of Happiness: An Empirical Analysis, and “Take Over, Bos’n!”.

### **12613 Comprehensive English (4)**

**Credits:** 4

**Credit Hours:** 64

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Comprehensive English (4) is a basic course for English majors. It aims to enable students to understand reading materials, such as family life, ethnics and moral standards, culture and education, adventurous experiences, and social issues, master different expressions and features of various types of English writing, and develop their ability to communicate and think in English. The contents of this course are Never Give In, Never, Never, Never, Space Invaders, Alienation and the Internet, A View of Mountains, The Tapestry of Friendship, A French Fourth, The Selling of the President, The Monster, The Discus Thrower, and How I Found My Voice.

### **13001 College English (1)**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

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College English (1) is a compulsory general education course for non-English majors. Its objectives are to develop students' comprehensive language skills, especially in listening and speaking, so as to prepare them to communicate effectively in English in their future study, work and social interaction, and at the same time foster their cross-cultural communicative ability to adapt them to international communication in the process of China's rapid development of globalization and enhance their autonomous learning capacities. Under the guidance of modern FLT and ESL theories, this course primarily involves English language knowledge and skills, cross-cultural communicative strategies and language learning strategies. This course is the prerequisite for College English (2), and other ESP courses and specialized bilingual courses.

## **13002 College English (2)**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** College English (1)

**Description:**

College English (2) is a compulsory general education course for non-English majors. Its objectives are to develop students' comprehensive language skills, especially in listening and speaking, so as to prepare them to communicate effectively in English in their future study, work and social interaction, and at the same time foster their cross-cultural communicative ability to adapt them to international communication in the process of China's rapid development of globalization and enhance their autonomous learning capacities. Under the guidance of modern FLT and ESL theories, this course primarily involves English language knowledge and skills, cross-cultural communicative strategies and language learning strategies. This course is the prerequisite for College English (3), and other ESP courses and specialized

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bilingual courses.

### **13003 College English (3)**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** College English (2)

**Description:**

College English (3) is a compulsory general education course for non-English majors. Its objectives are to develop students' comprehensive language skills, especially in listening and speaking, so as to prepare them to communicate effectively in English in their future study, work and social interaction, and at the same time foster their cross-cultural communicative abilities to adapt them to international communication in the process of China's rapid development of globalization and enhance their autonomous learning capacities. Under the guidance of modern FLT and ESL theories, this course primarily involves English language knowledge and skills, cross-cultural communicative strategies and language learning strategies. This course is the prerequisite for College English (2) and other ESP courses, and lays a solid foundation for specialized bilingual courses.

### **13004 College English (4)**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** College English (3)

**Description:**

College English (4) is a compulsory general education course for non-English

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majors. Its objectives are to develop students' comprehensive language skills, especially in listening and speaking, so as to prepare them to communicate effectively in English in their future study, work and social interaction, and at the same time foster their cross-cultural communicative abilities to adapt them to international communication in the process of China's rapid development of globalization and enhance their autonomous learning capacities. Under the guidance of modern FLT and ESL theories, this course primarily involves English language knowledge and skills, cross-cultural communicative strategies and language learning strategies. This course is the prerequisite for College English (3) and other ESP courses, and lays a solid foundation for specialized bilingual courses.

### **13013 Oral English (1)**

**Credits:** 4

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Oral English (1) is a basic specialized course for students majoring in English. The purposes of this course are to enable students to master correct pronunciation and intonation and fluent oral expression, and develop their abilities to practise various conversations in different situations in their everyday life. This course covers Studying Abroad, Job Hunting, Motivation, Stress Management, Intelligence and Genius, Creative Thinking, Arts, Cinemas and Theatres, Economics, Globalization, Education, Wars, NGOs and NPOs, Medicine, Natural Disasters, and Outer Space Exploration.

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## **13014 Oral English (2)**

**Credits:** 4

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** Oral English (1)

**Follow-ups:** Visual-audio-oral English, English Speech, Advanced English, Interpreting

**Description:**

Oral English (2) is a compulsory course for majors of English. It aims to enable students to master English pronunciation, intonation and stress, and develop skills of retelling and speaking. The contents of this course are Self-introduction, Describing people, Hometowns, Holidays; countries, Celebrities, love stories, Sport stars, fitness, Role plays, Story-telling, Happiness; Environment and environmental protection, Wild animals, and Aliens and UFOs.

## **13015 Oral English (3)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Oral English (1), Oral English (2)

**Description:**

Oral English (3) is a compulsory course for English majors. It requires students to use simple everyday English in their conversation, answer questions related to reading and listening materials with correct intonation and grammar, and deliver coherent speeches for one to two minutes after certain preparations. Main contents are sessions on images of the twentieth century, Madonna, self-images, relationship with parents, boyfriends and girlfriends, the 1849 gold rush, making money treasured

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possessions, health, fitness, dieting, smoking, football, habits, weddings, marriage, mobile phones, computers, computer games, holidays, travel, tourism, descriptions; cosmetics surgery, dating, architecture, art, inventions, advertising, media, cinema, education and backpacking.

## **13016 Oral English (4)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Oral English (1), Oral English (2), Oral English (3)

**Description:**

Oral English (4) is a compulsory course for majors of English. It aims to enable students to understand cultural background and customs of western countries, and develop their oral communication abilities. This course covers “What makes you”, “The gender gap”, “Relationship”, “Mistaken identity”, “Food”, “Restaurant”, “Cities of the world”, “danger in the city”, “Conversations”, “Tendencies and habits”, “The lottery”, “Wishes & regrets”, “A medical case”, “Senses”, “Pet psychology”, “The future of the world”, “Crime and punishment”, “New words in English”, and “Giving money to charity”.

## **13124 Japanese Conversation (1)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Basic Japanese (1)

**Follow-ups:** Japanese Conversation (2)

**Description:**



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Japanese Conversation (1) is a compulsory course for students of Japanese. It aims to enable students to master basic sentence structures of Japanese and usage of auxiliary, develop awareness of language and their abilities of answering questions fluently and conducting simple conversation. The contents of this cover self-introduction, introducing others, invitations, refusals, asking, apologizing and thanking, topic development, and organization of good speeches.

### **13125 Japanese Conversation (2)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Japanese Conversation (2) is a compulsory course for students of Japanese. The purposes of this course are to enable students to master rules of pronunciation, tone and basic sentence intonation and basic knowledge of Japanese. The main contents of the course cover Tokyo-tone training, basic intonation of different sentences, such as statements, interrogatives, imperatives, and interjection; self-introduction, introducing others and being introduced; thanks and responses; query, hopes, apology and responses; agreements and disagreements; disappointments, regret, encouragement and surprise; asking and directing the way; blame, complaint; doubts and affirmation.

### **13126 Japanese Conversation (3)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

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**Description:**

Japanese Conversation (3) is a compulsory course for students of Japanese. The purposes of this course are to enable students to use rhythms close to standard Japanese to introduce topics briefly with basically correct expressions and start conversations about daily life and business of Japan and other overseas countries and regions. The main contents of the course cover training of communicative functions, including comparison, choices, suggestion, prohibition, plans, requests, accounting, praise and response, invitation, and conveying message. It also covers greetings, asking the way, dining, phoning, shopping, travelling, paying a visit, visiting patients, attending weddings and funerals, greeting, seeing doctors, tickets, and hotel booking.

**13129 Japanese Listening (1)****Credits:** 2**Credit hours:** 32**Categories:** Compulsory**Prerequisites:** Basic Japanese (1)**Follow-ups:** Japanese Listening (2)**Description:**

Japanese Listening (1) is a compulsory course for students of Japanese. It aims to enable students to understand phonetic features of Japanese, develop their sensitivity to pronunciation and intonation, and competence of Information feedback and listening comprehension. The contents of this course cover voice recognition, word recognition, dictations of short sentences, partial dictations, conversational practices, conversation and news dictations, practices of pronunciation and intonation, and comprehension of longer passages.

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## **13130 Japanese Listening Comprehension (2)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Japanese Listening Comprehension (2) is a compulsory course for students of Japanese. The purposes of this course are to enable students to understand listening materials with comparatively fast speed and rich contents successfully so as to possess listening ability which is required by International Japanese Language Proficiency Test Grade 3. The main contents of the course cover asking for letters of applications to school, who is that over there; what do you want; etiquette of festivals; wedding and funerals; what kind of job is fit for you; various kinds of phone calls; go straight ahead; thanks for your coming; life of studying abroad; personal consulting; grocery stores; reading machines; what would you do if you picked up money; ambulance; Europeanist dwelling house; and lifesaver.

## **13131 Japanese Listening Comprehension (3)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Japanese Listening Comprehension (3) is a compulsory course for students of Japanese. The purposes of this course are to enable students to understand dialogues which focus on school life to a degree of over 90% and academic reports to a degree of over 65%, and possess listening ability equal to the International Japanese

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Language Proficiency Test Grade N2. The main contents of the course cover questions about numbers, places, people, items, reasons, sequences, status and diagrams, exercises with and without pictures, exercises and analyses of papers for exams from 2005 to 2008, exercises and analyses of Model Test of Test for Japanese majors Grade 4.

## **13162 English Lexicology**

**Credits:** 2

**Credit Hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

English Lexicology is a compulsory course for English majors. It aims to enable students to master analytical methods of word structures and word-formation, understand historical evolution and its causes of word-formation, words' meaning, morphology, and develop their abilities to use English comprehensively. The contents of this course are overviews of English vocabulary, English word-formation, meaning of words, pragmatic meaning of words, changes of word meaning, sources of English vocabulary, lexical features of vocabulary in some major English-speaking countries, newly developed English vocabulary, English collocations, English idioms, basic knowledge of English dictionaries, uses of English dictionaries, memorizing methods of English vocabulary, and approaches to learning English vocabulary.

## **13196 Basic Japanese (1)**

**Credits:** 10

**Credit hours:** 160

**Categories:** Compulsory

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**Prerequisites:** None

**Follow-ups:** Basic Japanese (2)

**Description:**

Basic Japanese (1) is a compulsory course for students of Japanese. It aims to enable students to master knowledge of phonetic sounds, vocabulary and grammar, develop their comprehensive abilities to use Japanese and thus lay a foundation for further studies. The contents of this course are regular patterns of phonetics of Japanese, constitution of Japanese characters, pronunciation of Chinese Characters in Japanese, usages of various categories of words, constitution of Japanese judgment sentences and their meanings, flexible usages of adjectives, present, and past tenses of Japanese.

## **13197 Basic Japanese (2)**

**Credits:** 10

**Credit hours:** 160

**Categories:** Compulsory

**Prerequisites:** Basic Japanese (1)

**Follow-ups:** Basic Japanese (2)

**Description:**

Basic Japanese (2) is a compulsory course for students of Japanese. It aims to enable students to master knowledge of phonetic sounds, vocabulary and grammar required, develop their comprehensive abilities to use Japanese and thus lay a foundation for further study. The contents of this course are expressions of certain topics, explanation of things, ways to apologize and comfort patient, ways to express thanks, discussions with others and negotiation.

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## **13221 General Survey of Western Countries**

**Credits:** 2

**Credit Hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

General Survey of Western Countries is a compulsory course for English majors. It aims to enable students to master historical and geographic knowledge of the UK and USA, understand Britain and American political systems, cultural and educational systems, media, and customs, and develop their abilities to gain knowledge and think independently. The contents of this course are religions, philosophy, geography, history, culture, social life, and political systems related to western countries.

## **13298 Spoken English**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Spoken English is an elective course for students of economics and international trade. The purposes of this course are to enable students to master correct pronunciation and intonation, reproduction and conversational skills, culture background and conventions of major English-speaking countries, communicate, discuss and present in English in real-life situations, and improve their spoken English communication skills. The contents of this course cover moral values, human relationship, living habits, campus life, tour and sightseeing, environmental protection and shopping, cultural exchange, and business negotiation.

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## **13350 English Public Speaking**

**Credits:** 1

**Credit Hours:** 16

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

English Public Speaking is a compulsory course for English majors. It aims to enable students to master techniques of good writings and fluent expressions, understand basic theories of English public speaking and writing, and develop their abilities to speak English in public. The contents of this course are What is English Public Speaking, English Speech Writing, ways of making English speeches, techniques of English speech making, how to prepare English speeches, approaches to practicing English speeches, knowing the audience, and confidence building.

## **13352 English Grammar**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Integrated English (1), Integrated English (2), Integrated English (3)

**Description:**

English Grammar is a compulsory course for English majors. It aims to improve students' grammar and accuracy of English uses, and establish complete and systematic grammar learning, and communicative abilities. Main contents are English grammatical hierarchy, morphemes, phrases, clauses, sentences, sentence patterns, sentence conversions and extensions, coordination sentences, hypotactic clauses, noun clauses, adjective clauses, adverbial clauses, non-finite verbs, subjunctive mood,

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inverted sentences, and tenses.

## **13504 Visual-audio-oral English**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Visual-audio-oral English is a compulsory course for majors of English. It aims to enable students to understand dialogues, dramas and passages with medium difficulty. The contents of this course are: “Roll over, Beethoven!”, “What’s on the theater?”, “Every Jack has his Jill!”, “Beware of ads!”, “Does your best friend have four legs?”, “What’s in fashion?”, “Does money talk?” and “Crime does pay!”.

## **13506 Selected Readings from English Newspapers and Magazines**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Selected Readings from English Newspaper and Magazines is a compulsory course for English majors. The objectives of this course are to enable students to enlarge their vocabulary, improve their reading skills, and understand fundamentals (language and stylistic features) regarding English newspapers and magazines, and western politics, economy and culture. Main contents are sessions on geography, family, education culture and medical services, behaviour and customs, ideology and religious belief, and political systems.



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### **13833 Basic Japanese (3)**

**Credits:** 10

**Credit hours:** 160

**Categories:** Compulsory

**Prerequisites:** Basic Japanese (2)

**Description:**

Basic Japanese (3) is a compulsory course for students of Japanese. It aims to enable students to master knowledge and skills of Japanese, meet requirements of JLPT N2 and improve understanding of Japanese culture and society. The contents of this course cover expression of honorific, basic usages of causative passive voice, passive voices of Japanese, Japanese clothing design and kimono, Japanese kabuki, and Japanese cooking culture.

### **13834 Basic Japanese (4)**

**Credits:** 10

**Credit hours:** 160

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Basic Japanese (4) is a compulsory course for students of Japanese. The purposes of this course are to enable students to further master theoretical knowledge and skills of Japanese, improve their abilities to use knowledge learned comprehensively and deepen understanding of Japanese society and culture. The main contents of the course cover differences among determinative sentences, descriptive sentences, constative sentences, existential sentences, declarative sentences, interrogative sentence, imperative sentence and exclamatory sentences; analyses of

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simple sentences, sentences with clauses, main clauses and subordinate clauses, compound sentences and multilevel complex sentences; more than 100 useful sentences with fixed meaning; spoken and written language, common (familiar) and polite styles; honorific which includes language of showing respects and expressing modesty.

## **14059 Fundamentals of Material Science**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** College Physics, Physical Chemistry

**Follow-ups:** Fundamentals of Material Engineering, Material Testing Technology, Properties of Materials

### **Description:**

Fundamentals of Material Science is a compulsory course for students of material science and engineering. It aims to enable students to master fundamental theories of material science, and familiarize composition, structures and characters of materials and its relationship. The contents of this course cover atomic structures of materials, crystal structures of materials, point defect and diffusion, amorphous and amorphous materials, phase equilibrium and phase maps, kinetics of phase transformation, and microscopic structures.

## **14079 Material Testing Technology**

**Credits:** 2.5

**Credit hours:** 40

**Categories:** Compulsory

**Prerequisites:** Engineering Materials

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**Description:**

Material Testing Technology is a compulsory course for students of material science and engineering. It aims to enable students to basic principles, instrument structures and analytical methods of modern testing technology, and understand results and graphics of testing in professional documents. The contents of this course cover introduction to crystallography, X-ray diffraction analyses, transmission electron microscopy, scanning electron microscope, electron probe microanalysis, and phase analyses.

**14085 Fundamentals of Material Engineering**

**Credits:** 2.5

**Credit hours:** 40

**Categories:** Compulsory

**Prerequisites:** Physical Chemistry, Organic Chemistry

**Follow-ups:** Engineering Materials

**Description:**

Fundamentals of Material Engineering is a compulsory course for majors of material science and engineering and material modeling and control. It aims to enable students to master basic engineering knowledge of material preparation and applications, and thus lay a foundation for further study. The contents of this course cover solid forming of materials, liquid forming of materials, powder metallurgy, joining technique of materials, surface modification, and preparation technology of amorphous and composites.

**14500 Properties of Materials**

**Credits:** 2

**Credit hours:** 32

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**Categories:** Compulsory

**Prerequisites:** Engineering Mechanics, Fundamentals of Material Science

**Description:**

Properties of Materials is compulsory course for students of material science and engineering. It aims to enable students to master physical concepts and testing methods of all indexes, to figure out its interrelation and analysis its influence on mechanical properties, so as to provide the basis for intelligent use and correct choice of materials. The contents of this course are mechanical property of materials, impact ductility and rheotropic embrittlement of materials, fracture toughness property of materials, and wearability of materials.

## **15506 Introduction to Western Philosophy**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Introduction to Western Philosophy is a compulsory course for students of economics and international trade. The purposes of this course are to require students to acquire major philosophers and their major philosophical ideas in western philosophy, better understand western culture, improve cultural awareness and their abilities to think critically. The contents of this course cover Socrates, Aristotle, and Plato in ancient Greek philosophy, Augustine and Thomas Aquinas in Christian philosophy, rationalism and empiricism in modern philosophy, the Social Contract, philosophers such as Kant and Hegel, Nietzsche and Heidegger in modern philosophy.

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## **15030 Introduction to Logic**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Introduction to Logic is a compulsory course for students of all majors. It aims to enable students to master basic logic theories in order to enhance their logical thinking and logical skills in writing, public speaking and debating and to prepare themselves for future tests of logic in MBA, MPA, MC and ME. This course covers types of concepts and their relationship, definition and differentiation, categorical judgment and their equivalent relationship, syllogism, compound judgment and reasoning, inductive reasoning, analogous reasoning, argumentation and refutation, and basic laws of thinking.

## **15152 Current Situation and Policies**

**Credits:** 0.5

**Credit hours:** 8

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Current Situation and Policies is a compulsory course for all undergraduates as an important component of theory of ideology and politics in university education. It aims to enable students to understand domestic and international situations, correctly understand the Party's lines, principles and policies, fortify their faith and determination to follow the path of socialism with Chinese characteristics, and commit themselves to China's reform and opening-up and modernization. Diverse contents and teaching methods are adopted, according to changes of current situations

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and hotspots, such as great events, celebrations and anniversaries at home and abroad, including lectures on current socio-political situations, seminars, classroom teaching and discussion outside class.

### **15153 Current Situation and Policies**

**Credits:** 0.5

**Credit hours:** 8

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Current Situation and Policies is a compulsory course for all undergraduates as an important component of theory of ideology and politics in university education. It aims to enable students to understand domestic and international situations, correctly understand the Party's lines, principles and policies, fortify their faith and determination to follow the road of socialism with Chinese characteristics, and commit themselves to China's reform and opening-up and modernization. Diverse contents and teaching methods are adopted, according to changes of current situations and hotspots, such as great events, celebrations and anniversaries at home and abroad, including lectures on current socio-political situations, seminars, classroom teaching and discussions outside classes.

### **15154 Current Situation and Policies**

**Credits:** 0.5

**Credit hours:** 8

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

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Current Situation and Policies is a compulsory course for all undergraduates as an important component of theories related to ideology and politics in university education. It aims to enable students to understand domestic and international situations, correctly understand the Party's lines, principles and policies, fortify their faith and determination to follow the road of socialism with Chinese characteristics, and commit themselves to China's reform and opening-up and modernization. Diverse contents and teaching methods are adopted, according to the changes of current situations and hotspots, such as great events, celebrations and anniversaries at home and abroad, including lectures on current socio-political situations, seminars, classroom teaching and discussions outside classes.

### **15155 Current Situation and Policies**

**Credits:** 0.5

**Credit hours:** 8

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Current Situation and Policies is a compulsory course for all undergraduates as an important component of theory of ideology and politics in university education. It aims to enable students to understand the domestic and international situations, correctly understand the Party's lines, principles and policies, fortify their faith and determination to follow the path of socialism with Chinese characteristics, and commit themselves to China's reform and opening-up and modernization. Diverse contents and teaching methods are adopted, according to changes of current situations and hotspots, such as great events, celebrations and anniversaries at home and abroad, including lectures on current socio-political situations, seminars, classroom teaching, and discussions outside classes.

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## **15500 Outline of Modern Chinese History**

**Credits:** 2

**Credit Hours:** 32

**Category:** Compulsory

**Prerequisites:** None

**Description:**

Outline of Modern Chinese History is a general education course of political theory for all students. It is designed to enable students to master fundamentals of modern Chinese history and grasp its historical fact lines and laws of development, understand national history and current situations to raise their sense of patriotism and mission of constructing China into a powerful modern socialist country, understand how history and Chinese people choose Marxism, the Chinese Communist Party, and socialist road. This course covers the invasion of foreign capitalism and imperialism, hardships brought to the Chinese nation and its people by the allied force of foreign capitalism, imperialism and the Chinese feudalism, two historic tasks of winning national independence and emancipation, and of strengthening our country and making people rich in China's modern history, the processes, and experiences and lessons of the social elites and people's arduous exploration and tenacious struggle for survival and development of our Chinese nation in Chinese modern history.

## **15501 Moral Cultivation and Basics of Law**

**Credits:** 3

**Credit Hours:** 48

**Category:** Compulsory

**Prerequisites:** None

**Description:**

Moral Cultivation and Basics of Law is a general education course of political



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theory for all undergraduates. Based on the basic law development of students and combining theory with practice, this course provides students with convincing answers to problems of their concerns. It aims to cultivate students' political ideology, moral character and integrity, and legal consciousness under the guidance of the theory of Marxism-Leninism, Maoism and socialism with Chinese characteristics. The contents of this course cover college education orientation, systems of socialist core values, education in patriotism, ideals, beliefs and outlook of world and life, outlook of values, moral education and knowledge of basic laws.

