



E-Commerce (English)

School : School of Computer Science and Technology

Medium : English

The introduction of Major

This major take full advantage of the discipline computer science and technology of Northwestern Polytechnical University, integrate the high-quality resources of the school and enterprises, and take the rapid development of the global e-commerce industry as the development demand, and cultivate bilingual and cross-cultural communication capabilities in an order form. Master computer science and cross-border e-commerce technology and other basic theoretical knowledge and methods, with advanced e-commerce theoretical level and practical ability, with an international perspective to promote the implementation of cross-border e-commerce employment and entrepreneurship.

Core Courses

Data Structure
Discrete Mathematics I
Principles of Database
Principles of Computer Networks
Principles of Computer Composition
Computer Operating System
Microeconomics
E-commerce Technology and System Design
E-commerce security
Management
Frontier topics in finance and accounting
E-commerce logistics (cross-border)
Marketing
Fundamentals and Practice of International Trade
International Commercial Law
Cross border E-commerce Ecosystem I
Cross border E-commerce Entrepreneurship I
Cross border E-commerce Platform Operation I
Cross border E-commerce Ecosystem II
Cross border E-commerce Entrepreneurship II
Cross border E-commerce Platform Operation II

Business Administration (English)

School: School of Management

Medium : English

The introduction of Major

Business administration is a discipline that studies the basic theories and general methods of economic management of industrial and commercial enterprises. Its goal is to carry out effective enterprise management and business decision-making by using modern management methods and means according to the basic theories of management, economics and accounting, so as to ensure the survival and development of enterprises.

Business administration is a first-class discipline with strong practicality and the widest coverage in management. The not only pays attention to the study of basic theories and professional knowledge of management and economics, but also pays attention to the training of management methods and skills, but also pays attention to the cultivation of students' ability and quality to analyze and solve practical problems of enterprise management, as well as the mastery of enterprise management links.

This major aims to cultivate a noble character with good awareness of laws and regulations and the pursuit of excellence, aim at the forefront of the development of world management, master a solid foundation of management science and professional knowledge, explore new laws of management, accumulate new knowledge, create new methods, and put new discoveries into practice, so as to cultivate and master modern management knowledge for the industry and have the ability of organization and management Senior management talents with teamwork spirit, pioneering and innovative ability, leadership ability and global vision.

Core Courses

Organizational behavior

Marketing

Production operation and management

Financial management

Strategic management

Logistics and supply chain management

decision analysis

Biotechnology (English/Chinese)

School : School of Life Sciences

Medium : English/Chinese

The introduction of Major

Biotechnology focuses on applied basic research and applied technology development. It is the hub and bridge to transform basic theoretical achievements into technologies and products with application value. The biotechnology major of Northwestern Polytechnical University relies on the School of Life Sciences to carry out student training. There are 69 full-time teachers in this major, including 15 professors and 30 associate professors. This major mainly aims at the major needs in the field of national economy and national defense, cultivates and grasps solid basic knowledge of basic theory and professional practical skills of life science, and is familiar with the development status of bioscience and technology, future development trend and its application in production practice, leading talents who understand the cross application of bioscience and technology in the field of aerospace and navigation. The teaching and scientific research platforms supported by this major include "national defense key discipline laboratory of space biological experiment simulation technology" of the Ministry of industry and information technology ", " Shaanxi life science experiment teaching demonstration center ", " Shaanxi international joint research center of flexible electronics and health science ", Xi'an" Key Laboratory of special medicine and health engineering ", etc. In addition, the University and department have signed student exchange agreements with many universities in the United States, Canada, Germany and Japan, which can provide international exchange and learning opportunities for all English Majors of biotechnology.

Core Courses

Biophysics (English)

Stem Cell Biology (English)

Physiology (English)

Molecular Biology (English)

Biotechnology (English)

Bioinformatics (English)

Molecular Biology Experiment (English)

Fermentation Engineering

Bioinformatics

Genetic Engineering

Synthetic Biology

Protein and Enzyme Engineering

Immunology

Cell Engineering
Biochemical Separation and Analysis Technology
Bioengineering Comprehensive Experiment
Biophysics

Computer Science and Technology (English)

School : School of Computer Science

Medium : English

The introduction of Major

The specialty of computer science and technology belongs to information technology. It aims to cultivate students with systematic theory, knowledge, and techniques of computer hardware, software, and application. The graduate students can conduct computer education, scientific research and application in research institutes, education colleges, companies, and governments.

Core Courses

Fundamentals of Electric Circuits I

Experiments for Fundamentals of Electric Circuits I

Discrete Mathematics I

Data Structure

Data Structure Experiment

Digital Logic Design

Digital Logic Design Experiment

Algorithm design and analysis

Algorithm design and analysis Experiment

Object Oriented Programming

Object Oriented Programming Experiment

Computer Organization and Architecture

Computer Operating System

Compiling Principle

Database Concepts

Database Concepts Experiment

Principle of Computer Network

Principle of Computer Network Experiment

Electrical Engineering and Automation (English)

School : School of Automation

Medium : English

The introduction of Major

The specialty is key Specialty of national defense and characteristic specialty of Shaanxi Province. Students of the specialty can take part in the double master degree program of NPU and foreign college through personnel selection. The specialty, with widely specialized subjects and strong adaptability, focuses on strong electricity, assisted with weak electricity. It has become a teaching and scientific research base for the specialist in the field of Electrical Engineering and Automation both in civil and military realms, with the features of aeronautics, astronautics and nautical.