## **15502 Introduction to Fundamentals of Marxism**

**Credits:** 2.5

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Introduction to Fundamentals of Marxism is a general education course of political theory for all students. It aims to enable students to apply fundamentals of Marxist philosophy to analyzing and investigating economic systems, political systems and ideology of capitalism, reveal the nature of economic systems, political systems and ideology of capitalism, understand historical processes, changes and trend related to development of capitalism, and acquire a thorough understanding of socialism and communism. The contents of this course cover Marxist philosophy, Marxist political economics and scientific socialism.

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## **15503 Introduction to Mao Zedong Thought and Theoretical System of Chinese Socialism**

**Credits:** 3.5

**Credit hours:** 56

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Introduction to Mao Zedong Thought and the Theoretical System of Chinese Socialism is a compulsory course of political theory for all undergraduates. This course is intended to help students understand that Mao Zedong thought and the theoretical system of Chinese socialism are two theoretical fruits of the development of Marxism in China, to foster a strong belief in building socialism with Chinese characteristics in students, and to fortify their awareness of and perseverance in adhering to the Party's basic line and the Party's basic program for the primary stage of socialism. This course essentially covers implications, evolution, theoretical systems, major viewpoints, the guiding significance, and the historic significance of the strategic thinking, such as Mao Zedong Thought, Deng Xiaoping Theory, the important thought of Three Represents, and the scientific outlook on development and the Party's line, principles, and policies.

## **15504 Introduction to Mao Zedong Thought and Theoretical System of Chinese Socialism (Practical Course)**

**Credits:** 2.5

**Credit hours:** 40

**Categories:** Compulsory

**Prerequisites:** 15503

**Description:**

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Introduction to Mao Zedong Thought and Theoretical System of Chinese Socialism is a practical course required for all undergraduates, which supplements 15503 -- Introduction to Mao Zedong Thought and the Theoretical System of Chinese Socialism (Theoretical Course). The objectives of this course are to help students combine theories with practice, consciously apply correct thinking and theories to observing the society and guide their own behaviour, raise their capability of analyzing and solving real-life problems, foster their creativity, strengthen their social responsibility and develop their teamwork spirit through deepening their understanding of the textbook materials, and consolidating their knowledge learned in classes in various activities designed for this course, such as watching videos and movies, and carrying out social investigation.

## **15506 Introduction to Western Philosophy**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Introduction to Western Philosophy is a compulsory course for students of economics and international trade. The purposes of this course are to require students to acquire the major philosophers and their major philosophical ideas in western philosophy, better understand western culture, improve cultural awareness and the ability to think critically. The contents of this course cover Socrates, Aristotle, and Plato in ancient Greek philosophy, Augustine and Thomas Aquinas in Christian philosophy, rationalism and empiricism in modern philosophy, the Social Contract, philosophers such as Kant and Hegel, Nietzsche and Heidegger in modern philosophy.

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## **17058 Basic Accounting**

**Credits:** 3

**Credit hours:** 38

**Categories:** Compulsory

**Prerequisites:** Marketing, Advanced Mathematics B

**Description:**

Basic Accounting is a compulsory course for students of economics and management. It aims to enable students to master basic concepts, theories and operation skill of statistics, have the ability of data collecting, questionnaire designing, and data processing, correctly explain and use common statistical indicator, use quantitative analysis method to solve practical problems in economic management. The contents of the course are collection and arrangement of statistics, description of statistic materials, management of statistic information, quantitative analysis, theory basis of inference, parameter estimation, hypothesis tests, inspection and variance analysis, correlate and regression, time series analyses, and indexes.

## **17078 Intermediate Financial Accounting**

**Credits:** 3

**Credit hours:** 48

**Categories:** Elective

**Prerequisites:** Basic Accounting

**Description:**

Intermediate Financial Accounting is an elective course for students of accounting and financial management. It aims to enable students to understand concepts and framework of accounting, including definitions of accounting elements, accounting recognition, measurement and reports, and develop their abilities to summarize financial operation of enterprises, deal with regular financial issues in the enterprise with the knowledge learnt, and master compiling of consolidated financial

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statement of enterprises. The contents of this course covers an overview of financial assets, accounting of cash on hand and cash in bank, accounting of other cash equivalents, definitions and categories of fixed assets, accounting of construction-in-process, and initial valuation of fixed assets.

## **17097 Finance**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Finance is a compulsory course for majors of marketing, politics and administration. It aims at enabling students to understand basic knowledge of finance, master basic theories, and improve students' professional quality. This course covers introduction to finance, concepts of financial expenditure, items of financial expenditure, introduction to financial revenue, principles of taxation, tax policies, bonds, national budgets, financial systems, and financial policies.

## **17553 Electronic Sand Table System of Business Production and Operation**

**Credits:** 1

**Credit hours:** 16

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Electronic Sand System for Business Production and Operation is a compulsory

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course for students of economics and international trade. The purposes of this course are to enable students to master operation methods of the electronic sand table system, familiarize operation principles, summarize operation performance, analyze actual management problems, develop team collaboration, communication techniques, and implementation through role plays, and stimulate students' initiatives in learning through competition simulation. The contents of this course cover products, raw materials, authentication, market, tax rate, workshops, assembly lines, finished goods, order demands, order regulations, strategic planning, marketing strategy, market development, product planning, production planning, financing strategies, and cost analyses.

### **17553 Sand Table System of Manual Operation in Production**

**Credits:** 1

**Credit hours:** 16

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Sand Table System of Manual Operation in Production is a compulsory course for students of economics and international trade. The purposes of this course are to require students to comprehensively and rapidly understand major operation flow of businesses through simulating sand table system; make innovative trials of business operation; develop their team communication and collaboration through the training of role plays; understand decisions of business operations and labor divisions, and stimulate their learning initiatives. The contents of this course cover purposes and preparation of simulating sand table systems, operation guidance at the initial stage, rules of simulating sand table systems and reflection on different years, and summary of simulating sand table systems.

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## **18007 Actuarial Aspect of Life Insurance (1)**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Calculus, Probability Theory, Interest Theory

**Follow-ups:** Actuarial Aspect of Life Insurance (2)

**Description:**

Actuarial Science of Life Insurance is a basic course for majors of insurance. It aims at students' mastery of basic concepts, theories and skills of actuarial science, and development of their abilities to analyze and solve practical problems and to describe insurance operations with actuarial symbols and languages. Main contents of this course are basic approaches and principles of actuarial science of life insurance, including functions of mortality table, net premium, and liability reserves.

## **18014 Trust and Lease**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Economics, Finance

**Description:**

Trust and Lease is an elective course for majors of finance. It aims to enable students to master basic concepts, principles and skills of trust and lease, develop students' skills to analyze, conclude and solve problems by applying knowledge learned to business transactions. This course covers concepts and components of trust, origin and development of trust, trust business in China, trust business overseas, legislation in trust, concepts and analyses of lease, procedures and decisions-making in lease, calculation of rents, lease contract, and lease accounting.

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## **18018 Risk Theory**

**Credits:** 3

**Credit hours:** 48

**Category:** Compulsory

**Prerequisites:** Probability, Mathematical Statistics, Insurance, Property Insurance

**Description:**

Risk Theory is a specialized course for students of insurance. The purposes of this course are to enable students to understand main models in risk theory, occurrence, avoidance and methods of scientific management of risk in economic activities. This course covers introduction to three basic risk models, including short-term individual risk model, short-term aggregate risk model, and long-term aggregate risk model. The first two models are directly applied to calculating net premium of insurance products; whereas long-term aggregate risk model is important to measure reinsurance, insurance regulation, profit and rating of non-life insurance. Meanwhile, the course also introduces application of risk theories to insurance under special conditions.

## **18024 Life Insurance**

**Credits:** 2.5

**Credit hours:** 40

**Categories:** Compulsory

**Prerequisites:** Insurance

**Follow-up Courses:** Insurance Accounting, Life Insurance Actuarial Mathematics,  
Selected Readings of Insurance Literature

**Description:**



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Life Insurance is a compulsory course for majors of Insurance. It aims to enable students to master basic concepts, theories and skills in life insurance, lay a solid foundation for their study of follow-up courses, and develop their professional understanding and ability of basic theories and practical skills in life insurance. Main contents of this course are introduction to life insurance, personal life insurance and annuity products, personal health and accident insurance products, group life insurance, management and operations of life insurance companies, and underwriting of life and health insurance.

## **18026 Marine Insurance**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Property and Liability Insurance, Risk Management and Insurance

**Description:**

Marine Insurance is an elective course for majors of insurance. It aims to enable students to master basic concepts, theories and operation techniques of marine insurance, and learn the whole sets of business of marine insurance and its operations and clauses in English, thus laying a solid foundation for their future practical jobs in insurance companies. Main contents of this course are general introduction to marine insurance, marine insurance contracts, definitions of marine insurance losses, types of marine cargo insurance and clauses, marine hull insurance, and marine insurance practices.

## **18030 Insurance Operation and Management**

**Credits:** 2.5

**Credit hours:** 40

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**Categories:** Compulsory

**Prerequisites:** Political Economics, Economics Probability Theory and Mathematical Statistics Insurance, Property Insurance, Personal Insurance

**Description:**

Insurance Operation and Management is a compulsory course for majors of insurance. This course aims to enable students to comprehensively understand complete operation processes of insurance businesses, develop their abilities to analyze and solve practical problems, master procedures and methods in the management of insurance companies, and have an in-depth understanding of insurance management activities. Main contents are insurance companies' behaviors, insurance companies' decisions, production process such as marketing, and underwriting and claims in insurance companies.

## **18041 Securities and Investment Analysis**

**Credits:** 3

**Credit hours:** 64

**Categories:** Elective

**Prerequisites:** None

**Description:**

Securities and Investment Analysis is a basic course for students of finance. It is designed to enable students to master operating mechanisms of security market, and the basic theories and methods of analyzing securities investment, develop students' abilities to figure out reasons for price fluctuations of securities from macro, meso, and micro level, and select suitable investing targets according to listed companies' operation. This course covers macro-economy, analysis of industry, relationships between fluctuations in macro economies and securities market, corporate analysis, K-line theory, tangent theory, shape theory, theory, and theories of prices and volumes.

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## **18046 Insurance Accounting**

**Credits:** 2.5

**Credit hours:** 40

**Categories:** Compulsory

**Prerequisites:** Risk Management and Insurance, Accounting

**Description:**

Insurance Accounting is a compulsory course for students of insurance. It is designed to enable students to master basic theories and knowledge of accounting and insurance, and understand definitions and features of insurance accounting and the connections and differences between GAAP accounting and SAP accounting. Main contents cover primary insurance revenue, premium reserves, cost calculating, special insurance calculating, reinsurance calculating, insurance investment calculating, and the financial statement and its analysis of insurance companies.

## **18067 Insurance Company Operations**

**Credits:** 2

**Credit hours:** 36

**Category:** Elective

**Prerequisites:** Political Economics, Economics, Probability Theory and Mathematical Statistics, Insurance

**Description:**

Insurance Company Operations is an elective course for majors of insurance. This course is designed to enable students to understand complete frameworks of insurance companies, master coordination among different departments and the whole process of operations of the insurance company, develop students' ability to analyze and solve practical problems. Main contents include forms and organizations of

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insurance companies, insurance supervision and operating environment, product development, distribution, underwriting and service, operations and co-ordinations among different departments within insurance companies.

## **18072 Cambridge Business English**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** College English

**Description:**

Cambridge Business English is an elective course for majors of finance and insurance. It aims to enable students to master basic skills of business English, understand western cultures and customs in business activities in order to behave appropriately, and develop their skills to communicate and deal with business in English. This course covers systems of post responsibility, company structure, company culture, stock, merging and acquisition, Commodities Fair, e-commerce, employee-motivation, industrial espionage, business ethics, and international brands.

## **18079 Interest Theory**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Advanced Mathematics

**Follow-ups:** Mathematics of Life Contingencies, Life Table Construction and Design,  
Life Insurance Actuarial Practice

**Description:**

Interest Theory is a compulsory course for students of insurance. This course is

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designed to enable students to master basic concepts, theories and methods of interest, develop students' ability to analyze and solve practical problems by applying theories of interest, thus laying a solid foundation for the study of follow-up courses. Main contents of this course are introduction to basic knowledge of interest theory including basic concepts of interest, annuities, yield rate, debt service, bonds and other securities, interest theory applications, and financial analysis.

## **18091 Actuarial Aspects of Life Insurance (2)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Actuarial Aspects of Life Insurance (1)

**Follow-ups:** Actuarial Practice of Life Insurance

**Description:**

Actuarial Aspects of Life Insurance (2) is an elective course for students of insurance. It aims to enable students to master basic concepts, theories, and skills of actuarial aspect of life insurance, develop students' abilities to analyze and solve practical problems, thus laying a solid foundation for the study of follow-up specialized courses. The contents of this course cover the rates of mortality by age and life table, actuarial present value of annuity, level premium, liability reserves, total premium and modified reserve, multiply-life functions, multiply risk models, and actuarial methods of pension plans.

## **18093 Automobile Insurance**

**Credits:** 2

**Credit hours:** 32

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**Categories:** Elective

**Prerequisites:** Insurance, Property Insurance, Life Insurance, Insurance Law

**Description:**

Automobile insurance is an elective course for majors of insurance. It aims to enable students to master basic principles, skills of automobile insurance, develop their abilities to analyze and solve practical problems, thus laying a solid foundation for their future careers related with automobile insurance. This course covers civil tort liability related with automobiles, automobile insurance contract, motor third party liability, automobile damage insurance, automobile insurance underwriting, automobile insurance rate, claim settlement, a general introduction of commercial vehicles insurance, practices of commercial vehicles insurance, insurance for car rental businesses, insurance for vehicle team, compulsory insurance, motorcycle insurance, settlement of losses in car accidents, marketing, and management of automobile insurance.

## **18094 Risk Management and Insurance**

**Credits:** 2.5

**Credit hours:** 40

**Categories:** Compulsory

**Prerequisites:** Insurance, Economics, Management, Probability Theory and Mathematical Statistics

**Description:**

Risk Management and Insurance is a core course for majors of insurance. This course aims at students' mastery of basic concepts, theories and methods of risk management and insurance, development of their abilities to make plans and arrangements of risk management for individuals and companies by applying general theories concerned. Main contents of this course are risks and risk management procedures, risk measures and risk management tools, risk management environment,

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alternative risk transfer, individual risk management, company or enterprise risk management, and case studies.

## **18097 Insurance Law**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Principles of Insurance

**Description:**

Insurance Law is an elective course for majors of insurance. The purposes of this course are to enable students to master insurance contract laws and insurance laws, develops students' ability to analyze and solve practical problems, understand the establishment, effectiveness, modification, rescission, invalidity, termination of the insurance contract, and learn to settle insurance disputes by applying legal means. Main contents of this course are basic legal principle and interpretation of law clauses, including classification, development, origins of insurance laws, insurance contract laws, insurance laws and case studies.

## **18106 Financial Marketing**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Commercial Bank Management

**Description:**

Financial Marketing is an elective course for majors of finance. It aims at students' mastery of basic theories and methods of marketing, market strategy designing, marketing tactics portfolio, and the building of corporate culture. Main

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contents are company marketing strategy planning for financial companies, designing of marketing tactics portfolio, writing of financial service project, and client-manager system and CRM system of financial companies.

## **18109 Reinsurance Principles and Practices**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Reinsurance Principles and Practices is an elective course for majors of insurance. It aims at students' mastery of basic concepts, theories and skills of reinsurance, and development of their abilities to analyze and solve practical problems in this field. The contents of this course cover terms of reinsurance, functions of reinsurance, major clauses of reinsurance contract, proportional reinsurance, non-proportional reinsurance, categories and operations of reinsurance business, reinsurance market, reinsurance planning, and management of reinsurance.

## **18110 Financial Markets (A)**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Macroeconomics, Microeconomics, Finance

**Follow-ups:** Security Analysis and Portfolio Management, Financial Derivatives, Fixed-Income Security Analysis, Security Investments.

**Description:**



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Financial Markets (A) is a compulsory course for students of finance. The purposes of this course are to enable students to understand basic concepts of financial markets and institutions, market structures of different financial instruments, features of yield risks, theories and applications of interest rate, portfolio selection problem, market efficiency, security valuation methods and derivative pricing theory. The contents of this course cover introduction to micro-structures of financial markets and basic theories of financial institutions, including interest rate and portfolio selection theory, basic security value analysis, derivatives markets and pricing theory, market efficiency and behavioral finance.

### **18123 International Credit**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Finance, International Finance

**Description:**

International Credit is an elective course for majors of finance. This course is designed to enable students to understand theories, practices and laws regarding international credits, master definitions, characteristics and processes of main business of international credits, and develop students' abilities to analyze and solve practical problems in case studies. Main contents are general introduction to international credit, pricing, risk management and decision-making, basic knowledge of confirming agent business, main types of medium and long term of credit in international trade, international syndicated loans, international financial institutes' loans, and summaries of case studies.

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## **18125 Business Simulation for Commercial Banks**

**Credits:** 1

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Commercial Bank Management, Bank Accounting

**Description:**

Business Simulation for Commercial Banks is an elective course for majors of finance and insurance. The purposes of this course are to enable students to equip themselves with teamwork spirits, develop their abilities to operate independently, and form a habit of internal control and risk prevention according to business procedures and principles. This course covers regulations of commercial bank accounting; business simulations of commercial bank deposits, corporate deposits, loans, settlement, property management, and management of gains or losses.

## **18126 Experiments in International Finance**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** International Finance, Financial Marking, Foreign Exchange Transaction

**Description:**

Experiments in International Finance is an elective course for students of finance. It aims to enable students to master basic theories and principles of international finance and foreign exchange, understand real-time prices of international financial market and international banking business regulations, and learn to simulate common international financial transactions and business operations. Main contents are basic principles of foreign exchange transaction, technical analysis of foreign exchange

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transactions, and foreign exchange transaction model operations. Also included in the contents are the whole process of international financial transactions and business operations through simulated experiments, and common rules and operation techniques in foreign exchange transactions such as spot foreign exchange transaction.

## **18127 Technical Analysis Experiments in Financial Transactions**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Financial Marketing

**Description:**

Technical Analysis Experiments in Financial Transactions is an elective course for finance majors. The purposes of this course are to enable student to strengthen their understanding of the theoretical knowledge of securities, develop their ability in practical operations, and familiarize China's trading mechanisms on stock market, and master analysis approaches to security investment. Main contents are analyses of security investment through analytical systems, and simulated stock transactions through simulated security trading systems.

## **18134 International Finance Correspondence**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

International Finance Correspondence is an elective course for majors of finance,

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it aims at students' mastery of basic concepts and techniques in writing of international finance correspondence in English, including letters, cables, telegrams and SWIFT, development of students' abilities of international finance correspondence writing and international banking business by having a good mastery of linguistic features and styles of different types of English financial correspondences. Main contents of this course are correspondence and telegrams in the establishment of agency relationship, confirmation letters (authorized signatures and test keys), credit inquiry, accounting business, international credit business, international settlement, inquiry business, guarantee business, and other transactional issues in banks.

## **18150 International Settlement**

**Credits:** 2.5

**Credit hours:** 48

**Categories:** Elective

**Prerequisites:** International finance, International Trade and Practice, International Cargo Transportation

### **Description:**

International Settlement is an elective course for majors of finance and international economic and trade. This course requires students to discover causes and procedures of payments in international economic associations, read selectively and familiarize relevant international customs, and understand some representative cases in international settlement and analysis on the arbitration of international settlement disputes given by international organizations such as International Chamber of Commerce. The contents of course are divided into five parts: outlines of international settlement, bills, methods of international settlement, international trade financing and risks, and case studies of international settlement. And three experiments are remittance, collection and letter of credit.

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## **18163 Financial Engineering**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Advanced Mathematics Financial Market, Portfolio Investment Management

**Description:**

Financial Engineering is an elective course for majors of finance. This course aims at students' mastery of basic concepts, theories, skills and methods of financial engineering, and main pricing methods for financial derivatives, development of students' abilities to analyze and solve practical financial issues by forming a financial engineering way of thinking and applying financial engineering techniques. Main contents of this course are fundamental theories and techniques of financial engineering, financial derivatives pricing, including introduction and theoretical systems of financial engineering, no-arbitrage equilibrium analysis, pricing of future and swap, binomial model, Black-Scholes model, and neutral risk analyses.

## **18164 Financial Law**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Political Economics, Economics, Probability Theory and Mathematical Statistics, Insurance

**Description:**

Financial Law is an elective course for majors of finance. It aims at students' mastery of basic concepts, theories and skills of financial laws, and development of

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students' abilities to analyze and solve practical problems. Main contents of this course are basic approaches and principles of financial laws, basic systems and frameworks of financial laws and common legal issues in the prevailing financial business, central bank laws, commercial bank laws, negotiable instruments laws, guaranty laws, and securities laws.

## **18175 International Monetary System**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Finance, International Finance

**Description:**

International Monetary System is an elective course for students of finance. This course aims to introduce students to evolution, development and reform vista of international monetary system and China's participation in international monetary system reform, enable students to understand overview of international monetary system and familiarize current international monetary system reform projects and future reform directions. The contents of this course can be divided into five parts: the establishment and evolution of international monetary systems, Breton Woods system, Jamaica system, international financial institutions, and orientation of international monetary system reform.

## **18187 Insurance**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

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**Description:**

Finance is a basic course for majors of finance and insurance. It aims at students' mastery of basic concepts, theories and skills of insurance, and development of students' abilities to analyze and solve practical problems in finance and insurance by applying basic principles of insurance. The contents of this course cover risk management, insurance responsibilities, insurance contracts, basic insurance principles, property and personal insurance, insurance management, insurance market and insurance regulations.

**18189 Bank Accounting**

**Credits:** 2.5

**Credit hours:** 40

**Categories:** Compulsory

**Prerequisites:** Finance, Basic Accounting

**Description:**

Bank Accounting is a basic course for majors of finance. This course aims at students' mastery of basic concepts, theories and skills of bank accounting, development of students' ability to describe business transactions with accounting symbols and languages. Main contents of this course are basic approaches and principles of bank accounting, including account establishment, double-entry accounting, recording and checking of documents and journals, account book keeping, deposit accounting, loan accounting, payment and settlement, and preparations of financial statements.

**18193 Central Banking**

**Credits:** 2

**Credit hours:** 32

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**Categories:** Compulsory

**Prerequisites:** Economics, Finance

**Description:**

Central Banking is a compulsory course for majors of finance. The course is designed to enable students to understand basic theories and businesses of the central bank, and develop students' abilities to detect, analyze and solve practical problems in finance by applying related theories. Main contents include basic theories of central bank, including properties and functions of central bank, its status quo and roles, and theoretical basis of central bank's monetary policies, case studies of central bank such as effects of China's expansionary (or deflationary) monetary policies in recent years, and liability, payment and settlement business of central bank.

## **18195 Investment Banking**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Investment Banking is an elective course for majors of finance. It aims to enable students to master operational mechanisms of market, basic concepts, methods and skills of investment banking; develop their abilities to solve practical problems, thus laying a solid foundation for undertaking jobs of banking investment and related businesses. This course covers security issuing and underwriting, security transactions, merging and acquisition, fund management, financial consultancy, risk investment, project financing, investment advice, asset securitization, and case studies.



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## **18200 Securities Investment**

**Credits:** 3

**Credit hours:** 64

**Categories:** Elective

**Prerequisites:** None

**Description:**

Securities investment is an elective course for majors of finance. It aims to enable students to master basic knowledge, operation and management of securities market and investment, develop their abilities to solve practical problems by applying learned knowledge of securities tools and securities market. This course covers securities, securities market, origin of securities market, characteristics and categories of securities, value and price of securities, categories of stocks, characteristics and categories of bonds, a general introduction of securities investment funds, management of securities investment funds, derivatives, markets of issues, and circulation.

## **18207 Real Estate Finance and Investments**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Economics, Finance

**Description:**

Real Estate Finance and Investments is an elective course for students of finance. It is designed to enable students to master basic concepts, theories and skills of real estate finance, develop students' abilities to analyze problems and use real estate finance and investments theories to solve practical problems. Main contents of this course are the basic approaches and principles of real estate finance and investments,

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including basic concepts, elements and system of real estate finance and investments, mortgage contract, housing finance market in the USA, mortgage calculation, financial derivatives of real estate, case studies of financial risk of real estate, and housing accumulated funds.

## **18208 Rural Finance**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Economics, Finance

**Description:**

Rural Finance is an elective course for students of finance. This course is designed to enable students to understand basic theories and knowledge of rural finance, and develop their abilities to analyze new issues in China's rural finance by applying theories in modern economics. Main contents cover fund movements, demands and supply of credits fund, financial system and features of rural credit cooperatives system in rural areas of China, development and reform of RCC systems before and after China's implementation of reform and opening-up policy, changes of RCC system under different social background, organization models and systems of RCC, government's administration of RCC and its joint organizations, and foreign rural finance.

## **18209 History of Finance Theory**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Political Economics, Economics, Finance

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**Description:**

History of Finance Theory is an elective course for majors of finance. The purposes of this course are to enable students to understand background, interpretations of policies and theories of modern economics, detect future orientation of researches on financial theory, and explore internal disciplines of financial theories. Main contents of this course are theories of money and banking, financial market, financial intermediary, international finance, development of finance, financial risk and its regulation and evolution, modern finance theory, and its latest development.

**18213 Theory and Transactions of Foreign Exchange****Credits:** 3**Credit hours:** 48**Categories:** Compulsory**Prerequisites:** None**Description:**

Theory and Transactions of Foreign Exchange is a compulsory course for majors of finance. It aims at students' mastery of basic concepts, theories and skills in foreign exchange transactions, and the development of students' abilities to apply what they have learned to address practical issues. Main contents of this course are the basic approaches and principles of foreign exchange transactions, including purchasing power parity, interest rate parity, general exchange rate equilibrium model, monetary and portfolio approach, spot foreign exchange transaction, forward foreign exchange transaction, foreign exchange swap transaction, foreign exchange future and foreign exchange option, and basic concepts about foreign exchange and foreign exchange market.

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## **18215 Commercial Bank Financial Management**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Finance, Commercial Bank Management

**Description:**

Commercial Bank Financial Management is an elective course for students of finance. The course is designed to enable students to master basic theories, methods and skills commercial bank financial management, and develop an in-depth understanding of interconnection among links of financial management and activities of commercial banks. Main contents include elementary theories of commercial bank finance (including the concepts, contents, goals and financial control environment of financial management), values of commercial banks' financial management (such as interest rates, time value, risk compensation and other issues), and capital management, asset management, cost management, revenue management, profit management, and financial analysis of commercial banks.

## **18216 Lectures on Frontier Theory of Finance**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Lectures on Frontier Theory of Finance is an elective course for students of finance and insurance. The purposes of this course are to enable students to acquaint themselves with current issues in financial theories, master basic concepts, theories and rationales related, and develop students' abilities to solve financial issues by

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applying current financial research methods. The contents of this course cover behavioral finance, analysis of fragilities in finance, asset prices and monetary policies, theories and practices of modern bank capital regulation, causes of economic bubbles, theories and practices of the financial crisis Early Warning System, credit risk management, crisis contagion of international balance in an open economy, and macro-policies.

### **18307 Internal Audit of Financial Institutions (A)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Financial Institution Accounting, Commercial Bank Management

**Description:**

Internal Audit of Financial Institutions (A) is an elective course for majors of finance. The course aims at students' mastery of fundamental theories, methods and skills of internal audit in financial institutions. Main contents are basic concepts and methods of internal audit of financial institutions, assessment of internal control, internal audit of central bank, policy bank internal audit, commercial bank internal audit, non-banking financial institution internal audit, internal audit of financial management of financial institutions, internal audit of financial computer information system, internal audit of demission, internal audit report and management.

### **18310 Finance**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Monetary Finance, Monetary Banking

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**Description:**

Finance is a core course for majors of finance. The purposes of this course are to enable students to master basic theories and knowledge of finance, familiarize China's financial policies, laws and regulations, develop their capacity of banking, securities, investment and insurance business, keep up with frontiers and development of related fields, and improve their abilities for research and practical work. This course covers basic theories and knowledge of finance, money movement, credit activities, financial institutions and financial market, monetary policies and financial control, financial reform, and preventions and solutions of financial crises.

**18314 Social Security****Credits:** 2**Credit hours:** 32**Categories:** Elective**Prerequisites:** Political Economy, Economics, Sociology, Insurance**Description:**

Social Security is an elective course for majors of insurance. It aims at enabling students to master basic theories of social security, understand economic and social background of social security systems, develop their abilities to analyze and solve practical problems such as China's rural social security, social security legislation. The contents of this course cover a general introduction of social security, investment and operation of social security funds, pension, medical insurance, unemployment insurance, policy and management of social welfare, special care and placement system, and social rural security.

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## **18315 Time Series Analysis**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Time Series Analysis is an elective course for majors of finance and insurance. It aims to enable students to master basic theories, methods and models of time series analysis, develop their ability of quantitative analysis by using software package, thus laying a solid foundation for future theoretical and practical researches. This course covers stationarity, ARMA model, nonstationarity, seasonal time series analysis, transfer function model, trend removal and seasonal adjustment, invertibility, spectral analysis, estimation, and forecasting.

## **18317 Credit Markets in Western Countries**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Finance, Credit Management

**Description:**

Credit Markets in Western Countries is an elective course for majors of finance. It aims to enable students to understand structures, components, market tools and supervision of crediting market in western countries, master corporate and personal crediting markets, and credit rating, develop their ability to analyze crediting market domestic and overseas, prepare themselves for related careers. The contents of this cover introduction, components and categories of credit markets in western countries, credit markets in America, corporate and personal credit markets, and credit rating.

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## **18331 International Investment**

**Credits:** 3

**Credit hours:** 48

**Categories:** Elective

**Prerequisites:** Microeconomics, Macroeconomics, Finance, International Trade, International Finance

**Description:**

International Investment is an elective course for students of finance. It aims at the development of students' abilities to analyze and comment on practical issues in international investment by applying principles and theories, thus laying a solid theoretical foundation for further academic research and practical operations of the international investment. Main contents of the course cover outlines of international investment, main theories of FDI and FII, environment of international investment, fundamentals of FDI, transnational corporations, transnational banks, FII, FFI, risk management of international investment, legal management of international investment, China's inward FDI, and outward FDI.

## **18333 Fixed Income Securities**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Microeconomics, Financial Market, Finance English

**Description:**

Fixed Income Securities is an elective course for majors of finance and insurance. It is designed to enable students to master the management of fixed income securities, and develop a sound understanding of up-to-date theories of fixed income security.



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Main contents are asset pricing, derivatives of fixed income security, risk values and up-to-date models, investment tools of fixed income security and the latest theories in investment management of fixed income security, and basic introduction to fixed income security in CFA.

## **18501 Property and Liability Insurance**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Insurance

**Description:**

Property and Liability Insurance is a core course for majors of insurance. It aims at students' mastery of basic concepts, theories and skills of property and liability insurance. Main contents of this course are basic principles and practice of property and liability insurance, including characteristics and types of property insurance, property insurance contract and its basic principles, property insurance market, fire insurance, transport insurance, engineering insurance, liability insurance, credit and guarantee insurance.

## **18502 Financial Management of Insurance Company**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Financial Management of Insurance Company is an elective course for students of insurance. This course aims to enable students to understand basic theories and

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processes of financial management of insurance companies, and make business plans. Main contents are basic concepts and theories of financial management, practical work of financial management of liquidators, codes of conduct in insurance accounting, value report, solvency, economic capital and medium and long-term business plans, and frontiers of financial management of insurance companies including credit rating and acquisitions.

### **18503 Insurance Marketing**

**Credits:** 2.5

**Credit hours:** 40

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Insurance Marketing is a core course for majors of insurance. It aims at students' mastery of basic concepts, theories and skills of insurance marketing, the development of students' insight and the ability to analyze and integrate issues, and the cultivation of their abilities to study issues related to the management of micro marketing of insurance establishments. Main contents of this course cover four sections: the foundation of insurance marketing, analysis of chance of insurance marketing, insurance marketing tactics, and management of insurance marketing.

### **18504 Insurance Information System**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

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Insurance Information System is an elective course for majors of insurance. The purposes of this course are to enable students to understand basic concepts and principles of insurance information system, acquire methods of analysis, design, implementation and evaluation of systems, and improve students' abilities to develop insurance information management systems by applying knowledge related. Main contents are the basic theory, techniques, methods and steps of how to plan, develop, operate, maintain and manage a variety of insurance management information systems.

## **18506 Core Insurance Business Simulation**

**Credits:** 1

**Credit hours:** 16

**Categories:** Elective

**Prerequisites:** All Compulsory Courses of Insurance Majors

**Description:**

Core Insurance Business Simulation is an elective course for majors of insurance. The purpose of this course are to enable students to master whole business model teaching systems of property insurance, life insurance, management and operations, and insurance marketing of insurance companies, and develop students' ability to operate the complete process of underwriting, renewal, claims settlement, reinsurance and management. Main contents of this course cover seven modules: enterprise property module, household property module, automobile module, marine cargo module, long term life insurance business module, health insurance business module, and pension business module.

## **18507 Life Table Construction and Design**

**Credits:** 2

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**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Probability, Mathematical statistics

**Description:**

Life Table Construction and Design is an elective course for majors of insurance. It aims to enable students to master basic theories, principles and calculation formula, develop their skills to calculate related figures and predict demographic make-up in the future by applying learned knowledge of life table. This course covers the survival model and its application, demographic statistics and smoothing methods, age processing with a large sample of data and calculation of the exposure, measures of death and fertility, population model, population planning and census application, smoothing of forms and data, and parameter smoothing.

## **18509 Personal Financial Plan**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Personal Financial Plan is an elective course for majors of finance. It aims to enable students to understand basic theories and practices of personal financial planning, familiarize self-management, master skills of investment and financing, and develop their abilities to analyze and compute personal financing cases. This course covers risk management, deposits, process of personal financial planning, management and financial analysis of cash flow, deposits planning, securities investment planning, property investment planning, educational investment planning, insurance planning, personal tax planning, retirement planning, estate planning, and personal financial services in China.

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## **18511 Annuity Insurance**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Insurance, Life Insurance

**Description:**

Annuity Insurance is an elective course for majors of insurance. This course is designed to enable students to master basic concepts, theories and skills of annuity insurance, and develop students' abilities to summarize problems and analyze products of annuity insurance. Main contents are basic principles and applications of annuity insurance, including annuity, categories of annuity insurance, and products of annuity insurance.

## **18512 Selected Readings in Insurance Anthology**

**Credits:** 1

**Credit hours:** 16

**Categories:** Elective

**Prerequisites:** All compulsory courses for insurance majors

**Description:**

Selected Readings in Insurance Anthology is an elective course for majors of insurance. It aims to enable students to understand theoretical frontiers and development, familiarize important academic journals, skilfully query anthology related to research subjects, develop students' research capability in raising, analyzing and solving problems, and master basic analysis frame and research methods of modern economics for research paper writing. Main contents cover risk management, and selected readings of classics related to insurance and actuarial.

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## **18513 Corporate Finance (A)**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Fundamental Accounting, Financial Accounting

**Description:**

Corporate Finance (A) is a core course for majors of finance. This course aims to enable students to master basic theories of modern corporate finance, enterprise financial accounting, familiarize basic economic and financial laws and regulations in corporate finance, and develop their financial management ability. Main contents include values of corporate finance, channels and methods of cash funding, capital cost and capital structure, liquid capital, internal long-term investment, external investment, profit distribution, and financial analysis.

## **18514 Introduction to Credit Administration**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Introduction to Credit Administration is an elective course for students of finance and insurance. The purposes of this course are to enable students to master basic theories and concepts of credit administration, familiarize principles and methods of credit business, and develop students' ability to practical issues they may encountered in social economies, thus laying a solid foundation for studying follow-up specialized courses. The contents of this course cover credit, developments in credit

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administration and its economy, introduction to credit administration systems, sources and integration of credit information, client management of credit administration, legislative systems of overseas credit administration, credit administration agencies overseas and its industrial management, and legislation of credit administration in China.

## **18515 Technical Economics and Project Evaluation**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Finance, Commercial Bank Management

**Description:**

Technical Economics and Project Evaluation is a compulsory course for students of finance. It aims to enable students to master basic theories, methods and skills of technical economics and project evaluation, familiarize basic principles and methods of market investigations and market forecasting, and develop their ability to conduct risk evaluations of investment projects. Main contents of this course cover nature and characteristic of technical economics, cash flow and time value of fund, basic financial data forecasting, calculation and applications of assessment indicators of economical consequences, assessment of economic benefits of enterprises and assessment of national economic benefits, and analysis of uncertainties in investment projects.

## **18516 Portfolio Investment and Management**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

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**Prerequisites:** Financial Marketing

**Description:**

Portfolio Investment and Management is a compulsory course for students of finance. This course aims to enable students to master main contents of modern investment including portfolio investment theory, capital and asset pricing theory, arbitrage pricing theory, and efficient market theory, and develop students' ability to analyze practical issues in security investment by applying knowledge of this course. Main contents include determination of investment return and risk, asset selection behavior of investors, portfolio selection, determination of price on security market, stock pricing models, efficiency of security market, financial futures and options along with their investment strategies, and evaluation and management of portfolio investment.

## **18517 Commercial Bank Management**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Advanced Mathematics, Finance, Macroeconomics, Microeconomics, Statistics and Accounting

**Description:**

Commercial Bank Management is an elective course for students of economics and international trade. The purposes of this course are to enable students to master basic knowledge and theories of commercial banks, each type of operation and management strategy related to modern commercial bank, improve students' ability to comprehensively analyze real-life problems in the management of commercial banks. The contents of this course cover functions of commercial banks in financial market, management of loan transaction and risk management of commercial banks, liquidity measurement, sensitivity gap and sustained gap management, history of development,



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functions and management principles of commercial banks, transaction types developed, and innovation and development of contemporary commercial banks, management theories of commercial banks, and evolution of management methods.

## **18518 Derivatives**

**Credits:** 3

**Credit hours:** 48

**Categories:** Elective

**Prerequisites:** None

**Follow-ups:** Financial Engineering

**Description:**

Derivatives is an elective course for students of finance. The purposes of this course are to enable students to master basic concepts and skills of derivatives and investment, develop students' innovative thoughts and practical abilities for derivative transactions and risk management, thus laying a solid foundation for the study of follow-up specialized course. The contents of this course cover the basic components of derivatives and market, basic concepts of derivative transactions and risk management, forward contracts and market, futures contracts and market, option contracts and market, other derivative contracts and markets, and applications of derivatives in risk management.

## **18522 Financial Regulation**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Finance, Commercial Bank Management, Security Investment

**Description:**

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Financial Regulation is an elective course for finance majors. This course aims to enable students to understand contents, evolution and theoretical bases of regulation of commercial banks, and objectives, principles and systems of financial regulation. Main contents are regulations of the market access, daily operation and market withdrawal of commercial banks, securities institutions, insurance agencies and other financial institutions, regulations of financial derivatives; regulations of financial security and international cooperation of financial regulations.

### **18523 Theory and Practice of Credit Rating**

**Credits:** 3

**Credit hours:** 48

**Categories:** Elective

**Prerequisites:** Economics, Monetary Banking, Management of Commercial Banking, Basic Banking

**Description:**

Theory and Practice of Credit Rating is an elective course for majors of insurance. It aims to enable students to master basic principles, methods and applications of credit rating, develop their skills to analyze and assess credit by integrating theories with practices. This course covers elements of enterprise credit, enterprise credit rating, model analysis of credit risk, collection and assessment of credit information, financial analysis of enterprise credit, risk decomposing and risk measurement, credit rating, and credit rating systems of enterprise contracts.

### **18526 Practice of International Financial**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

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**Prerequisites:** International Finance, International Trade, Commercial Bank Management, International Settlement, Financial Market, International Economics and Trade, and insurance

**Description:**

Practice of International Financial is an elective course for majors of finance and insurance. It aims at students' understanding of foreign currency management activities and transnational financial transactions, and general rules of international monetary and financial relations. Main contents cover international practice of foreign currency movements and transnational financial transactions, international monetary system, international capital flows, international monetary management institutions, foreign currency exchange and transactions, international payment and settlement, international financing transactions, introduction to international financial practices, and sessions of international investment financial practice, international trade and international monetary financial practices.

## **18556 International Finance**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

International finance is a compulsory course for majors of management and economics. It aims to enable students to master basic concepts, methods, and general changes of international financial market and international system, and develop their thinking patterns and ways of analysis from the global perspectives. The contents of this course are: preliminary knowledge of international finance including international balance of payment, foreign exchange reserves, foreign exchange trading and international financial market, international financial theories (including regulation

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theory of international balance of payment, foreign exchange determination theory, balance and regulation theory of open economy, international reserve theory, theories of debt crisis and currency crisis), international financial system and policies including foreign exchange control and currency convertibility, choices of exchange rate systems, international monetary systems, regional international monetary integration, international coordination of financial policies and international financial organizations, and international finance practice including international financial market, foreign exchange risk management, and foreign trade financing.

### **18563 Financial Analysis**

**Credits:** 3

**Credit hours:** 48

**Categories:** Elective

**Prerequisites:** None

**Description:**

Financial Analysis is an elective course for majors of finance and insurance. It is designed to enable students to master basic concepts, theories and skills of financial analysis, and develop students' abilities to analyze and solve practical issues in economies by integrating theories into practices. This course covers portfolio theories, pricing models of capital asset, portfolio, single index model (SIM), multi index model (MIM) and Arbitrage Pricing Theory (APT), futures and forward contract, option, Option Valuation, and analysis of foreign exchange risks.

### **18566 Enterprise Risk Management**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

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**Prerequisites:** Risk Management and Insurance, Finance, Investment

**Description:**

Enterprise Risk Management is an elective course for majors of insurance. It aims to enable students to master basic theories, strategies and methods of enterprise risk management, and develop their abilities to make risk management plans for enterprises. This course covers the introduction of risk and risk management, risk management and enterprise value, risk management strategy, post-loss financing methods, and alternative risk transfer.

## **18569 Credit Management**

**Credits:** 3

**Credit hours:** 48

**Categories:** Elective

**Prerequisites:** None

**Description:**

Credit Management is an elective course for majors of finance and insurance. It aims at students' systematic and comprehensive mastery of credit management, and development of their abilities to manage credit information, thus laying a solid foundation for their future jobs related to it. The contents of this course cover credit management of enterprises, the building of credit management department of enterprises, client management of enterprises, contract management of enterprises, credit sale management, credit guarantee management of enterprises, credit risk management, management of consumer credit, country (region) risks and industrial risk analysis, management model of asset portfolio, economic capital metrics and pressure test of commercial banks, loan risk pricing, credit risk control and external credit rating.

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## **18801 Personal Finance**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Personal Finance is an elective course for majors of finance and insurance. It aims to enable students to master basic theories and knowledge of financial planning, familiar with wealth management products, develop their capability of finance management, and abilities to analyze risks for clients by applying techniques of EXCEL. This course covers general introduction of finance management, CFP Authentication System, value orientation and behavior of clients, financial calculating devices and methods, family financial statements and budgets, residential house planning and real-estate investment, planning of educational reserves, financial planning of great events in life and practices of comprehensive financial planning.

## **18850 Financial English**

**Credits:** 3

**Credit hours:** 48

**Categories:** Elective

**Prerequisites:** Finance, Currency Banking

**Description:**

Financial English is an elective course for majors of finance. It aims to cultivate talents who are proficient in both finance and English, and prepare students for future test of PECT. This course covers a general introduction of China banking, supervision of banks and financial institutions, China's foreign exchange systems, accounting, intermediary business, bank credits, international settlement, securities and futures

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markets, fundamental insurance, and English correspondence in Finance.

## **19001 Econometrics (A)**

**Credits:** 3

**Credit hours:** 64

**Categorise:** Compulsory

**Prerequisites:** Probability and Mathematical Statistics, Macroeconomics

### **Description:**

Econometrics (A) is a compulsory course for majors of economics it aims to enable students to master basic concepts, theories and main modelling methods of econometrics, to understand main contents and procedures of econometric analysis work, and develop their abilities to operate some econometric software packages. Main contents of course are the basic approaches of econometrics, including single equation regression models, classic-assumption violated econometric questions, and simultaneous equation model and its applications.

## **19006 Multivariate Statistical Analysis**

**Credits:** 3

**Credit hours:** 56

**Categories:** Compulsory

**Prerequisites:** Mathematical Statistics

### **Description:**

Multivariate Statistical Analysis is a compulsory course for majors of statistics. It aims to enable students to master rationale and applications of different statistical methods, and relationships between them; develop their communication abilities such as speaking and writing, and ability to solve practical problems. This course covers concepts of multivariate statistical analysis, multivariate normal distribution,

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multivariate data graph, cluster analysis, discriminant analysis, principal components analysis, factor analyses, correspondence analysis, canonical analysis, multivariate regression analyses, and statistical analyses of qualitative information.

## **19007 Time Series Analysis**

**Credits:** 3

**Credit hours:** 56

**Categories:** Compulsory

**Prerequisites:** Stochastic Process

**Description:**

Time Series Analysis is a compulsory course for majors of statistics. It aims to enable students to master basic theories, methods and models of time series analysis, develop their ability of quantitative analysis by using software package, thus laying a solid foundation for future theoretical and practical researches. This course covers stationarity, ARMA model, nonstationarity, seasonal time series analyses, transfer function model, trend removal and seasonal adjustment, invertibility, spectral analyses, estimation, and forecasting.

## **19010 Bayesian Statistics**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Advanced Mathematics, Linear Algebra, Probability, Mathematical Statistics

**Description:**



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Bayesian Statistics is an elective course for majors of statistics. It aims to enable students to master the basic ideas and methods of Bayesian inference, develop their abilities to analyze common statistical distributions, thus laying a solid foundation for the study of follow-up specialized courses. This course covers prior, posterior distributions, Bayesian inference, loss, gains and utility functions in decision making, Bayesian decision, and Statistical decision theory.

## **19024 Market Research and Analysis**

**Credits:** 3

**Credit hours:** 52

**Categories:** Elective

**Prerequisites:** None

**Description:**

Market Research and Analysis is an elective course for majors of statistics. It is designed to enable students to understand market disciplines, master the theories and methods of market decision making, and develop their ability to solve practical problems. This course covers introduction of market research, design of market research program, methods of market research, design of sampling, questionnaire design, implementation of market research, collection and processing of research data, statistical analyses, and compiling of market research reports.

## **19030 Statistic English**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** College English

**Description:**

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Statistics English is an elective course for majors of statistics. It aims to enable students to master commonly used economic and statistical English words and expressions in order to read and translate economic works smoothly, thus laying a solid foundation for their future overseas study and English paper writing. This course covers statistics, objectives of statistics study, data collection, frequency distribution, statistical graph, measures of central tendencies, measures of dispersion, types of sampling, probability, hypothesis testing, correlation analyses, and time series.

### **19035 Mathematical Statistics**

**Credits:** 4

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** Linear Algebra A, Statistics, Probability

**Follow-ups:** Operational Research, Sampling Techniques, Multivariate Statistical Analysis, Econometrics B, Market Research

**Description:**

Mathematical Statistics is a compulsory course for majors of statistics. It aims to enable students to master basic thoughts and methods of statistical inference, develop their abilities to solve practical issues in economic management and engineering research by applying learned knowledge of statistics, thus laying a solid foundation for the study of follow-up specialized courses. This course covers probability, the basic concept of mathematical statistics, sampling distribution, parameter estimation, hypothesis testing, regression analyses, analyses of variance, experimental design, data mining, and statistical methods.

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## **19036 National Economics**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Political Economy, Economics, Finance, Public Finance, Statistics

**Description:**

National Economics is an elective course for majors of statistics. It aims at enabling students to master basic concepts, theories and methods of national economics, and skills to solve practical issues in macroeconomics, and develop their ability of qualitative and quantitative analysis combining practical issues. This course covers the general performance of national economy, consumer demand theory, theory of investment demand, money demand theory, theory of money supply and monetary policy, industrial restructuring and upgrading, regional economy, foreign-related businesses, economic growth theories, and sustainable and social development.

## **19037 Statistics**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Statistics is a compulsory course for students of economics and management. It aims to enable students to master basic concepts, theories and operation skills of accounting and lay a solid foundation for further study, familiarize accounting basic procedures, master basic skills of accounting and use accounting language to reveal accounting information in economic business. The contents of the course are basic theories, methods and skills of accounting, methods of financial accounting including

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setting up account charts, double entry, filling and auditing accounting documents, registering book of account, physical inventory, and compiling accounting statements.

## **19040 National Economic Statistics**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Macroeconomics, National Economy, Accounting, Linear Algebra

**Description:**

National Economic Statistics is a compulsory course for majors of statistics. It aims to enable students to master basic theories, skills and businesses of national economy, develop their ability to analyze and solve practical issues by applying the knowledge of national economic statistics, thus laying a solid foundation for the study of follow-up specialized courses. This course covers categories and accounting methods of national economy, accounting of domestic production and national income, input-output accounting, fund flow accounting, enterprise asset liability accounting, accounting of international balance, system of national account, accounting and analyses of national economic prices.

## **19043 Economic Forecasting and Decision-Making**

**Credits:** 3

**Credit hours:** 52

**Categories:** Compulsory

**Prerequisites:** Statistics, Macroeconomics, Microeconomics, Econometrics, Advanced Mathematics

**Description:**

Economic Forecasting and Decision-making is a compulsory course for majors

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of statistics. It aims to enable students to master a series of methods of economic forecasting and decision-making, develop their ability to forecast, analyze and solve practical issues, and make rational decisions. This course covers statistical forecasting, qualitative forecasting, forecasting by regression analyses, time series forecasting: smoothing and seasonal adjustment, forecasting by curvilinear trend model, forecasting by random time series, Markov Forecasting Model, forecasting by discriminant analysis, statistical decision making, decision making under certainty, decision making under uncertainty, and Bayesian decision.

### **19048 Statistical Analysis of Financial Investment**

**Credits:** 3

**Credit hours:** 52

**Categories:** Elective

**Prerequisites:** Econometrics

**Description:**

Statistical Analysis of Financial Investment is an elective course for majors of statistics. It aims at enabling students to understand quantitative characteristics of financial activities, master commonly used index and tools of statistical analyses of financial investment, and develop their ability to analyze financial investment benefits and risks. This course covers procedures and methods of financial investment analyses, analyses of security theoretical value, macro-level analyses of security investment, meso-level analysis security investment, analyses of security investment companies, and technical analyses of security investment.

### **19050 Statistical Analysis of Macroeconomics**

**Credits:** 3

**Credit hours:** 48

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**Categories:** Elective

**Prerequisites:** Statistics, National Economics, Macroeconomics

**Description:**

Statistical Analysis of Macroeconomics is an elective course for majors of statistics. It is designed to enable students to understand statistical analyses of macroeconomics, develop their abilities to solve practical problems by applying macroeconomics theories and modern statistical analysis. This course covers statistical analysis of aggregate social supply and demand, national income distribution, consuming demand, investment demand, industrial restructuring, cash flow, inflation, business cycle, economic growth, macroeconomic benefits, and international economy.

## **19060 Data Mining Technology**

**Credits:** 3

**Credit hours:** 64

**Categories:** Elective

**Prerequisites:** Database Theory, Statistics

**Description:**

Data Mining Technology is an elective course for majors of statistics. It aims at enabling students to master basic concepts, theories of data mining, and basic methods of modeling and analyses, and develop their abilities to solve practical issues in business. This course covers general introduction to data mining, data warehousing, preprocessing of data, data mining primitive, language and system structure, concepts of data mining, association rules, classification and forecasting, clustering analyses, data mining of complex types, applications and development trends of data mining.

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## **19066 Econometrics (B)**

**Credits:** 4.5

**Credit hours:** 80

**Categories:** Compulsory

**Prerequisites:** Economics, Probability, Mathematical Statistics

**Description:**

Econometrics (B) is a compulsory course for majors of statistics. It aims to enable students to understand characteristics of modern economics, master basic theories and methods of econometrics, develop their capacity of simple econometrics modeling, and to analyze quantitative relations in real economy. This course covers econometrics, Simple linear regression model, multiple linear regression model, extension of regression, heteroscedasticity, autocorrelation, multicollinearity, simultaneous equation systems, and single equation econometric models.

## **19071 Sampling Techniques**

**Credits:** 3

**Credit hours:** 52

**Categories:** Compulsory

**Prerequisites:** Probability, Mathematical Statistics, Statistics

**Description:**

Sampling Techniques is a compulsory course for majors of statistics. It aims to enable students to master basic theories, skills of sampling and parameter estimation, understand the causes and solutions of non-sampling errors, develop their abilities to design and implement sampling surveys independently, thus laying a solid foundation for follow-up studies and researches. This course covers significance and functions of sampling survey, basic theories of sampling survey, simple random sampling, stratified random sampling, cluster sampling, systematic sampling, two-step and

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multi-stage sampling, ratio estimation and regression estimation, sampling with unequal probability, and non-sampling errors.

## **19300 Probability**

**Credits:** 4

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** Advanced Mathematics (A2)

**Follow-ups:** Mathematical Statistics

**Description:**

Probability is a compulsory course for majors of statistics. It aims to enable students to master basic concepts, theories and applications of probability, have a theoretical foundation for random data analysis, and develop their abilities to solve practical problems, thus laying a solid foundation for the study of follow-up specialized courses. This course covers probability, random variables, multiple random variables, mathematical statistics, sampling distributions, parameter estimation, hypothesis testing, laws of large numbers, and central limit theorem.

## **19301 Statistical Software Application**

**Credits:** 3

**Credit hours:** 48

**Categories:** Elective

**Prerequisites:** Statistics

**Description:**

Statistical Software Application is an elective course for majors of statistics. It is designed to enable students to familiarize applications of commonly used statistical software, understand components, characteristics and programming language of



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statistical software, and master basic data mining methods. This course covers Eviews statistical software, Eviews programming, analyses and prediction of linear regression, ARMA model, ARCH model, SPSS statistical software, nonparametric testing, contingency tables, and clustering analyses.

## **19302    Operation Research**

**Credits:** 3

**Credit hours:** 48

**Categories:** Elective

**Prerequisites:** Calculus, Linear Algebra, Probability, Mathematical Statistics

**Description:**

Operation Research is an elective course for majors of statistics. It aims at enabling students to understand characteristics of operation researches, master major theories and methods of operations researches, develop their abilities to analyze systems, and solve practical problems by modeling, and form a comprehensive perspective of optimization. This course covers linear programming, objective programming, dynamic programming, network analysis, decision making, storage theory, and queuing theory.

## **19303    Statistical Quality Control**

**Credits:** 3

**Credit hours:** 48

**Categories:** Elective

**Prerequisites:** Statistics, Mathematical Statistics, Econometrics, Sampling Techniques

**Description:**

Statistical Quality Control is an elective course for majors of statistics. It aims at

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enabling students to master basic concepts, methods of quality control, and the skills to analyze data by using Minitab, and develop their abilities of qualitative analyses and management in order to solve practical problems. This course covers quality control, foundation of statistics, commonly used quality control tools, statistical process control, hypothesis testing, analysis of variance, scatter diagram and regression analysis, experimental design, quality control innovative tools, measurement systems analysis, uncertainty of measurements, and sampling.

## **19308 Investment Project Appraisal**

**Credits:** 3

**Credit hours:** 48

**Categories:** Elective

**Prerequisites:** Statistics, Accounting, Finance

**Description:**

Investment Project Appraisal is an elective course for majors of statistics. It is designed to enable students to master basic theories and methods of project appraisal, develop their ability to appraise medium and small-size projects, with a focus on development trends of theoretical methods of project appraisal, thus laying a solid foundation for the study of follow-up specialized courses. This course covers analyses of project background, marketing research, analyses and evaluation of production scales, construction conditions, factory sites, arts and crafts, investment estimation and capital raising, data estimation of financial bases, project financial appraisal, appraisal on national economic projects, uncertainty analysis of projects, and social value assessment related to projects.

## **19318 Economic Game Theory**

**Credits:** 3

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**Credit hours:** 48

**Categories:** Elective

**Prerequisites:** Calculus, Linear Algebra, Probability, Mathematical Statistics

**Description:**

Economic Game Theory is an elective course for majors of statistics. It is designed to enable students to understand basic theories, ideas and rationales of game theory, master methods to analyze game theory, develop their abilities to observe and analyze political, economic, military, managerial issues by applying game theory. This course covers static games of complete information, Nash equilibrium, static games of incomplete information, Harsanyi transformation, Bayesian-Nash equilibrium, auction theory, Dynamic Games of Complete Information, dynamic games of incomplete information, and Sub-game Perfect Nash Equilibrium.

## **19325 Nonparametric Statistics**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Advanced mathematics, Linear Algebra, Probability, Mathematical Statistics

**Description:**

Nonparametric Statistics is an elective course for majors of statistics. It is designed to enable students to master basic concepts and methods of nonparametric statistics, understand differences between nonparametric statistics and parametric statistics, and develop their abilities to solve practical problems by applying methods of nonparametric statistics. This course covers statistical estimation and hypothesis tests in a single sample, two samples and multiple samples, association analyses of disaggregated data, relations between numerical data, nonparametric inference on correlation and regression coefficient, nonparametric density estimation, and

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nonparametric statistics.

## **19505 Random Process**

**Credits:** 3

**Credit hours:** 48

**Categories:** Elective

**Prerequisites:** Advanced mathematics, Linear Algebra, Probability

**Description:**

Random Process is an elective course for majors of statistics. It is designed to enable students to master basic concepts, theories, methods and applications of random process, and develop their ability of modeling and analyses by applying the knowledge learned in order to solve practical problems. This course covers basic concepts and types of random process, Poisson process, updated processes, Markov process, second moment progress, stationary progress, martingale, and Brownian movement.

## **19506 Statistics of Business Operation**

**Credits:** 3

**Credit hours:** 48

**Categories:** Elective

**Prerequisites:** Statistics, Mathematical Statistics

**Description:**

Statistics of Business Operation is an elective course for majors of statistics. It aims to enable students to master methods of collecting and processing information, develop their abilities to analyze enterprise economic phenomena. This course covers statistics and analysis of fundraising, operating result, wages, production equipments, raw materials and resources, scientific developments, external investments, markets, accounting, economic benefits, and credit rating of modern enterprises.

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## **19507 Monetary and Financial Statistics**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Statistics, Economics

**Description:**

Monetary and Financial Statistics is an elective course for majors of statistics. It is designed to enable students to master basic theories and methods of monetary and financial statistics, and develop their abilities to identify practical problems through economic and financial data and solve them, thus laying a solid foundation for their future careers related with financial statistics and financial businesses. This course covers general introduction of monetary and financial statistics, statistics of central bank and commercial bank, insurance statistics, statistics of current circulation, statistics of interest and interest rate, external financial statistics, statistics of financial market, accounting of cash flow, and financial risk statistics.

## **21002 Regional Economics**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Microeconomics, Macroeconomics

**Description:**

Regional Economics is a compulsory course for students of economics and international trade. The purposes of this course are to enable students to master basic concepts, theory, professional skills and analyzing methods of regional economics, apply theories of regional economics to investigate real-life problems of China's

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regional economic development, improve their professional skills to contribute to China's regional economic construction and advance regional economic coordinated development. The contents of this course cover contents, research objectives, research methods of regional economics, regional economic development models, structural analysis of regional industry, evolution patterns and their factors in industrial structure, and selection standards of regional leading industries.

## **21008 Econometrics**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Macroeconomics, Microeconomics, Calculus, Linear Algebra, Probability and Statistics

### **Description:**

Econometrics is a compulsory course for students of economics and international trade. The purposes of this course are to enable students to master setting rules and introducing methods of dummy variables, diagnostic approaches and remedial measures of multicollinearity, heteroskedasticity, and autocorrelation; apply econometrics software such as Eviews to evaluating econometric models; integrate the economic realities to analyze results; improve students' synthetic abilities and initiatives in analyzing and solving problems. The contents of this course cover the basic assumptions of unitary and multiple linear regression, parameter estimation and hypothesis testing, and fundamental concepts such as multicollinearity, heteroskedasticity, and autocorrelation.

## **21009 International Commercial Law**

**Credits:** 3

**Credit hours:** 48

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**Categories:** Compulsory

**Prerequisites:** International Trade, Practice of International Trade

**Description:**

International Commercial Law is a compulsory course for students of economics and international trade. The purposes of this course are to enable students to master the legal environment of commerce, understand how to standardize behavior, protect legitimate rights and interests, avoid, transfer or lower risks when facing increasingly competitive global market and trade frictions to develop international trade and drive economic growth. The contents of this course cover the convention of international commercial issues and international trade in relation to each link of international trade and business operation, laws of domestic civil and commerce related to organizations and trade of commercial issues of each state, such as contract laws, sales laws of international goods, international product liability laws, laws of agency related to international commercial issues, organizational regulations of commercial issues, and laws of intellectual property.

## **21010 International Marketing**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Marketing

**Description:**

International Marketing is an elective course for students of economics and management. The purposes of this course are to enable students to understand theories of economic science, behavior science and management, familiarize development of marketing, essence of customers' behavior, composition of marketing mix, master skills of managing and controlling marketing. This course covers basic concepts of international marketing, theories of modern international marketing, analysis of

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international marketing environment, analysis of international marketing competitive strategy, target marketing, structures of information system of international marketing and information collection, international marketing strategy.

## **21011 Introduction to World Trade Organization**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Introduction to World Trade Organization is an elective course for students of economics and international trade. The purposes of this course are to enable students to master status of the latest development of WTO, analyze international and domestic events related to trade, and develop their abilities to analyze and solve real-life economic problems. The contents of this course cover historical background of WTO, introduction to multilateral trades, mains content and organization of framework agreement, the basic principles and each rule of WTO, development of the new round, processes of China's entering into WTO; and opportunities and challenges China encountered after joining WTO.

## **21015 New Institutional Economics**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Microeconomics, Macroeconomics

**Description:**

New Institutional Economics is a compulsory course for students of economics



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and international trade. The purposes of this course are to enable students to master basic theories and research methods of new institutional economics, apply theories and methods of new institutional economics to analyzing real-life problems in China's reform and development. The contents of this course cover research objectives of new institutional economics, fundamental laws of institutional constitution and functions, institutional demand and supply, institutional transformation and innovation, institution, state, acts of the government, institution and economic development, modern enterprise contract theory and enterprise institutional arrangement, new institutional economics and China's reform and development.

## **21017 Business English**

**Credits:** 3

**Credit hours:** 48

**Categories:** Elective

**Prerequisites:** None

**Description:**

Business English is an elective course for students of economics and international trade. The purposes of this course are to enable students to lay a solid foundation in English language competence, skills and vocabulary in business English, use English to describe activities in economics and trade, develop practical skills of listening, speaking, reading and writing in business activities by applying theories to practices. The contents of this course cover learning and differentiation of specialized vocabulary, English expressions in business English, training of reading and writing in Business English, processes and descriptions of business activities.

## **21019 Securities Analysis**

**Credits:** 2

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**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Economics, Financial Accounting, Financial Marketing

**Description:**

Securities Analysis is an elective course for students of economics and international trade. The purposes of this course are to enable students to master basic theories, knowledge and skills in securities investment, pricing theory and risk mechanism of financial assets (including bonds and shares), features of participants' behavior in securities market, management models of securities information and transaction, and improve students' abilities to analyze and solve real-life problems in securities investment. The contents of this course cover basic notions of securities investment, and analyzing methods of securities investment, value analyses and pricing issues of financial assets, basic analysis, technical analyses, and investment combinatory analysis of securities investment, philosophy and strategies of securities investment.

## **21020 International Settlement**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** International Finance, International Trade and Practice, International Freightage, Insurance and Finance, Accounting

**Description:**

International Settlement is a compulsory course for students of economics and international trade. The purposes of this course are to enable students to master basic principles and methods of international settlement, and basic skills in practice and operation of international settlement, operational flows of each major international settlement in banks, the latest development and innovation in international settlement

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and related businesses, the latest development in the related international conventions of international settlement, so as to build a platform for their future careers. The contents of this course cover an introduction to international settlement, bills and approaches of international settlement, financing and risks of international trade, and case studies of international settlement.

## **21024 Operational Research**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Operational Research is an elective course for students of economics and international trade. The purposes of this course are to enable students to master development of operational research, develop their ability to quantitatively analyze and solve managerial problems, have in-depth insights to investigate sophisticated managerial problems with multiple variables, improve students' capacity of decision-making quantitatively with the support of skills in computers and specialized knowledge. The contents of this course cover basic philosophy and concepts of operational research, linear programming, transportation problems, queuing theory, decision analysis, simplex methods, network analysis, random processes and dynamic programming.

## **21025 Marketing**

**Credits:** 3

**Credit hours:** 48

**Categories:** Elective

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**Prerequisites:** None

**Description:**

Marketing is an elective course for students of economics and international trade. The purposes of this course are to enable students to master basic knowledge and skills in marketing, construct and reinforce thinking models of marketing, improve students' abilities to deal with and operate real businesses. The contents of this course cover origins, evolution and the latest development of marketing, basic notions such as market, marketing management, and marketing, concepts of marketing management and its significance in enterprise marketing, major steps and contents of enterprise strategic planning, main contents of management process of enterprise marketing, including marketing environment, consumer market, organizational market, through which marketing opportunities are found and environmental threats are avoided; market categorization, basic theories, principles and methods of selecting target market and market positioning, strategies of products, pricing, marketing channels, logistics, personal marketing, advertisement, methods and measures of sales promotion, and strategies of public relations.

## **21027 Introduction to Economics**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Introduction to Economics is an elective course for students of finance and economics. It is designed to enable students to master basic analyzing methods and theories of economics, understand correctly the general rules of operations related to market economy, develop their ability to analyze practical economic situations home and abroad. This course covers principles of supply and demand and equilibrium price;

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theory of customer behavior; theory of producer behavior; basic theories of operation of national economy; unemployment, inflation and economic contraction; fiscal policy and monetary policy in the government macroeconomic coordination; economic growth, and sustainable development.

## **21027 Introduction to Economics**

**Credits:** 3

**Credit hours:** 38

**Categories:** Compulsory

**Prerequisites:** Marketing, Advanced Mathematics B

**Description:**

Introduction to Economics is a compulsory course for students of economics and finance. It aims to enable students to master basic analysis methods and theories of economics, understand basic rules of market operation, and analyze foreign and domestic economic issues and phenomenon. The contents of the course are principles of supply and demand and equilibrium price, theories of customer behavior, theories of producer behavior, basic theories of operation of national economy, unemployment, inflation, economic retrenchment, financial and monetary policy of macro control, economic growth, and sustainable development.

## **21029 Political Economics**

**Credits:** 3

**Credit hours:** 48

**Categories:** Elective

**Prerequisites:** None

**Description:**

Political Economics is an elective course for students of economics and international trade. The purposes of this course are to enable students to master basic

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economic theories and knowledge, and major economic principles, understand principles of social development, foster ideological consciousness, and develop students' ability to apply standpoints, perspectives and methods of Marxism to analyzing and resolving real-life problems. The contents of this course cover general principles of human social development, the emergence and development of capitalistic economic system, a number of economic categories and theories related to market economic system on which capitalistic economic system relies, such as laws of monetary circulation, laws of value, capital rotation, and capital turnover.

### **21030 Business Administration of Multinational Corporations (A)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Business Administration of Multinational Corporations (A) is an elective course for students of economics and international trade. The purposes of this course are to enable students to master basic principles of management and operation behavior of multinational corporations, develop students' ability to analyze and solve real-life problems in operation activities of multinational corporations. The contents of this course cover basic theories of business and management of multinational corporations, the latest development of managing multinational corporations, characteristics of business and management of multinational corporations in China, macro operational environment of multinational corporations, strategies of multinational management, strategies of international investment, marketing, internal trade conditions, conditions of transfer of technologies, and relationship with the government.

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## **21032 International Finance**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Macroeconomics, Microeconomics, International Trade

**Description:**

International Finance is an elective course for students of economics and management. The purposes of this course are to enable students to understand theories, policies and practical issues in international finance, familiarize basic principles of international financial market and operations of international monetary systems, improve their abilities to operate international investment, exchange rate system, currency exchange and international settlement. The course covers theory of international payment, theory of foreign exchange, exchange rate system, foreign exchange transaction, foreign exchange reserve management and international financial market.

## **21033 Futures and Option**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** International Finance, Security Analysis and Investment

**Description:**

Futures and Option is an elective course for students of economics and international trade. The purposes of this course are to enable students to master basic knowledge and theories, operational methods and techniques of futures and option and other financial derivative instruments in futures and option with leading edge, accommodate changes and development requirements brought by future market economy, and actively get involved in international market competition. The contents

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of this course cover basic concepts in futures, futures contract, futures market, institutional framework, futures exchanges, futures brokerage companies, regulations of futures exchanges, formulation of transaction plans, hedging and speculation, risk avoidance of futures exchanges, and analyses of futures price trends.

## **21045 Introduction to World Economy (B)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Introduction to World Economy (B) is an elective course for students of economics and international trade. The purposes of this course are to enable students to master basic theories of world economy, intensively reflect on specific real-life problems in China, comprehensively understand basic economic systems and policy of each nation in the world, and consciously get involved in the whole process of China's reform and opening up. The contents of this course cover concepts and contents of world economy, differences and connections between world economy and international economy, nature, contents, factors and performance of economic globalization, contents and characteristics of the post-war revolution of science and technology, natural endowment of human and material resources in each country (region) worldwide, scale, structure, policy and system of international trade, production internationalization, international direct investment, multinational corporations and their development, and performance and influence of financial globalization.



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## **21050 Consumer Economics**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Consumer Economics is an elective course for students of economics and international trade. The purposes of this course are to enable students to master roles and functions of consumer economics in social reproduction, research objectives and contents of consumer economics, theoretical systems of consumer economics, relationship between consumer economics and other related disciplines in the field of consumer economics, improve students' ability to apply basic theories to analyzing and solving real-life problems in socialism economic construction. The contents of this course cover consumer demands and related theories, measurement criteria of consumption levels, laws of consumer demand rise, functions and constitution of consumer market, features of consumer behavior, characteristics of service consumption, green consumption, leisure consumption, information consumption, tourist consumption, cultural and educational consumption, major measures and means of protecting consumers' rights and government's regulations and control over consumption.

## **21105 Development Economics**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Macroeconomics, Microeconomics, Economics history

**Description:**

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Development Economics is a core specialized course for students of economics. It aims at enabling students to analyze various situations in economic development of developing countries by applying theories of development economics, enhance their ability to make reasonable choices of strategies, policies and directions for economic development. The contents of this course are emergence, revolution and rationales of economic development, ideas of analyzing issues of economic development, theories and models of economic growth, relation of capital formation, human resource and economic development, population mobility and urbanization, industrialization and agricultural development, relation of technological progress, economic development, resource, environment, and sustainable development.

## **21105 Development Economics**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Macroeconomics, Microeconomics, Economics history

**Description:**

Development Economics is an elective course for students of finance and economics. It aims at enabling students to analyze various situations in economic development of developing countries by applying theories of development economics, develop their abilities to make reasonable choices of strategies, policies and directions for economic development. The contents of this course cover emergence, revolution and rationales of economic development, ideas of analyzing issues of economic development, theories and models of economic growth, relationship among capital formation, human resource and economic development, population mobility and urbanization, industrialization and agricultural development, relationship among technological progress, economic development, resources, environment and sustainable development.

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## **21106 Selected Reading on "Das Kapital"**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Political Economics

**Description:**

Selected Reading on "Das Kapital" is an elective course for students of finance and economics. It aims to enable students to understand research objects, methods, structures, production processes and purposes of *Das Kapital*, understand revolutions in the history of political economics, develop their abilities to explore its guiding functions to the development of modern economics. The contents of this course are labor theory of value, theory of surplus value, theory of social capital reproduction, operation mechanism, and characteristics of socialism goods economy.

## **21126 Practice of International Trade**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Practice of International Trade is a compulsory course for students of economics and international trade. The purposes of this course are to enable students to master basic methods of practices of international trade, and apply relevant laws and conventions to analyzing real-life problems. The contents of this course cover terminology in "International Rules for the Interpretation of Trade Terms in 2000" by the International Chamber of Commerce, contracts and articles of international sales

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of goods, such terms as the name of an article, quality, quantity, package, transportation, insurance, prices, payment, inspection, force majeure, arbitration in contracts of international sale of goods, examination and revision, implementation of the contract of international sale of goods, formation processes of contracts regarding international sale of goods, and implementation links of contracts.

## **21128 International Economics**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

International Economics is a basic specialized course for students of economics. It aims to enable students to master theories and policies of international economics, theories of international finance and policies of macroeconomics, theories of adjustment of international balance of payments, exchange rate, foreign exchange market, economic globalization in open economic systems, thus fully realizing operating regulations of international trade, investment and finance in global economics. This course covers Ricardo's model, specific factor model, H-O theory, standard trade model, liquidity of international factors, strategies of foreign trade, national income accounting and international balance of payment, currency, interest rate and exchange rate, international monetary system, and global capital market.

## **21132 International Business Negotiation**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

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**Prerequisites:** Principles and Practice of International Trade, International Marketing

**Description:**

International Business Negotiation is an elective course for students of economics and management. It aims to enable students to understand theoretical bases and practice for international business negotiation, familiarize production of negotiation, structures, related factors, psychological and cultural background of negotiators. This course covers concepts, features, functions of international business negotiation, classifications of negotiation, principles and procedures of negotiation, objectives and programs of negotiation, negotiation tactics, and negotiation etiquettes.

## **21143 Schools of Western Economics**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Macroeconomics, Microeconomics

**Description:**

Schools of Western Economics is a core specialized course for students of economics. It aims to enable students to master main thoughts and development trends of modern western economics, new theories and methods of economics, deepen their comprehension of economic theories and policies. The contents of this course are Keynesian economics, neoclassical synthesis, neo-Cambridge school, neo-Keynesian economics, monetary school, side economics, rational expectation school, the London school, new system school, the public choice school and radical economics.

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## **21169 History of Economics**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Introduction to Economics

**Description:**

History of Economics is a core specialized course for students of economics. This course aims to enable students to understand the development course of economics, the history and backdrop of its development, founders of theories related to economics and their views and conclusions, and general rules of economics. The contents of this course cover mercantilism, physiocracy, classical economics, marginal revolution, and Keynesian revolution.

## **21198 Industrial Economics**

**Credits:** 3

**Credit hours:** 48

**Categories:** Elective

**Prerequisites:** Microeconomics

**Description:**

Industrial Economics is an elective course for the students of economics and management. It aims to enable the students to master neo-applied economic theory of practical economic issues, improve their abilities to analyze the connection among market structure, market behavior, industries and market performance on basis of imperfectly competitive market. This course covers industrial layout, adjustment and promotion of industrial structure, monopoly welfare of enterprise, pricing of enterprise, coordinated behavior of enterprise, product differentiation, development of industrial economics in an open condition, and public policies for improving market

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performance.

## **21204 International Trade**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Macroeconomics, Microeconomics

**Description:**

International Trade is a core specialized course for students of international economics and trade. It aims at enabling students to master the abilities to analyze practical situations in international trade, understand its procedures and essence, simplify sophisticated issues in international trade and make correct decisions. This course covers theories of comparative cost, factor endowment theory, economics of scale and international trade, product cycle theory, the theory of competitive advantage, survey of international trade policy, strategic trade theory, and regional economic integration.

## **21301 Graduation Fieldwork**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Graduation Fieldwork is a compulsory course for students of economics and international trade. The purposes of this course are to enable students to better understand the knowledge they have learned, develop their abilities to discover, analyze and solve problems, and innovate, and improve students' capacity in social

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activities and entrepreneurship. The contents of this course cover nature of enterprises, major products, scale of enterprises, characteristics of production and operation, organization, function, rules and regulations, operation methods, strategic management, management of purchase and supply, production management, management of cost and expenses, management of marketing, quality management, and management of human resources.

## **21308 Economic Game Theory**

**Credits:** 3

**Credit hours:** 48

**Categories:** Elective

**Prerequisites:** Microeconomics B

**Description:**

Economic Game Theory is an elective course for students of economics. It aims to enable students to master basic structures and methods of economic game theory, improve their ability of analyzing economic issues, especially the interaction of economic entities, thus enhancing their abilities to transfer economic issues to some appropriate modes of game theory. This course covers static games of complete information, Nash equilibrium, static games of incomplete information, Bayes-Nash equilibrium, the revelation principle, dynamic game, perfect information and imperfect information, SPNE, one deviation principle, the folk theorem, moral hazard, adverse select, screening, and signal game theory.

## **21309 Economic Geography**

**Credits:** 2

**Credit hours:** 32



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**Categories:** Elective

**Prerequisites:** International Trade

**Follow-up Courses:** Regional economics

**Description:**

Economic Geography is an elective course for majors of economics and international trade. It is designed to enable students to master basic concepts, theories and skills of economic geography, familiarize new situations and regulations of regional division and collaboration under the backdrop of knowledge economy, develop their capacity to summarize layout features of practical regional economic activities and analyze optimization of enterprise location. This course covers location of economic activity, reasonable layout of economic activity, such as agricultural location theory, industrial location theory, commercial location theory, multinational location theory, theory of regional economy development, and theory of regional economic growth.

## **21310 Methodology of Economics**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Essentials of Economics

**Description:**

Methodology of Economics is an elective course for students of economics. It aims to enable students to understand ideas and methods of logical positivism, falsificationism, and paradigm theory in scientific philosophy, develop their logical thinking to evaluate and verify economic theories, familiarize general approaches and regulations of economic innovation and development. This course covers foundation of scientific philosophy, analysis of classic economics by scientific philosophy, microeconomics, macroeconomics, development processes, and current situations of emerging economics.

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## **21313 Logistics Management**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Management

**Description:**

Logistics Management is an elective course for students of economics and international trade. The purposes of this course are to enable students to master basic concepts, theory and methods of logistics management, understand the latest development of logistics management, develop students' abilities to manage logistics, improve practical skills in analyzing and solving real-life problems. The contents of this course cover importance and significance of logistics management, constitution of logistics activities, targets and development of logistics management, supply of logistics, management methods of logistics, management of transportation system, management of inventory systems, management of logistics centers, new methods and technologies of logistics management under the condition of informationalization.

## **21315 History of China's Economic Thoughts**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

History of China's Economic Thoughts is an elective course for students of economics and international trade. The purposes of this course are to enable students

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to master main contents of history of China's economic thoughts, unique logic systems, presentation, and terminology of the history related to China's economic thoughts, apply positions, viewpoints and methods of Marxism, draw on western economics, accurately analyze and understand contents of the history of China's economic thoughts, and fully absorb the essence of legacy of China's economic thoughts. The contents of this course cover economic thoughts during Period of Pre-Qin days, Period of Spring and Autumn, Period of Qin and Han dynasties, Period of Wei Jin Southern and Northern Dynasties, Period of Tang, Song, and Yuan Dynasties, Period of Ming and Qing Dynasties, and the early time Republic of China.

## **21501 Business Correspondence for Foreign Trade**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Basic College English, International Finance, E-commerce

### **Description:**

Business Correspondence for Foreign Trade is an elective course for students of economics and international trade. The purposes of this course are to enable students to master basic knowledge in business correspondence of foreign trade, the formats, terms, methods, and features of genre of business correspondence, develop the ability to read, translate, and write English business correspondence, deal with correspondence related to importing and exporting business in English, improve students' competence of using English accurately in foreign business activities and deal with each type of business communication and correspondence. The contents of this course cover formats of foreign business transaction, terminology, idiomatic sentence patterns, reading, examination, verification, management of business documents of foreign trade (e.g., contracts, letters of credit, bills of lading, invoice, payment notes, inspection certificates, common vocabulary in EDI operations and

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E-mails.

## **21502 Tourist Economics**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Western Economics

**Description:**

Tourist Economics is an elective course for students of economics and international trade. The purposes of this course are to enable students to master basic concepts, theories and methods in tourist economics, the major links and their relationship in tourist economic activities, fundamental features of tourism development, improve students' ability to invest and manage tourist departments. The contents of this course cover formation, development, research objectives and disciplinary base of tourist economics, mechanisms of tourist economics, laws of demand and supply, characteristics of tourism products and market, products development of market expansion, dynamic process of tourist consumption, revenue, and allocation, and sales of tourist products.

## **21504 Real Estate Development and Management**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Urban Economics, Real Estate Market

**Description:**

Real Estate Development and Management is an elective course for students of

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finance and economics. It aims to enable students to understand basic theories and general rules related to the development and management of real estate, and improve their overall skills to develop and manage the real estate. This course covers theory and strategy of real estate development and management, feasibility studies of real estate projects, land acquisition, project management, marketing and trade of real estate.

## **21506 Innovation in Economics**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Introduction to Economics

**Description:**

Innovation in Economics is an elective course for students of finance and economics. It aims to enable students to familiarize processes of innovation, especially technological innovation, develop their abilities to study innovative cases in economic researches. The contents of this course cover basic features and analyzing methods of innovation, factors determining the success or failure of innovation, effective management and organization of innovation, determinants of effective innovative strategy of enterprise, influence of innovation to macroeconomics and research of innovation system and policy.

## **21507 International Investments**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

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**Prerequisites:** International Trade

**Description:**

International Investments is an elective course for students of economics. It aims to enable students to master basic concepts, theories and operating techniques of international investments, cultivate their abilities to operate economic business by applying knowledge and skills learnt, enable them to understand, utilize, judge and grasp information about international investments of enterprises. This course covers basic concepts of international investments, international investments theory, subjects and objects in international investments operations, international investments environment, and international investments management.

## **21513 Synthetic Simulation of International Trade**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Synthetic Simulation of International Trade is a compulsory course for students of economics and international trade. The purposes of this course are to develop students' abilities in actual operations and practices, understand international trade flow, help students familiarize their work after graduation, train real talents with capability, improve their capacity to integrate theories with practices, to learn to meet practical requirements and develop their competence in real operations. The contents of this course cover flow of operation of import and export in international trade, establishment, verification, modification of letters of credit, research on international market, searching for clients, offer, counter offer, acceptance, signing a contract, customs clearance, chartering and booking space, customs clearance and insurance, and training of handling international trade documents.

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## **21520 Graduation Thesis**

**Credits:** 8

**Credit hours:** 128

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Graduation Thesis is a compulsory course for students of economics and international trade. The purposes of this course are to enable students to master academic writing methods and norms, develop their abilities to write in real life, plan, coordinate and organize, comprehensively apply their specialized knowledge to analyzing and solving real-life problems, master basic methods of searching literature and data, improve the skills in acquiring new knowledge, develop vigorous scientific attitudes, work ethics, and the capacity to solve real-life problems. The contents of this course cover significance of research, literature review, issues that remain in current research fields and related solutions, research methods and methodology, research results and discussions, and references.

## **21521 Corporate Governance**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Management, Microeconomics

**Description:**

Corporate Governance is an elective course for students of economics and international trade. The purposes of this course are to enable students to master the basic knowledge of Corporate Governance, develop their abilities to analyze and

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resolve problems in the process of operation and management of enterprise by applying knowledge learnt. The contents of this course are basic theoretical framework of corporate governance, different features, statues and administrative measures of stockholders, directors, supervisors and top managers, external governance mechanisms of corporate governance, comparison of administrative modes of different countries, principles and evaluation of cooperate governance.

## **21522 International E-commerce**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** College Information Technological Base

**Description:**

International E-commerce is an elective course for students of economics and international trade. The purposes of this course are to enable students to master basic knowledge of e-commerce and its application features and models in international trade, acquire skills of developing basic e-commerce operations, improve their abilities to apply knowledge acquired and solve real-life problems in production and operation. The contents of this course cover basic technology and development of e-commerce, far-reaching influence of e-commerce on international economic environment, applications of e-commerce in foreign trade and models of international e-commerce, applications of e-commerce in international payment, and characteristics of international logistics and marketing methods in the environment of e-commerce.

## **21523 International Trade and Standards**

**Credits:** 2

**Credit hours:** 32



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**Categories:** Elective

**Prerequisites:** International Trade Theory and Practice

**Description:**

International Trade and Standards is an elective course for students of finance and economics. It aims at students' mastery of basic concepts and theories of standards in international trade, operating processes of international trade and international standard cases. This course covers basic approaches and principles of international trade standards, general situations of international standard competition, norms and intellectual property rights, norms and international trade scale, norms and international trade structure, and norms and international trade profits.

## **21524 International Business Operation**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** International Trade, International Trade Theory and Practice, International Commercial Law, Marketing

**Description:**

International Business Operation is an elective course for students of finance and economics. It aims to enable students to understand history, status quo and future trends of theories and practices of international commerce, familiarize conditions of international commercial laws and existence and development of international market. The contents of this course cover definitions, history and trends of international commerce operation, theoretical backdrop of international trade and investment, conditions of international commercial laws, macro-environment of international commercial activities and social systems, enterprise strategies in international commerce.

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## **21525 Value Theory**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** None

**Description:**

Value Theory is an elective course for students of finance and economics. It aims to enable students to master the basic concepts and theories of value theory, develop their ability to solve practical economic problems by applying value theory. The contents of this course cover labor theory of value, non-labor theory of value, monism of labor theory of value, labor theory of multi-values, and comparison of different theories of value.

## **21529 Regional Research and Planning**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

**Prerequisites:** Regional Economics, Economic Geography

**Description:**

Regional Research and Planning is an elective course for students of economics and international trade. The purposes of this course are to enable students to master relevant theories and methods of regional research and planning, improve their abilities to analyze and resolve real-life problems by integrating theories with practice. The contents of this course cover basic concepts, theories and methods of regional analysis and planning, resources environment basis for regional development, economic and social background, technique support conditions, regional integral development levels, regional advantages and division, theories and methods of

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regional industrial structural analysis, concepts, categories, major theories of regional planning, and basic mentality such as regional development strategies, industrial development, distribution, and systems of cities and towns, and ecological environment in regional planning.

## **21530 Survey on Problems of Social Economy**

**Credits:** 1

**Credit hours:** 16

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Survey on Problems of Social Economy is a compulsory course for students of economics and international trade. The purposes of this course are to require students to apply basic knowledge and theories they have learned to investigating and discussing real-life problems in social economy, develop students' insights to observe economic phenomena, help students understand management and operation activities, improve students' abilities to coordinate, communicate, and comprehensively apply their practical skills and theoretical knowledge. The contents of this course cover basic theories, methods, application principles and techniques to the survey of social economy, significance, functions and scientific nature of statistics in investigating social economy, status quo and development of China's investigation of social economy, and methods of survey in problems of social economy.

## **21531 Internet Economics**

**Credits:** 2

**Credit hours:** 32

**Categories:** Elective

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**Prerequisites:** None

**Description:**

Internet Economics is an elective course for students of economics and international trade. The purposes of this course are to enable students to master major differences between Internet economics and traditional economics, basic operational theories of Internet economics including theories of demand and supply, and theories of market balance, improve students' ability to apply theoretical knowledge to analyzing real-life economic activities and phenomena through case studies. The contents of this course cover the rise and development of Internet economy, nature and characteristics, Internet products, need analysis, supply analysis, balance of Internet market, Internet infrastructure, information products, analysis of Internet business organization and behavior, transformation, competition and monopoly of traditional business organization, financial support system of Internet economy, Internet economy and new economy, new economic cycles, Internet economy and economic growth, Internet economy and stability of currency value, Internet economy and economic globalization.

## **21532 Term Paper (1)**

**Credits:** 1

**Credit hours:** 16

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Term Paper (1) is a compulsory course for students of economics and international trade. The purposes of this course are to enable students to master processes and norms of writing an academic paper, receive preliminary trainings of scientific researches, develop students' abilities to apply basic theories and research methods to discussing and analyzing discipline-related problems, and train and

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prepare students to write up their theses. The contents of this course cover collection, management and application of research data, selection of research topics, writing-up of term papers and assessment of research papers.

### **21533 Term Paper (2)**

**Credits:** 1

**Credit hours:** 16

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Term Paper (2) is a compulsory course for students of economics and international trade. The purposes of this course are to enable students to apply their specialized knowledge, integrate reality, reasonably analyze and solve problems, master logic reasoning and academic writing, lay a solid foundation in writing up thesis through training and preparation. The contents of this course cover collection, management and application of research data, selection of research topics, writing-up of term papers and assessments of research papers.

### **26007 Theory of Operational System**

**Credits:** 4.5

**Credit Hours:** 48

**Category:** Compulsory

**Prerequisites:** Principles of Computer Composition, Data Structure, Programming Language

**Follow-ups:** Computer Network, Fundamentals of Compiling, Embedded System

**Description:**

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Theory of Operational System is a core specialized course for students of Software Engineering. It aims to enable students to understand objectives, functions and models of operation systems, and develop their abilities to analyze, design, realize and debug the operation system. The main contents are introduction to operation systems, description and control of processes, inter-process communication, scheduling and deadly embrace, memory management, equipment management, file systems, disk storage management, and operating system interface.

## **26021 Fundamentals of Multimedia Technology**

**Credits:** 3

**Credit Hours:** 80

**Category:** Compulsory

**Prerequisites:** None

**Description:**

Fundamentals of Multimedia Technology is a basic specialized course for students of Software Engineering. It aims to enable students to understand basic concepts and major functions of multimedia technology, master applications of multimedia software. This course covers introduction to multimedia technology, expression and compression of multimedia information, development environment and tools of multimedia, data production of multimedia, multimedia card, CD-ROM and optical disc, touch-screen technology, auxiliary equipment of multimedia, multimedia project development, and applications of multimedia.

## **26039 Fundamentals of Compiling**

**Credits:** 4.5

**Credit Hours:** 96

**Category:** Compulsory

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**Prerequisites:** Data Structure, Discrete Mathematics, Operating System

**Description:**

Fundamentals of Compiling is a compulsory course for students of Software Engineering. It aims to enable students to master basic theories, methods and techniques involved in processes of compiling, and develop their abilities to apply principles and techniques into general design of software. The contents of this course are lexical analysis, syntactical analysis, syntax-directed translation, intermediate code generation, code generation and code optimization.

## **26048 Computer Organization and Structures**

**Credits:** 3.5

**Credit Hours:** 72

**Category:** Compulsory

**Prerequisites:** Digital Circuit

**Description:**

Computer Organization and Structures is a basic specialized course for students of Software Engineering. It aims to enable students to master composing principles and implementation techniques of subsystem of computer hardware, thus establishing an overall concept of computer system; develop their abilities to design and develop computer systems. This course covers introduction, development and applications of computer systems; basic concepts, classification, features, performance indication, structures and control of buses; classification of memory; working principles of program interruption; functions, components, types and working processes of DMA interface circuit, structure diagrams and instruction cycles.

## **26508 Computer Graphics**

**Credits:** 3

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**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** linear algebra, numerical analysis, C/C++ programming Language, Data Structure

**Follow-ups:** Three-dimensional Graphics Programming

**Description:**

Computer Graphics is a compulsory course for majors of computer science. It aims to enable students to master fundamental principles and methods of computer graphical systems. The contents of this course are display devices, anti-aliasing, illumination, OPENGL programming, OpenGL computer graphical programming, GLU and GLUT.

## **26527 Web Animation and Design**

**Credits:** 3.5

**Credit hours:** 72

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Web Animation and Design is a compulsory course for majors of digital media technology. It aims to enable students to master processing traditional animation and rules which are related to animation production. The contents of this course are processing of animation production, animate design, working environment of Flash, basic techniques of animation production, camera language and perspectives, traditional tween, shape tweening, 2D motion metamorphosis, mask layers, editing equipment, filter, voice addition, AS and variables.



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## **26535 Fundamentals of Computer Art**

**Credits:** 3

**Credit Hours:** 64

**Category:** Compulsory

**Prerequisites:** Design Sketches

**Description:**

Fundamentals of Computer Art is a basic specialized course for students of Digital Media Technology. It aims to enable students to understand theories involved in computer arts, and develop their abilities to apply Photoshop to related image processing and art making. This course covers basic concepts of images, basic operations of Photoshop, layers, compiling and processing images, concepts and applications of filter, introduction to CORELDRAW, permutation and combination, and gradual changes.

## **26536 Computer Art and Design**

**Credits:** 4

**Credit Hours:** 72

**Category:** Compulsory

**Prerequisites:** None

**Description:**

Computer Art and Design is a compulsory course for students of Digital Media Technology. It aims to enable students to understand history and development of design, basic processes of design, and basic concepts and methods of design. This course covers fundamental structures of points, lines and plane; attribute and components of color; steric morphology, overall modeling of steric morphology; graphic design; and basic design software Photoshop and Illustrator.

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## **26538 Computer System**

**Credits:** 3

**Credit hours:** 56

**Categories:** Compulsory

**Prerequisites:** Computer Component, Data Structure, Programming Language

**Description:**

Computer System is a compulsory course for majors of digital media technology. It aims to enable students to master basic principles and components of the computer. The contents of this course are computer components and programming, data expressions, command systems, storage systems, input and output systems, scalar processors, vector processors, Internet, multiprocessor system, and multinuclear processors.

## **26539 Foundation of Interaction Design**

**Credits:** 2

**Credit hours:** 40

**Categories:** Compulsory

**Prerequisites:** Geographic Design Foundation

**Description:**

Foundation of Interaction Design is a compulsory course for majors of arts and software engineering. It aims to enable students to master basic concepts, structures, principles and design of interaction design. The contents of this course are interaction design concepts, Web development design patterns, illustrator drawing, AI drawing software, and web page design.

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## **26545 Foundation of Three-dimensional Modeling**

**Credits:** 3

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Foundation of Three-dimensional Modeling is a compulsory course for students of arts and software engineering. It aims to enable students to master fundamental knowledge and related techniques of three dimensional modeling. The contents of this course are basic knowledge of three-dimension modeling, UG NX OPERATION, curving forming and editing, draft drawing and management, mould of entity and curved surface, project drawing and assembling, and three-dimensional modeling cases.

## **26546 Design Drawings and Sketches**

**Credits:** 5

**Credit Hours:** 80

**Category:** Compulsory

**Prerequisites:** Design Sketches

**Description:**

Design Drawings and Sketches is a compulsory course for students of Digital Media Technology. It aims to enable students to master principles and general rules of drawings, and develop their abilities to shape images by means of drawings. The contents of this course are sketch training of points, lines and plane; training of composition and its expression, training of structures, lighting and shadows, appreciative remarks and still life paintings.

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## **26547 Data Structure and Object-oriented Design**

**Credits:** 5

**Credit Hours:** 104

**Category:** Compulsory

**Prerequisites:** None

**Description:**

Data Structure and Object-oriented Design is a compulsory course for students of Software Engineering. It aims to enable students to master basic program designing processes and skills, methods of object-oriented design, logical structures and graph structures of data; and develop their abilities of designing high level language programming. This course covers introduction to concepts of object-oriented design, linear lists, stack and queues, serialization, tree and binary trees, diagrams, searching, internal and external sorts.

## **26548 Database Design and Application Development**

**Credits:** 4.5

**Credit Hours:** 96

**Category:** Compulsory

**Prerequisites:** None

**Description:**

Database Design and Application Development is a basic specialized course for students of Software Engineering. It aims to enable students to understand principles of database, and master methods of designing and developing application systems of database. This course covers design of database systems, design of relational data models, definitions of database, building and maintaining database, database inquiry, database views, definitions of diagrams, and integrality and security of database.

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## **26549 Network Communication**

**Credits:** 2.5

**Credit hours:** 40

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Network Communication is a compulsory course for the majors of digital media technology. It aims to enable students to master general rules of human communication and understand social functions of communication. The contents of this course are technological base of network communication, channels of network communication, basic forms of network communication, typical types of network communication, sign systems of network communication, audience of network communication, structures of network communication and effects of network communication.

## **26550 Introduction to Information Technology and Software Engineering**

**Credits:** 1.5

**Credit Hours:** 32

**Category:** Compulsory

**Prerequisites:** None

**Description:**

Introduction to Information Technology and Software Engineering is a compulsory course for students of Software Engineering. It aims to enable students to understand development, history, current situations and related technology of computer systems and software engineering, thus making students prepared for further studies in software engineering. The main contents are development and

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history of computer science, basic components and principles of computer system and software engineering, development history of software engineering, significance of learning software engineering and basic concepts of “learning by doing”.

## **26551 Introduction to Information Technology and Digital Media**

**Credits:** 3

**Credit Hours:** 64

**Category:** Compulsory

**Prerequisites:** None

**Description:**

Introduction to Information Technology and Digital Media is a compulsory course for students of Digital Media Technology. It aims to enable students to master basic concepts of digital media technology, and familiarize application fields, frontier technology and development prospects of digital media technology and digital media arts. This course covers processing technology of digital audio and video; digital animation technology; WEB integration of digital media; compressing, memorizing and transmission technology of digital media and development tendency of digital media.

## **27065 Introduction to Broadcasting and TV**

**Credits:** 2

**Credit hours:** 32

**Prerequisites:** None

**Description:**

Introduction to Broadcasting and TV is a compulsory course for majors of journalist. It aims to enable students to understand history and its development. The contents of this course are material base for broadcasting and TV communication,

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development of broadcasting and TV, Communication commonality of broadcasting and TV, social functions of broadcasting and TV, broadcasting and TV systems, broadcasting and TV languages, broadcasting and TV management.

### **27133   Vocality (1)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Vocality (1) is a compulsory course for students of acting. The purposes of this course are to enable students to master elementary vocal music theories, improve their abilities of staff recognition, learn correct singing postures and respiration methods, concentration of training of medium register, intonation and rhythms, and learn to sing elementary songs. The main contents of the course cover respiratory training of singing, painting breathing exercises, singing postures, resonance, classifications of human voice, vocalization problems and its correcting methods, voice protection and breathing ventilation.

### **27134   Vocality (2)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Vocality (2) is a compulsory course for students of acting. The purposes of this course are to enable students to master elementary vocal music theories, improve

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abilities of music recognition, familiarize correct singing postures and respiration methods, concentrate on training of medium registers, intonation and rhythms, and learn to sing elementary songs. The main contents of the course cover breathing practices, sighing exercises, panting breathing exercises, correct methods of adjusting articulation, methods of vocal cords closing force, respiratory training of singing, the explanation of vocal music theories, unity of medium register voice, and soprano aria.

## **27142 Television Program Directing**

**Credits:** 2

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Television Program Directing is a compulsory course for majors of broadcasting and TV writing and directing. It requires students to understand responsibilities of program directors' jobs, arrangement and directions provided by directors, and coordination among different departments; master processes and basic operation techniques regarding TV program casting. Main contents are introduction to telecast guiding of television programs, telecast guiding and talk shows, case studies of telecast guiding in art programs, terminology in telecast guiding, principles of directors' watchwords, and case studies of studio programs.

## **27150 Television Editing**

**Credits:** 3

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** Digital Manufacture of Film and Television



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**Follow-ups:** Fundamentals of Director of Film and Television, Producing of Documentary Film, Play Writing of Film and Television, Planning of Broadcasting and Television Program

**Description:**

Television Editing is a compulsory course for students of broadcasting and TV writing and directing. It aims to enable students to familiarize processes of television editing, master basic theories and skills of television editing, and characteristics of TV language and its influences on program editing. Main contents are introduction to TV editing, evolution of editing languages, grammar of TV editing, principles and skills of film editing of scenes, constitutions of TV programs, and case studies.

## **27152 Radio and Television News**

**Credits:** 3

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** Introduction to Journalism, Fundamentals of Photography  
Broadcasting Editing, TV Editing

**Description:**

Radio and Television News is a compulsory course for majors of broadcasting and hosting arts and broadcasting and TV writing and directing. It aims to enable students to understand processes and basic methods of making news TV programs, master basic philosophy of TV news broadcasting programs, and be qualified to make such programs. Main contents include news broadcasting, broadcasting symbol systems, broadcasting interviews and writing, session-broadcasting, live telecast, TV news, principles of material-collecting of TV news, and news writing.

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## **27157 Editing for Broadcasting**

**Credits:** 3

**Credits hours:** 48

**Categories:** Compulsory

**Prerequisites:** Introduction to Broadcasting and TV

**Follow-ups:** Artistic Literature Program of Broadcasting and Television, News of Broadcasting o Television, TV Editing, Planning of Broadcasting and Television Program

### **Description:**

Editing for Broadcasting is a compulsory course for majors of broadcasting and TV writing and directing. It requires students to master general methods of broadcasting material collecting, editing, design and making, and get involved in practices of broadcasting media. Main contents are features of broadcasting media, requirements of broadcasting writing, making of audio reports, digital audio editing software COOL Edit Pro2.1, and new forms of broadcasting.

## **27164 Introduction to Journalism**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Introduction to Advertising

### **Description:**

Introduction to Journalism is a compulsory course for majors of journalism and communication. The objective of this course is to guide students to understand development and up-to-date news of international journalism studies, and equip themselves with basic theories of journalism. Main contents are basic theories of journalism, processes and patterns of journalism, integration of theories with practices

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in journalism, and research results of great academic values.

### **27166   Vocality (3)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Vocality (3) is a compulsory course for students of acting. The purposes of this course are to enable students to master elementary vocal music theories, improve their abilities of staff recognition, familiarize correct singing postures and respiration methods, concentration on training medium registers, intonation and rhythms, and learn to sing elementary songs. The main contents of the course cover pronunciation practice of appropriate senses of glottis, finding correct positions of articulation by applying coughing methods; sighing articulation; adjusting glottis by timbre practice; larynx stability articulation practice; finding short and vigorous sense of pursiness and a sense of support in singing high degree songs.

### **27167   Vocality (4)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Vocality (4) is a compulsory course for students of acting. The purposes of this course are to enable students to master elementary vocal music theories, improve their abilities of staff recognition, learn correct singing postures and respiration methods, concentration on training medium registers, intonation and rhythms, and learn to sing

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intermediate songs. The main contents of the course cover chest resonance, larynx resonance, singing by opening larynx, pharynx resonance, China's modern operas, art songs and selected opera songs of romantic period, vocal works of baroque period and art songs, and selected opera songs of classical age.

## **27345 Acting (1)**

**Credits:** 8

**Credit hours:** 112

**Categories:** Compulsory

**Prerequisites:** None

### **Description:**

Acting (1) is a compulsory course for students of acting. The purposes of this course are to enable students to establish a sense of stage reality and confidence, develop sustained concentration, and form a good habit of observing daily life and creation. The main contents of the course cover definitions of acting, features of acting, creation quality requirements of actors, concentration practice, non-entity training, practices of senses of stage reality and confidence, sensibility and adaptability practices, emotion proving practices, environment proving practices, object proving practices, thinking and judging practices, explanation of action theories, and individual opusculum.

## **27346 Acting (2)**

**Credits:** 1

**Credit hours:** 28

**Categories:** Compulsory

**Prerequisites:** None

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**Description:**

Acting (2) is a compulsory course for students of acting. The purposes of this course are to enable students to master basic concepts, requirements and creating method of acting, and develop students' abilities of creativity, imagination, observation, imitation and communication. The main contents of the course cover life observation training, imitation training, exercises of animal imitation; muscle controls, personification acting, concentration training, improvisation voiceless training with mutual communication, and fixed sentence training with mutual communication.

**27347 Acting (3)****Credits:** 6**Credit hours:** 160**Categories:** Compulsory**Prerequisites:** None**Description:**

Acting (3) is a compulsory course for students of acting. The purposes of this course are to enable students to carry out stage action in accordance with scripts, master script analysis, character analysis and abilities of role analyses and realization. The main contents of the course cover script adaptation and selection, coordinate external life of roles, script analyses, analytical methods of script theme and central gist; ultimate tasks of actors and analytical methods that accompany actions, line analyses and adjusting stage rhythms with the scene as a unit.

**27348 Acting (4)****Credits:** 6**Credit hours:** 160

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**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Acting (4) is a compulsory course for students of acting. The purposes of this course are to enable students to understand themes of scripts, master rules of role creation, and techniques of expression of different styles. The main contents of the course cover artistic disposal of character utterances, enhancement of fixed scenes, role characterization, dramatic forms and styles, systematic role analysis, non-verbal communication practices, verbal communication practices, life observation practices, creation quality training for actors, law of artistic creation of actors, concentration and imagination training methods, and emotional memory.

## **27350 Script (1)**

**Credits:** 2

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Script (1) is a compulsory course for students of acting. The purposes of this course are to enable students to master basic rules and skills of articulation, form a habit of speaking Putonghua. The main contents of the course cover significance of scripts in dramas, film and television performance; basic knowledge of Cantonese phonological systems; articulation and practices of lingua-palatal phonemes and blade palatal; articulation and practices of anterior and zero initial; articulation and practice of individual final; articulation and practice of front and back loud dual finals; basic knowledge and articulation of tones, tongue twister training of bilabial sounds, labiodental sound and apical sounds, and requirements of Putonghua proficiency tests.

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## **27351 Script (2)**

**Credits:** 2

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Script (2) is a compulsory course for students of acting. The purposes of this course are to enable students to master internal and external skills of language expression and creating methods of various works. The main contents of the course cover introduction of recitation art, explanation of internal and external skills of recitation art, features and learning methods of poem recitation, features and learning methods of rhymes, features and learning methods of modern poems, features and learning methods of prose, and features and learning methods of fables.

## **27355 Physique (B1)**

**Credits:** 1

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Physique (B1) is a compulsory course for students of acting. The purposes of this course are to enable students to know structures and features of human bodies, correct wrong body postures, master correct standing postures, sitting postures and walking postures, enhance flexibility, dexterity, compatibility and manipulation of muscles. The main contents of the course cover concepts of figure beauty, body posture training, concepts of basic ballet training, battement tendu practices, port de bras practices, balance, break dance, and pas de basque.

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## **27355    Physique (1)**

**Credits:** 2

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Physique (1) is a compulsory course for students of acting. The purposes of this course are to enable students to familiarize structures and features of human body, correct wrong body postures, master correct standing postures, sitting postures and walking postures, enhance flexibility, dexterity, compatibility and control ability of muscles. The main contents of the course cover concepts of figure beauty, body posture training, concepts of basic ballet training, battement tendu practices, port de bras practice, balance, break dance, and pas de basque.

## **27356    Physique (2)**

**Credits:** 2

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Physique (2) is a compulsory course for students of acting. The purposes of this course are to enable students to familiarize structures and features of human body, correct wrong body postures, master correct standing postures, sitting postures and walking postures, enhance flexibility, dexterity, compatibility and manipulation of muscles. The main contents of the course cover dumbbell bench press, pull down, incline chest press, seated cable row, leg press, Romanian DL, split squat, and dumbbell step-ups.



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## **27357    Physique (3)**

**Credits:** 2

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Physique (3) is a compulsory course for students of acting. The purposes of this course are to enable students to master features and styles of folk dances, train the ability of using body languages to express emotions, improve their creativity, organization and applications. The main contents of the course cover introduction of Tibetan dance, basic steps practice of tap dance, comprehensive training of tap dance, basic step practices of battement fondu, comprehensive training of battement fondu, creation of Tibetan dance, introduction of Manchu dance, basic movements of Uyghur dance, introduction of Mongolian dance, movement rhythm training, shoulder training, flexible arm training, house-riding style halt training, and creation of Tibetan dance.

## **27358    Physique (4)**

**Credits:** 2

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Physique (4) is a compulsory course for students of acting. The purposes of this course are to enable students to master action connotation, styles and rhythms of ballet, familiarize relationships between ballet movements and body and use simple

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body movements to express connotation of dance. The main contents of the course cover par terre, parallel force, pas battu, pas de bourré couru , pas de bourré en arrière, pas de bourré en avant, pied à demi. pied à pointe, pied à quart, pied à trois quarts, piqué, piqué a terre, piqué détourné, pirouette, pirouette à la seconde, pistolet; ailes de pigeon, ballistic movement, battement frappe, battement frappe double, battement frappé pointe, battement glissé, battement tendu pour la batterie, and poursuit waltz.

## **27505 Digital Video Production**

**Credits:** 3

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Digital Video Production is a compulsory course for majors of radio and TV director. It aims to enable students to understand processing of digital video production. The contents of this course are introduction to TV and cinema production, Arts of Films and TV, general knowledge of digital video production, common video formats, thoughts and methods of video editing, subtitle systems, PHOTOSHOP, montage, applications and effects of video plug, video filter modules, audio editing system, picture frames, X-edit systems, and post production.

## **27534 Presenting Television Programs**

**Credits:** 2

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Broadcasting and Anchoring in Radio Program

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**Description:**

Presenting Television Programs is a compulsory course for majors of Broadcasting and Hosting. It aims to enable students to master characteristics of TV program hosting, rules and principles of TV program hosting, hosting skills for various TV programs. The contents of this course are history, development, properties, and classifications of television hosting programs,

**27546 Radio and Television Entertainment Programs****Credits:** 3**Credit hours:** 64**Categories:** Compulsory**Prerequisites:** curriculums related to TV Editing and TV Photograph**Description:**

Radio and Television Entertainment Programs is a compulsory course for majors of broadcasting and TV writing and directing. It aims to enable students to master history and development of artistic literature programs of broadcasting and television, study phenomena of programs, and make complete artistic literature programs. Main contents are evolution of artistic literature programs of broadcasting and television, skills and patterns of program making, music of TV broadcasting, symbols of TV broadcasting, hosting of artistic literature programs, and values and functions of artistic literature programs.

**27549 Television Presenting****Credits:** 3**Credit hours:** 80**Categories:** Compulsory**Prerequisites:** Mandarin Chinese Phonetics, Broadcast Pronunciation Science,

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**Description:**

Television Presenting is a compulsory course for majors of Broadcasting and Hosting. It aims to enable students to master general rules of broadcasting and anchoring in radio programs. The contents of this course are theories of development history of TV programs, characteristics of TV programs, hosting skills of literary and art TV programs, hosting skill of radio news TV programs, talk show hosting skills, hybrid broadcast, retelling, explication, and commentary program hosting skills.

**27551 Fundamentals of Photography****Credits:** 2**Credit hours:** 48**Categories:** Compulsory**Prerequisites:** None**Description:**

Fundamentals of Photography is fundamental course for majors of broadcasting and TV writing and directing. It aims to enable students to master fundamental knowledge and various skills of photography. The contents of this course are light photography, photosensing materials, photography and sights, spares and types of camera, common sense of lens, functions of various kinds lens, photometry, exposure control, exposure compensation, shutter, depth of field, hyperfocal distance, filter, shooting angle, picture composition, artificial light, and hues.

**27552 Production of Documentary Films****Credits:** 3**Credit hours:** 64**Categories:** Compulsory**Prerequisites:** None

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**Description:**

Production of Documentary Films is a compulsory course for majors of broadcasting and TV writing and directing. The objective of this course is to enable students to understand basic concepts, theories and principles of aesthetics and criticism, cultivate their practical and innovative abilities, and familiarize history and status quo regarding documentary film at home and abroad. Main contents are introduction to international films, TV photograph, TV writing, TV editing, film appreciation, TV film writing, fundamentals of documentary film programming, recommendation writing, preliminary investigation, interviewing, photography, post production, and views of several types of films.

**27563 Modern Chinese****Credits:** 3**Credit hours:** 48**Categories:** Compulsory**Prerequisites:** None**Description:**

Modern Chinese is a compulsory for majors of radio and TV director. It aims to enable students to master the phonetic sound, vocabulary, character, grammar and rhetoric of modern Chinese. The contents of this course are definitions of modern Chinese, formation of modern Chinese, seven major dialects in China, the characteristics of modern Chinese, domestic and international status of modern Chinese, phonetic sounds, structures and rhetoric of modern Chinese.

**27573 Camera Technology of Film and Television****Credits:** 3**Credit hours:** 64

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**Categories:** Compulsory

**Prerequisites:** Basic Photography

**Follow-ups:** Editing Art of Film and Television

**Description:**

Camera Technology of Film and Television is a compulsory course for majors of broadcasting and TV writing and directing. It requires students to understand applications of video cameras, complete shooting of fixed pictures and moving shots independently, familiarize basic languages of shooting, and complete design of shooting of feature films. Main contents are features of scenes and modeling, requirements of material-collecting, basic movements of filming, shooting of different views, depth of field, view-finding, different scene shooting, action axis, shooting adjustment, scene depth, moving filming, categories, intensity and contrast of light, sound selecting, and overall scene adjustment.

## **27576 History of Chinese and Foreign Radio and Television**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Introduction to TV Broadcasting

**Description:**

History of Chinese and Foreign Radio and Television is a compulsory course for majors of broadcasting and TV writing and directing and broadcasting and hosting arts. It requires students to understand origins of TV broadcasting and important historic events and figures, analyze historic phenomena, and draw experience from development of TV broadcasting. Main contents are development of TV broadcasting, international TV broadcasting systems, TV broadcasting in the USA, UK, Asia and China.

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## **28074 Practice of Advertisement in Media**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Practice of Advertisement in Media is a compulsory course for majors of advertising,. It aims at enabling students to understand basic rules, knowledge of advertising, master techniques and methods of advertising campaign. This course covers introduction, development of advertising, researches on advertisements, advertising psychology, advertising campaigns, advertising originality, advertising creation, advertising media, evaluation of advertising, advertising management, management of advertising industry, and macro-management of advertising.

## **28088 News Photography**

**Credits:** 2

**Credit hours:** 40

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

News Photography is a compulsory course for majors of journalism and communication. The objectives of the course are to enable students to understand development of news photography and its status and influence in news communications, master basic features of news photography, interviewing methods and picture editing, and develop a deeper understanding in news photography theories. Main contents are history of Chinese and foreign news photography, definitions and interviewing patterns of news photography, qualifications of press journalists, performing methods of news, requirements and skills of picture editing.

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## **28114 Advertising Psychology**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Advertising Psychology is a compulsory course for majors of advertising. It aims at enabling students to master basic knowledge and concepts of advertising, develop their abilities to analyze, diagnose and control psychology of advertising targets. This course covers introduction, selection of advertising, analysis of advertising and problem solving, brand memory construction, consumption motives, persuasion by personal emotion and experience, researches on consumption differences, and assessment of advertising.

## **28125 Introduction to Communication**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Introduction to Communication is a compulsory course for students of journalism and communication. The purposes of this course are to enable students to master discipline fundamentals, basic concepts, theories, and opinions of communication and can apply basic theories and methods to study historical and current issues of communication and guide communication practice. The main contents of the course cover definitions of communication; research objects, objectives of communication; discipline features, concepts of communication;



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classification of communication; procedures and modes of communication; the principle and functions of communication; media organization and its status, information explosion and information deficiency; types of communication media; and techniques and environment of communication.

## **28337 History of Chinese Journalism and Communication**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Chinese History, World History

**Follow-ups:** Introduction to Journalism, History of International Journalism and Communication

### **Description:**

History of Chinese Journalism and Communication is a compulsory course for majors of journalism and communication. It aims to enable students to understand the development of China's news communication, news systems and operation management. Main contents are introduction to ancient news course, modern news paper development, news development in the 1911 revolution, Public of China, new China, and Hong Kong, Macao and Taiwan.

## **28338 History of Chinese and Foreign Advertising**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Advertising

### **Description:**

History of Chinese and Foreign Advertising is a compulsory course for majors of

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advertising. It aims at enabling students to master basic concepts and knowledge of this course, develop their practical and innovative abilities. This course covers advertising from the end of primitive society to the Opium War, advertising from the Opium War to the establishment of People's Republic of China, advertising in mainland since the establishment of People's Republic of China, a brief introduction of advertising in Taiwan, development of advertisements in the U.S, the UK, and France, and trends of global advertising in the twenty-first century.

### **28503 Introduction to Media Business Administration**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Journalism, Public Communication, Management, Economics

**Follow-ups:** Media Human Resource Management, Broadcasting and Television  
Program Marketing

**Description:**

Introduction to Media Business Administration is a compulsory course for students of journalism and advertising. It requires students to master basic concepts, theories, contents, objects, models and systems of media business management, cultivate a sense of marketing and management, thus laying a solid foundation for their future study. Main contents are characteristics, studying objects of business management, media interacting theory, media service, economic returns of brands, media produce management, media HR management, operating models, strategies, media brand-establishing and upgrading, and development of China's media industry.

### **28523 Advertising Market Research**

**Credits:** 2

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**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Advertising, Advertising History of China and Foreign Countries

**Description:**

Advertising Market Research is a compulsory course for majors of advertising,. It aims at enabling students to master basic knowledge and design of advertising, improve students' professional quality and comprehensive ability. This course covers a general introduction to advertising market research, process of advertising research, organization of advertising research, administrator management, measurement, sampling design, questionnaire design, researches on of literature review, qualitative research methods, observation and experimental methods, processing of information, basic statistical methods, and research writing.

## **28555 Advertising Planning and Originality**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** A General Introduction to Advertising

**Description:**

Advertising Planning and Originality is a compulsory course for majors of advertising. It aims at enabling students to master theoretical knowledge and methods in Advertising Planning and Originality, develop their abilities to design and create advertising by applying core spirit of Advertising Planning and Originality. This course covers a general introduction to advertising planning, varieties of advertising planning, target market strategies of advertising planning, advertising campaign planning, advertising planning and marketing, core strategies of advertising planning, advertising planning and public relations, promotion, and introduction to advertising originality.

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## **28559 History of International Journalism and Communication**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

History of International Journalism and Communication is a compulsory course for majors of journalism and communication. It aims at students' mastery of basic knowledge and theories of history of international journalism and communication, and their ability to apply their knowledge into practical use. Main contents are development and changes of international journalism and communication from the seventeenth to the twentieth century.

## **28563 News Interviewing and Writing**

**Credits:** 4

**Credit hours:** 64

**Categories:** Compulsory

**Prerequisites:** Introduction to Journalism

**Description:**

News Interviewing and Writing is a compulsory course for majors of journalism and communication. The objective of this course is to enable students to master basic knowledge, methods and skills of news interviewing, cultivate their senses of news value, and abilities to news writing. Main contents are introduction to news interview, news value and sensibility, basic requirements of news broadcasting, objects, preparations and skills of news interviewing, introduction to news writing, news report writing, feature writing, in-depth report writing, news broadcasting writing, TV news writing, and online news writing.

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## **29015 Contemporary China's Political System**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Contemporary China's Political System is a compulsory course for majors of public administration. It aims at enabling students to have a comprehensive and profound understanding of theoretical principles, enrich their knowledge regarding political theories, and develop their abilities of administration. This course covers constitutional systems, ruling party and participating parties in China, people's congress systems, head of state systems, administrative systems of central government, local administrative systems, systems of regional national autonomy, special administrative region systems, trial and procuratorial systems, military systems, multi-party cooperation and political consultation systems, civil servant systems, election systems, grass-roots autonym and democratic systems.

## **29024 Administrative Law**

**Credits:** 3

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Administrative Law is a compulsory course for majors of public administration. It aims at enabling students to master theoretical principles, enrich their knowledge regarding political theories, and develop their abilities of administration. This course covers constitutional systems, ruling party and participating parties in China, people's

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congress system, head of state systems, administrative systems of central government, local administrative systems, systems of regional national autonomy, special administrative region systems, trial and procuratorial systems, military systems, multi-party cooperation and political consultation systems, civil servant systems, election systems, grass-roots autonomy and democratic systems.

## **29030 International Politics**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

International Politics is a compulsory course for majors of public administration. It aims at enabling students to basic theories and analytical methods of international politics, develop their oral communicative abilities, thus laying a solid theoretical foundation for further observing and analyzing international issues. This course covers formation and development of international politics, world systems and international pattern, basic driving force of international politics, behavioural subjects in international politics, transnational politics and organization, external environment of international politics, and restrictive factors of international politics.

## **29035 Introduction to Sociology**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

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Introduction to Sociology is a general education course for all majors of economics. It aims to enable students to master the related theories and basic knowledge of sociology, and develop their ability to observe the society and explain social issues objectively, thus to discover more efficient ways to solve these issues. This course covers introduction, society and its components, socialization of human, social interactions, primary social groups, social organizations, social stratification and mobility, community, social systems, social issues, social control, social security, social policies, social changes, modernization, methods of social research and investigation.

## **29071 Public Policy Analysis**

**Credits:** 3

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Public Policy Analysis is a compulsory course for majors of public administration. It aims at enabling students to master basic knowledge and theories of public policy, develop their abilities to communicate with decision makers. This course covers public policy, analyses of public policy, public political organization, rules and decision makers, policy instrument, public policy issues, public policy making, legalization of public policy, implementation of public policy, and discussions in classes.

## **29506 Public Economics**

**Credits:** 3

**Credit hours:** 32

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**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Public Economics is a compulsory course for majors of public administration. It aims at enabling students to master the most popular and advanced principles of economics, understand necessities of the government's economic activities in market economy. This course covers foundation of public economy, research subjects of public economy, causes of market failure, supply of public goods, public choices, public expenditure, public taxation policy, financial deficits and debts, and economic functions of the government.

### **30008 Fundamentals of Writing**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Fundamentals of Writing is a basic course in writing practice for all non-Chinese majors. It is designed to enable students to master genres and elements of general writing, and promote their writing skills and ability to express themselves through various writing projects. The contents of this course include basic theories of writing, practical writing, and literary writing. This course serves as an extension and crystallization of knowledge of writing learned at high school, and focuses on analysis and writing practice of various genres and registers.

### **30061 Foundation of Aesthetics**

**Credits:** 2

**Credit hours:** 32



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**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Foundation of Aesthetics is a compulsory course for students of industrial design. The purposes of this course are to enable students to master objects of aesthetics, understand significance and methods of learning aesthetics, general processes of generating aesthetics so as to improve their abilities to understand, discover and create beauty; develop their capacity to analyze, assess, and appreciate beauty in nature and society by applying book knowledge learned, and lay a solid foundation for their all-round development in future. The contents of this course cover generation and development of beauty, nature and form of beauty, typology of beauty, properties of sense of beauty, psychological qualities of sense of beauty, differences and universality of beauty, and improvement of subjects related to aesthetics appreciation.

### **30071 Introduction to Chinese Culture**

**Credits:** 2

**Credit Hours:** 32

**Category:** Compulsory

**Prerequisites:** None

**Description:**

Introduction to Chinese Culture is a basic specialized course for students of Art Design. It aims to enable students to understand Chinese traditional culture to enhance their cultural foundation, and develop their love towards Chinese traditional culture. This course covers features of Chinese traditional culture, Chinese classical philosophy, ancient Chinese academic, Chinese classical literature and arts, ancient Chinese history and geography, ancient Chinese religions, ancient Chinese politics and regulations, Chinese traditional thought of ethics, ancient Chinese manners and customs.

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## **30072 Ancient Chinese Literature**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Ancient Chinese Literature is a compulsory course for majors of English. It aims to enable students to understand classical literature in Chinese history, and improve their literature accomplishment. This course covers Books of Songs, Qu Yuan, Chu Ci, Tao Te Ching, I Ching, Zhuang Zi, analects of Confucius, folk songs in Han Dynasty, Tang Dynasty poetry, Li Bai and Du Fu, literature in Song Dynasty, literature in Liao and Jin Dynasty, literature in Yuan Dynasty, and literature in Qing Dynasty.

## **30076 Modern and Contemporary Chinese Literature**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Modern and Contemporary Chinese Literature is a compulsory course for students of Chinese language and literature. The purposes of this course are to enable students to familiarize writers and works of modern and contemporary Chinese literature, movement and thoughts, basic knowledge of literature theories and critical, understand modern and contemporary Chinese literature and develop understandings of literature and culture. The main contents of the course cover origins and development of contemporary Chinese literature; novels, new poems, prose, essays

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and dramas of 1920s; literature movements and thoughts of 1930s; novels, new poems, prose, essays and dramas of 1930s; literature movement and thoughts of 1940s; novels, new poems, prose, essays and dramas of 1940s.

## **30128 Basic Writing**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Management

**Description:**

Basic Writing is a compulsory course for students of economics, management and humanity. It aims to enable students to form a habit of independent thinking, sound writing thought and awareness of creativity, and lay a solid foundation of practical type of writing, journalese, and literary style of writing. The contents of the course are structure, expressing methods of passages, writing skills, official Chinese writing, questionnaire, applied writing of technology, academic paper, poetry, prose, novels and literary review.

## **30129 Fundamentals of Writing (B)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Fundamentals of Writing (B) is a compulsory general education course for all the students. It aims to enable students to master basic theories and knowledge of writing, understand basic laws of writing, and develop their abilities to write well. The

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contents of this course are introduction (i.e. concepts, meanings and methods of writing), factors of a composition, writing process, practical writing, introduction to documents writing, notices writing, letters writing, report writing, summaries writing, investigation reports writing, critical writing, theses writing, business contracts writing, and advertisement writing.

### **30130 Foreign Literature (1)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Foreign Literature (1) is a compulsory course for students of Chinese language and literature. The purposes of this course are to enable students to master basic knowledge of foreign literature, improve their abilities to understand, appreciate and analyze foreign literature works. The main contents of the course cover general introduction of foreign literature, literature of Middle Ages, religious literature, knight literature, Dante, literature in renaissance periods, development situation of humanistic literature Shakespeare, classicism literature in the seventeenth century, classicism literature in French, French catholic literature, artistic features of operas, and enlightenment literature in the eighteenth century.

### **31001 Physical Education (1)**

**Credits:** 1

**Credit hours:** 30

**Categories:** Compulsory

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**Prerequisites:** None

**Description:**

Physical Education (1) is a compulsory course for all the students. It aims to enable students to master basic knowledge of physical education and develop their physical strength and improve their physique by taking part in different kinds of sports. The contents of this course are the fundamentals and theories of sports, basic skills, rules, regulations and terminology associated with these sports, and participation in rope skipping, jogging, running, long jump, high jump, table tennis, badminton, martial arts, Taiji Boxing, basketball, volleyball, football, and aerobics dancing.

### **31002 Physical Education (2)**

**Credits:** 1

**Credit hours:** 30

**Categories:** Compulsory

**Prerequisites:** Physical Education (1)

**Description:**

Physical Education (2) is a compulsory course for all the students. It aims to enable students to actively participate different sorts of sports activities, enrich their knowledge of physical education, understand common knowledge of sports health, develop spirit of cooperation and understand concepts of life-long physical education. The contents of this course are fundamentals and theories of sports, basic skills, rules, regulations and terminology associated with these sports, and participation in shot put, discus throw, hammer throw, long jump, high jump, basketball, volleyball, football, ping-ping, and badminton.

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### **31003 Physical Education (3)**

**Credit:** 1

**Credit hours:** 30

**Categories:** Compulsory

**Prerequisites:** Physical Education (2)

**Description:**

Physical Education (3) is a compulsory course for all the students. It aims to enable students to actively participate different sorts of sports activities, master one or two kinds of sports training methods, develop their ability to adjust negative mood through physical activities, form an optimistic attitude and develop good sports ethnics. The contents of this course are fundamentals and theories of sports, and techniques for ping-pong, including double hit, double bounce, serve, no-hiding service, spin service, service reception, pen-hold grip, tennis grip, body hit, smash, spin, chop, lift, and attack after service.

### **31004 Physical Education (4)**

**Credits:** 1

**Credit hours:** 30

**Categories:** Compulsory

**Prerequisites:** Physical Education (3)

**Description:**

Physical Education (4) is a compulsory course for all the students. It aims to enable students to further develop sports skills, actively participate teaching activities, improve abilities of organization and cooperation, formulate fitness plans that are suitable for them, understand laws of referees, and understand knowledge of aesthetics of sports. The contents of this course are fundamentals and theories of sports, aerobics, Taiji sword, cudgel play and techniques of basketball, including bank

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shot, jump shot, layup, perimeter shot, set shot, three-point shot, free throw, double pump, fade-away shot, and hook shot.

### **30503 Ancient Chinese Literature (1)**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Ancient Chinese Literature (1) is a compulsory course for students of Chinese language and literature. The purposes of this course are to enable students to have a general and systematic understanding of great achievements, developing clues and laws of Ancient Chinese Literature and make scientific comments on representative writers, thoughts of major works and artistic values of each period. The main contents of the course cover origins of literature and primitive ballads; ancient myths, development situations of pre-Qin literature; The Book of Songs, ideological contents of folk songs of The Book of Songs; artistic achievements of The Book of Songs, prose of pre-Qin period, argumentative prose, historical prose, argumentative prose, artistic feature of Chu Ci, literature in Qin and Han dynasties, folk songs in Han Dynasty, origins and development of five-word poem, and Wei Jin literature.

### **30523 Modern Chinese (1)**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

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**Description:**

Modern Chinese (1) is a general education course for all majors of liberal arts and social sciences. It aims to enable students to master properties and contents of modern Chinese, understand meanings and functions of "Language" and "Modern Chinese", characteristics of pronunciation, vocabularies, characters and rhetorics of Modern Chinese, improve their abilities of understanding, analyzing and applying Chinese. This course covers the basic theories of mandarin, grammar, vocabularies, rhetorics, and genres of Chinese language.

**31041 Introduction to Sports**

**Credits:** 1.5

**Credit hours:** 24

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Introduction to Sports is a compulsory course for majors of social sports. It aims at enabling students to master basic theories of sports and macro-policies of national sports, develop their abilities to analyze and solve practical problems. This course covers sports and sports science, modern society and sports, sports and other social sports, functions of sports, objectives and tasks of China's sports, organization and rules of sports in China, means of physical education, origins and development of Olympic Game, Olympic Game system, Olympic Game and modern society, Olympic Game and China, Olympic Game and sports in future.

**31044 Athletic Physiology**

**Credits:** 3

**Credit hours:** 48



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**Categories:** Compulsory

**Prerequisites:** Sports Anatomy

**Follow-ups:** Sports Biochemistry, Sports Biomechanics, Athletic Training

**Description:**

Athletic Physiology is a compulsory course for majors of social sports. It aims to enable students to understand changes and causes of functional activities of human body in doing sports and training, master the basic physiological principles of sports and training, and develop their abilities to apply physiological knowledge of sports to practical sports. The contents of this course are muscular activity, the types and movement of skeletal muscle fiber, breath, blood, blood circulation, the supply and consumption of oxygen in doing sports, material metabolism, energy metabolism, feelings and sports, neurarchy of muscular activity, learning of motor skills, hormonal regulation of muscular activities, physiological bases of exercises, sports and children, sports and women, sports and the aged, sports and environment.

## **31049 Fundamentals of Wushu**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Fundamentals of Wushu is a compulsory course for majors of social sports. It aims to enable students to master basic theories and technologies of Wushu, understand its characteristics and essentials, and develop students' abilities to create new moves of Wushu. The contents of this course are introduction and development of Wushu, graphics of Wushu, organization and judgment of routines and free combat of Wushu competition, boxing of Wushu, instruments of Wushu, Wushu appreciation, basic skills of Wushu, long boxing, simplified Taiji Boxing, free combat, short apparatus, and long apparatus.

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## **31054 Fundamentals of Basketball**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Fundamentals of Basketball is a compulsory course for majors of social sports. It aims to enable students to master basic techniques of basketball, understand the tactics, rules, judgment of basketball, and develop their abilities to compete and cooperate in sports competition. The contents of this course cover course introduction, competition methods and rules of basketball, dribble techniques, skill practices, standing dribble, teaching competition, stop and pop dribble, chest pass, push shot, fast attack tactics, one-on-one defence and attack, zone defence and attack zone defence.

## **31055 Sports Anatomy**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Sports Anatomy is a compulsory course for majors of social sports. It aims at enabling students to master basic theories and knowledge of anthropotomy, develop their perspectives of historical materialism and dialectical materialism, thus laying a solid foundation for related follow-up courses. This course covers cells and intercellular substance, ground tissues, bones, bone union and skeletal muscles,

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anatomical analyses of sports movement, digestive systems, respiratory systems, urinary systems, sense organ, vasculature, nervous systems, endocrine systems, reproductive systems, growth, development, and aging of mankind.

## **31056 Sports History**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Introduction to Sports, Sociology

**Follow-ups:** Sports Sociology, Sports Industrial Economics, Sports Administration

**Description:**

Sports History is a compulsory course for majors of social sports. It aims to enable students to master history of sports, understand development of sports, and develop their abilities of scientific thinking. The contents of this course are introduction, original sports, sports of Europe in Middle Ages, the rise of modern sports, establishment of physical education in schools, international communication of modern sports, crises of Chinese traditional sports, modernization of Chinese sports, development of global sports, globalization and diversification of modern sports, and Chinese sports in the world stage.

## **31057 Fundamentals of Gymnastics**

**Credits:** 1

**Credit hours:** 16

**Categories:** Compulsory

**Prerequisites:** Sports Anatomy, Introduction to Sports

**Description:**

Fundamentals of Gymnastics is a compulsory course for majors of social sports.

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It aims to enable students to master theories, techniques and skills of gymnastics, understand how to teach, demonstrate, offer protection, and correct errors in gymnastics, and develop their abilities to teach and train athletes. The contents of this course are protection and assist, gymnastics movements teaching, technological analysis of typical gymnastics movements, organizing and judging artistic gymnastics, horizontal bar, parallel bars, and jump.

### **31311 Sports Communication**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Sports Communication is a compulsory course for majors of social sports. It aims to enable students to master basic knowledge of sports communication, understand various phenomena, properties, rules and sports communication, and develop their abilities to predict development of sports communication technologies. The contents of this course are spread and communication, sports communication and print media, sports communication and electronic media, sports communication and network media, environment of sports communication, psychology of sports communication, sports effects and its measurement, planning of big sports events communication, and guidance of sports communication.

### **31318 Sports Sociology**

**Credits:** 2

**Credit hours:** 32

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**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Sports Sociology is a compulsory course for majors of social sports. It aims at enabling students to master basic knowledge of sports sociology, and prepare themselves for future work related to Sports Sociology, sports administration and enterprise management. This course covers sociology and sports sociology, research methods of sports sociology, sports and social structures, sports and social operation, population and sports population, sociological analyses of competitive sports, sports group and sports association, sports and culture, sports and education, sports and science and technology, sports and mass media, social issues of sports, sports and ethnic groups, sports and religion, analyses of sports sociology, sports and modernization of society, sports and life styles.

## **31325 Tennis**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Track and Field

**Description:**

Tennis is a compulsory course for majors of social sports. It aims to enable students to master theories, professional knowledge and basic techniques of tennis, understand how to watch a tennis game, and develop their abilities to compete and cooperate professionally. The contents of this course include introduction to tennis, rules and organizing of tennis games, tennis games judgment, serve, grip, return of service, volley, overhead smash, lift, drop shot, bounce, physical fitness, tactics, and teaching competition.

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## **31328 Sports Biochemistry**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Sports Anatomy, Sports Physiology

**Follow-ups:** Sports Biomechanics, Athletic Training,

**Description:**

Sports Biochemistry is a compulsory course for majors of social sports. It aims to enable students to master influence of sports on human body, understand features and rules of metabolism when doing sports, and develop their abilities to apply sports biochemistry to practical sports. The contents of this course are introduction, human body of doing sports, enzyme, substance metabolism, energy metabolism, introduction to saccharides, introduction to lipid, introduction to protein, biochemical features of fatigue and recovery, and biochemical assessment of human body.

## **31500 Outdoor Sports**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Outdoor Sports is a compulsory course for majors of social sports. It aims at enabling students to understand basic knowledge and techniques of outdoor sports, and develop their abilities of guiding people to practice outdoors by applying the knowledge learned. This course covers introduction to outdoor sports, methods to improve physical quality, outdoor medical services, equipment, life skills, knowledge of surviving in the field, training of psychology, orienteering, and knowledge of drifting.

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## **31505 Modern Technologies of Physical Education**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Introduction to Sports

**Description:**

Modern Technologies of Physical Education is a compulsory course of social sports. It aims to enable students to master basic knowledge of modern technologies of physical education, and applications of common-used hardware and software of modern technologies of physical education, understand the working procedures of modern technologies of physical education in physical education, and develop their abilities to apply modern technologies of physical education to physical teaching. The contents of this course are introduction of applications of commonly used hardware and software, micro teaching of social sports majors, theories and practices of CAI teaching, application of network techniques in sports, applications of VR in sports, search of document literature in sports science and physical education, and applications of GIS in sports.

## **31707 Badminton**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Badminton is a compulsory course for majors of social sports. It aims to enable students to master the concepts, knowledge, principles of motion, and techniques of badminton, understand theories and approaches of badminton teaching, and develop their abilities to compete in real competitions. The contents of this course cover

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introduction to badminton, organizing of badminton competition, competition rules of badminton, practical techniques of badminton, and badminton teaching.

### **32101 An Intellectual History of China**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** History of Ancient China, History of Modern China (1840-1919)  
History of Modern China (1919-1949)

**Description:**

An Intellectual History of China is a compulsory course for majors of Chinese, history and philosophy. It aims to enable students to learn all great thinkers in Chinese history, master elementary clues of development of Chinese thought and make a contrast of differences and similarities among various schools of thoughts. The contents of this course cover religious thoughts in Shang and Zhou, thoughts in the Spring and Autumn Period, Confucius and its inheritance and development of ancient thoughts, theoretical thinking of Lao Tzu, thoughts of Mo Tzu, Mencius, and Chuang Tzu.

### **32103 Introduction to History**

**Credits:** 3

**Credit Hours:** 48

**Category:** Compulsory

**Prerequisites:** None

**Description:**

Introduction to History is a compulsory for majors of history. It aims to enable students to understand course structures, basic questions, theories, and approaches,



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master right ideas of history, and develop their abilities to analyze basic problems of history. The contents of this course are reasons to learn history, relationship between the “truth” and “usefulness” of history, course structures, basic questions of history, historical consciousness, Historicism, history objectivity, history interpretation, gathering, sorting and identification of historical materials, “new” history, responsibilities of historians and historical workers.

### **32104 History of Chinese Historiography**

**Credits:** 2.5

**Credit hours:** 40

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

History of Chinese Historiography is a compulsory course for students of history. It aims to enable students to familiarize major historians in ancient China and their masterpieces and compilation styles, and master development of historical thoughts. The contents of this course are ancient legends, historiography and politics in Qin and Han dynasties, Sima Qian and his Book of History, historiography development in Song and Yuan dynasties, Sima Guang and Tzu Chih T`ung Chien, philosophy of history and historiography of Chu His, modern historiography, expansion and development of Marxist historiography in China.

### **32105 History of Western Historiography**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** History of the World, History of Western Culture

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**Description:**

History of Western Historiography is a compulsory course for students of history. It aims to enable students to master general trends of western historiography in past two thousand years, appraise historiographers in various fields and their achievements correctly. The contents of this course are classical history, city-state and its civilization, founding of western historiography, historiography between 4th century BC and 3rd century BC, historical thoughts of Tacitus, modern historiography, social development and civic humanism, scientific progress and social transmutation, and modern historiography.

**32107 Selected Works of Chinese History****Credits:** 3**Credit hours:** 48**Categories:** Compulsory**Prerequisites:** None**Description:**

Selected Works of Chinese History is a basic course for majors of history. It aims to enable students to master abilities to read and understand ancient books, and develop their skills to observe and analyze social phenomena and changes. The contents of this course are inscriptions on bones or tortoise shells of the Shang Dynasty, inscriptions on ancient bronze objects, Shangshu, the Book of Songs, Zuo Zhuan, Guo Yu, the Origin of the World, Zhan Guo Ce, Chu Ci, Record of History, Han Shu, Hou Hanshu, History of the Three Kingdoms, Jin Shu, Song Shu, Wei Shu, New Anecdotes of Social Talk, and Waterways.

**32117 Historical Philology****Credits:** 2

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**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Historical Philology is a compulsory course for students of history. It aims to enable students to master basic knowledge and theories of Chinese historical philology, acquire competence in reading and retrieving historical documents and lay a foundation for further study and collation of ancient books. The contents of this course cover document carriers, collection and missing of documents, document edition, document collation, bibliography, encyclopedia and series, chorography and genealogy, sylloge and separate collection.

## **32122 Modern World History**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Modern World History is a compulsory course for majors of history. It aims to enable students to master the historical events from the sixteenth century to the nineteenth century, understand basic threads of modern world history, and develop their abilities to observe and analyze problems. The contents of this course are introduction, great discoveries of geography, the Renaissance, Religion Reform, Bourgeois Revolution in Netherlands, English Revolution, Russian autocracy, the Enlightenment Movement in Western Europe, the Oriental (Japan and India), the Ottoman Empire, colonial expansion of Western Europe, the Independent War of U.S.A., independent wars in Latin America, the French Revolution, the Vienna Conference, the Industrial Revolution, the development of labour movement, the birth of Marxism, national democracy of Western countries, the Reform Movement, liberalism, Meiji reform, transition to monopolism, international relationships from

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1871 to 1900, super powers attempting to divide the world.

### **32123 Ancient World History**

**Credits:** 2.5

**Credit hours:** 40

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

History of the Ancient World is a basic course for majors of history. It aims to enable students to understand main contents, characters, features and up-to-date development of ancient world history, master important events, concepts, time and ancient books of ancient world history, and develop their abilities to synthesize and analyze ancient history. The contents of this course include prehistoric times of human beings, emerge and development of West Asian Civilization, Egypt in Bronze Age, nomadism and farming of Eurasia in Bronze Age, West Asia and North Africa in 100 B.C., India from division to unity, the Spring and Autumn period and the Warring States Period of China, ancient Greece, ancient Rome, the Age of Empires, and world situations between 300 and 600 AD.

### **32124 Modern World History**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Ancient World History, Medieval World History, Modern World History (1917-1945)

**Description:**

Modern World History is a compulsory course for students of history. It aims to

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enable students to acquire elementary clues of modern world history and master main historical facts of modern world history. The contents of this course are British Industrial Revolution, development of capitalism, the First World War, founding of Versailles-Washington System, the Second World War, rising of international communist movement, anti-colonialism of peoples of Africa, Asia and Latin America, scientific technology and culture in the first half of the twentieth century.

### **32125 History of Medieval World**

**Credits:** 2.5

**Credit hours:** 40

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

History of Medieval World is a basic course for majors of history. It aims to enable students to master concepts, knowledge and theories of world medieval history, understand the establishment, development, decline and fall of feudal society, and develop their abilities to analyze and solve problems. The contents of this course are formation of farming society and nomadic society in Eurasia, migrations of Asian people and European people, feudal countries in East Asia, feudal countries in South Asia, the Arab Empire, feudal countries in East Europe, feudal countries in West Europe, the Mongol Empire, newly emerged Islamic countries, and development of feudal countries in West Europe.

### **32134 Ancient Chinese History (1)**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

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**Prerequisites:** None

**Follow-ups:** Ancient Chinese History (2)

**Description:**

Ancient Chinese History (1) is a basic course for majors of history. It aims to enable students to master basic knowledge of ancient China's history, understand development principles of Chinese history, and develop their abilities to analyze and solve problems. The contents of this course are ancient times of China, clan system and early states, the Xia Dynasty and Shang Dynasty, the Western Zhou Dynasty, the five overlords in the Spring and Autumn Period and the seven powerful states of the Warring States Period, reforms during the Spring and Autumn Period and the Warring States Period, contention of a hundred schools of thoughts, rise and decline of the Qing Dynasty, the Western Han Dynasty, the Eastern Han Dynasty, nationalities and frontiers, political system of Qing Dynasty and Han Dynasty, the Three Kingdoms and Western Jin Dynasty, the Eastern Jin Dynasty and the South Dynasty, Sixteen Kingdoms Period and Northern Dynasties, political systems of Wei-Jin and the Northern and Southern Dynasties, culture of Wei-Jin and the Northern and Southern Dynasties.

### **32136 Ancient Chinese History (2)**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Ancient Chinese History (1)

**Follow-ups:** Modern and Contemporary Chinese History

**Description:**

Ancient Chinese History (2) is a basic course for majors of history. It aims to enable students to master history development from the Sui Dynasty to Qing Dynasty, understand historical features, relationship among ethnic groups, and cultural status

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from Sui Dynasty to Qing Dynasty, and develop their abilities to observe and analyze historical events. The contents of this course are primary formation of Huaxia Civilization, Western Chou Dynasty and the Spring and Autumn Period, social changes of the Warring States Period, the Qin Dynasty, the Western Han Dynasty and Chu-Han War, the rise and fall of Eastern Han Dynasty, economy, society, and culture of Wei-Jin and the Northern and Southern Dynasties, prosperity of Sui Dynasty and Tang Dynasty, re-appear of feudal separation, An Lushan Rebellion, Reform of Northern Song Dynasty, Song Dynasties and Liao, Xia, Jin, Meng, Great Mongolia Empire, economy, society, and culture of Sui Dynasty, Tang Dynasty, Song Dynasty, and Yuan Dynasty, Zhu Yuanzhang and early Ming Dynasty, political overview of late Ming Dynasty, frontier situations of the Ming Dynasty and the rise of Qing Dynasty, Kang-Qian heyday and its influence, economy, society, and culture of Ming Dynasty and Qing Dynasty.

## **32138 Modern Chinese History**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Modern Chinese History is a compulsory course for majors of history. It aims to enable students to master basic knowledge of modern Chinese history, understand trends of historical researches in modern Chinese history, and develop their abilities to search books and materials and analyze problems. The contents of this course are basic threads of modern Chinese history, basic properties and features of modern Chinese society, current research status of modern Chinese history, China and the West before the Opium War, Opium Prohibiting Campaign, the Opium War, the Taiping Heavenly Kingdom Movement, Westernization Movement, Kang Youwei's

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thoughts of political reform, activities of reformists, government reform of Qing Dynasty, reform of Hunan, the Reform Movement of 1898, and reforms and revolutions of China in early twentieth century.

### **32141 History of Modern China (1919-1949)**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

History of Modern China (1919-1949) is a compulsory course for students of history. It aims to enable students to master basic knowledge related to history of modern China, familiarize general trends of academic researches and develop abilities to analyze and search documents and materials. The contents of this course cover Opium War, new mission of peasant revolt, Westernization Movement, Second Opium War, national crisis and awakening, chaos of Gengzi and final reform of Qing Dynasty, fall of the Qing Dynasty, academic thought and its achievements in the period of the Republic of China, the first ten years of Nanjing National Government, eight-year war of resistance and the end of Nanjing National Government.

### **32501 Traditional Chinese Culture**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Traditional Chinese Culture is a general education course for students of Chinese



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language and literature. The purposes of this course are to enable students to understand Chinese splendid cultural tradition and excellent educational academic traditions of Yue Lu academy and raise historical rationality, humanistic quality and cultural grade. The main contents of the course cover Chinese traditional philosophy, Chinese traditional religions, Chinese traditional ethics and morality, Chinese traditional literature, Chinese traditional art, Chinese traditional technology, Chinese traditional historiography, Chinese traditional education, and historical reform, traditional education and humanistic tradition of Yue Lu Academy.

## **33002 Literature Search and Utilization**

**Credits:** 1

**Credit hours:** 18

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Literature Search and Utilization is a compulsory course for students of building environment and equipment engineering. The purposes of this course are to enable students to master basic principles and methods of information search, develop students' abilities to use traditional and modern searching methods flexibly, take advantage of modern information technology to complete literature search projects independently, establish information searching system on their own, and enhance the capacity of life-long learning and continual innovation. The contents of this course cover basic knowledge of information searching and searching techniques, searching methods and techniques of journals and books, special literature, internet information searching devices and systems, and analyses and utilization of information.

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## **34001 Military Skill Training**

**Credits:** 2

**Credit hours:** 2-3 weeks

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Military Skill Training is a compulsory course for university students in higher education. This course aims at students' mastery of the basic queuing skills, qualified discipline, standard appearance and bearing, shooting essentials and live weapon firing, understanding of basic theories of military tactics and actions of individual tactics, identification and use of topography, and experiences of marching, camping and field survival, in an effort to enhance their sense of organization and disciplines, develop collectivism and basic military disciplines. Main contents include Common Regulations of PLA, light weapon firing, basic military tactics, military topography and comprehensive skills.

## **34002 Military Theory**

**Credits:** 2

**Credit hours:** 36

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Military Theory is a compulsory course for university students in higher education, with a main focus on national defence education. This course aims to enable students to master basic knowledge, theories of China's national defence, military thought, strategic environment, military high technologies and information wars, develop their preliminary appreciation to military theory to analyze and solve

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practical problems in military domain by applying knowledge related, thus enhancing their sense of national security and their ideas of a strong national defence. Main contents include China's national defence, military thought, strategic environment, military high technologies and information wars.

## **49500 Psychology**

**Credits:** 2

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Psychology is a compulsory course for undergraduates. The purposes of this course are to enable students to grasp basic concepts and elementary theories of psychology; to provide insights into psychological phenomena and problems in life; to develop students' abilities to solve real-life problems with knowledge and principles in psychology; and develop the students' psychological qualities of mental and physical health. The contents of this course include various psychological phenomena.

## **50124 Open Experiments**

**Credits:** 1

**Credit hours:** 16

**Categories:** Elective

**Prerequisites:** None

**Descriptions:**

Open Experiments, a general education course in Hunan University, falls into the category of cultural quality courses. By taking this course, students are expected to be

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equipped with an improved level of initiative and positiveness, practicality and creativity. From 2007, this course is composed of two parts: 12 credit-hours of demonstrative and confirmative experiment projects from which students can choose by their own university wide, and no less than 16 credit-hours of comprehensive, creative experiment projects based on open laboratories of undergrads teaching of colleges concerned, in an effort to broaden students views, understand the frontier development of related disciplines and develop their abilities to analyze and solve practical problems.

### **78004 Biochemistry Experiments (1)**

**Credits:** 0.5

**Credit hours:** 16

**Categories:** Compulsory

**Prerequisites:** General Chemistry, Organic Chemistry, General Biology

**Description:**

Biochemistry Experiments (1) is a compulsory laboratory course for students of biotechnology. It aims to enable students to master basic theories, knowledge and experimental skills of biochemistry, and thus lay a foundation for further professional skill training. The contents of this course are a brief introduction of biochemistry laboratory course, preparation for experiment, ion-exchange chromatography separation of amino acids, colour reaction of amino acid and protein, transamination and preparations of polyphenol oxidase.

### **78007 Microbiology**

**Credits:** 3.5

**Credit hours:** 64

**Categories:** Compulsory

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**Prerequisites:** None

**Description:**

Microbiology is a basic course for students of Water Supply and Drainage Engineering. The purposes of this course are to enable students to master basic concepts, theories and experimental skills of microbiology, and improve their abilities to analyze, summary and work with the related problems of microbiology in water supply and drainage engineering. This course covers cell structures and functions, nutrition, respiration, metabolism, growth, reproduction, heredity and variation of microorganism; basic principles of biological treatment in waste water and drinking water.

## **78008 Microbiology Experiments**

**Credits:** 1

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Microbiology Experiments is a compulsory laboratory course for students of biotechnology. It aims to enable students to master basic theories, knowledge and experimental skills of biochemistry, and develop their abilities to think, analyze and solve problems. The contents of this course cover introduction of experimental microbiology, determine microoganim techniques, bacterial staining, medium preparing, microbe inoculation technology, microbiological cultivation technology, determination of analyzing microorganism reproduce, observation and description of micromorphological characteristics and phage detection techniques.

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## **78011 Genetics**

**Credits:** 3.5

**Credit hours:** 56

**Categories:** Compulsory

**Prerequisites:** Biochemistry, Cell Biology

**Description:**

Genetics is compulsory course for students of life science. It aims to enable students to master basic concepts and research methods of genetics, and understand fundamental laws of heredity and variation and essence. The contents of this course cover Mendel's laws, segregation laws, chromosome theories of inheritance, cell division, chromosome cycles, gene action and its relationship with environment, chromosome and linkage groups, genetic analyses of bacterium, chromosome aberration and cytoplasmic inheritance.

## **78012 Genetics Experiments**

**Credits:** 1

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** Experiments of Biochemistry, Experiments in Botany, Experiment of Zoology

**Description:**

Genetics Experiments is a compulsory course for students of biotechnology. It aims to enable students to master skills in experimental operation of modern genetics and basic experimental methods of genetics experiments, and develop their competence in scientific research. The contents of this course are analysis of human fingerprint, plasmid DNA amplification and extraction, preparation and observation of human X chromatin models, karyotype analyses, characters, life observing and

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feeding of drosophila, and preparation and observation of drosophila salivary gland chromosome.

## **78051 Animal Biology**

**Credits:** 2.5

**Credit hours:** 40

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Animal Biology is a compulsory course for students of biotechnology. It aims to enable students to master biological properties of animals and their general living processes and laws, and understand coordinative relationship between animals and environment. The contents of this course are definitions, characteristics and tasks of animal biology, animal groups and diversity, structures, functions and regulations of animal body, necessary condition for animal landing, examples of animal evolution, origins of species, evolutionary laws and phylogenetic development of animals.

## **78052 Experiments in Animal and Plant Biology**

**Credits:** 1.5

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Experiments in Animal and Plant Biology is a compulsory laboratory course for students of biotechnology. It aims to enable students to learn theoretical knowledge with scientific and practical attitudes, and master fundamental skills in conducting biology work. The contents of this course cover seeds and seedling, animal cells and

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tissues, structures of plant cells, cultivation and observation of protozoan, plant tissue, shapes of chicken and its internal anatomy, roots, stems and leaf of spermatophyte and blood grouping.

## **78057 Basic Chemistry Experiments**

**Credits:** 1

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Basic Chemistry Experiments is a compulsory laboratory course for students of biotechnology. It aims to enable students to master basic theories, knowledge and experimental skills of chemistry, and develop their abilities to think, analyze and solve problems. The contents of this course cover purification of industrial methanol, fusing point determination, electrolyte and colloid, oxidation reduction and coordination compounds, synthetic methods and capacity analyses.

## **78064 Microbiology (A)**

**Credits:** 3

**Credit hours:** 48

**Categories:** Compulsory

**Prerequisites:** Biochemistry

**Description:**

Microbiology (A) is a compulsory course for majors of biotechnology, biomedical engineering and molecular medicine. It aims to enable students to master general knowledge and theories of microbiology and fundamental skills in scientific researches, and learn up-to-date research achievements and technologies of



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microbiology. The contents of this course are bacteria, actinomyces, microzyme, mildew, virus, microbial nutrition, microbial metabolism, microbial genetics, microbial growth, microbial immunity and classifications of microorganism.

## **78066 Experiments in Organic Chemistry**

**Credits:** 1

**Credit hours:** 32

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Experiments in Organic Chemistry is a compulsory course for students of applied chemistry. It aims to enable students to master fundamental knowledge of organic chemistry, and develop manipulative abilities in the fields of organic synthesis and isolation and identification of compounds. The contents of this course cover laboratory safety and rules, melting test and thermometer calibration, recrystal and filtration, distillation and boiling point mensuration, wet distillation, equilibrium distillation and preparations of acetanilide.

## **78068 Plant Biology**

**Credits:** 2.5

**Credit hours:** 40

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Plant Biology is a compulsory course for students of biotechnology. It aims to enable students to master fundamental knowledge of plant biology and its development history and trends, and develop their competence in observing,

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analyzing and solving practical problems with initiative spirit. The contents of this course cover plant cells and tissues, structures and development of plant organs, plant physiology and regulation, plant diversity and evolution and the conservation and utilization of plant resources.

## **87001 Career Planning and Employment Guidance**

**Credits:** 1

**Credit hours:** 16

**Categories:** Compulsory

**Prerequisites:** None

**Description:**

Career Planning and Employment Guidance is a general education course for all undergraduates. It aims to enable students to develop the independent thinking of career planning, and a clear understanding about themselves, careers and social environments; acquaint themselves with job market and employment policies; obtain information of careers, social demands and knowledge of starting their own enterprises; develop their skills of self-exploration, decision-making and career management. This course covers an introduction to career planning, the basic theories and rules of career planning, job market and employment policies, cognition on personality, development of ability, professional ability, adjustment of value, development of interests, relationships between mankind and society, career expectation and exploration, time management, enhancement of EQ, interpersonal relation, and emotion control.