The specialty of Electrical Engineering and Automation was founded in Harbin Institute of Military Engineering in 1953, and the entire establishment merged with NPU in 1970. In 2003, the Department of Electrical Engineering was established based on this specialty, which was the first level discipline authorized to grant doctorate degree. Currently, the department subordinates three second-class disciplines, including Power Electronics and Power Drives, Electric Machines and Electric Apparatus and Power System and Its Automation.

Core Courses

Electrical Machine

Power Electronics

Power System

Electrical Drive and Control System

Electronics and Information Engineering (English)

School : School of Electronics and Information

Medium : English

The introduction of Major

The electronic information engineering specialty is developed from radar specialty established in 1958 for many years. It belongs to the key construction specialty of the former Commission of science, technology, and industry for national defense, Shaanxi's famous brand specialty, and international talent training pilot specialty. It mainly studies the acquisition and processing of information, the design, development, application, and integration of electronic equipment and information systems. It integrates modern electronic technology, information technology, communication technology, and computer technology. Based on the all-English curriculum system, electronic information engineering (international class) trains senior electronic engineering technical talents and international talents in electronic information engineering with a solid theoretical foundation, strong engineering practice ability, wide adaptability, and high professional quality in the field of electronic information. Graduates will be able to engage in research and development in the field of electronic and information engineering at home and abroad, It covers the fields of electronic and information equipment and systems, signal and information acquisition, transmission and processing, automatic control, communication, microelectronic systems, computer applications, RF and microwave technology, etc.

Core Courses

Signal and system

Signal and system experiment

Fundamentals of Analog Electronic Technology

Experiments of Analog Electronic Technology

Fundamentals of digital electronic technology

Experiments of digital electronic technology

Mathematical equations and special functions

Computing Method

High frequency electronic circuit

Digital Signal Processing

Electromagnetic Field and Electromagnetic Wave

Communication Principle

Microwave Technology and Antenna

Mechanical drawing

Complex Function and Integral Transformation

Basic Circuit I

Experiments of Basic Circuit I

Civil Engineering (English)

School : School of Mechanics,Civil Engineering and Architecture

Medium : English

The introduction of Major

The ultimate goal of this major is to cultivate senior professionals in construction, transportation, civil infrastructure and aerospace facilities engineering. Train and master the basic theories and knowledge of structural engineering, geotechnical engineering, tunnel and bridge engineering, road engineering, disaster prevention reduction and protection engineering. Accept the basic training of registered engineers and have the ability to engage in civil engineering project planning and design, construction and management, research and development. After graduation, students can engage in technical or management works with broad employment prospects in the design, construction, management, investment, development, research and education departments of structural construction, underground buildings, tunnels and bridges, roads, airports and ports, municipal engineering, etc.. Graduated students can also choose postgraduates majoring in structural engineering, disaster prevention reduction and protection engineering, geotechnical engineering, bridge and tunnel engineering, road and airport engineering, civil engineering construction and management, or management science and engineering, engineering mechanics, solid mechanics, etc.

Core Courses

Calculus III(1)

Calculus III(2)

Calculus II(3)

Linear algebra

Probability Theory and Mathematical Statistics

College Physics IV(1) (International)

College Physics IV(2) (International)

College Physics Experiment IV(1) (International)

College Physics Experiment IV(2) (International)

Fundamentals of Computers

Fundamentals of Computers Experiment

Programming basic

Programming Experiment

Theoretical Mechanics

Mechanics of Materials
Engineering Mechanics Test
Mechanical Mapping
Surveying
Construction Materials
Structural Mechanics
Elementary Reinforced Concrete Design
Soil Mechanics & Foundation Engineering
Design of Reinforced Concrete Structures and Masonry Structures
Steel Structure
SAP2000 Structural Engineering Case
Theory of Vibration
Outline of Civil Engineering
A Metalworking
Surveying Practice
Design of Floor Slab of Reinforced Concrete
Geotechnical Laboratory Measurements

Mechanical Design & Manufacturing and Their Automation (English)

School : School of Mechanical Engineering

Medium : English

The introduction of Major

Mechanical Engineering is a discipline of engineering that applies the principles of physics and materials science for analysis, design, manufacturing, and maintenance of mechanical systems. It is based theoretically in nature science and technology science, combining the technology experience of production practice, and focused on the research and development of complex aerospace products. The knowledge of mechanical engineering can be used in automobile, aircraft, architecture, industrial instrument, engine and other levels.

The discipline involves in offering support to analyze, design and produce mechanical system by using the laws of physics. It requires students to deeply understand applied mechanics, thermology and other basic scientific principles, using which to analyze static and dynamic material system, create and design practical device, equipment, instrument, tools, etc,. Besides, students are required to combine automatic technology and information technology with mechanical equipment and system in order to form a series of advanced manufacturing technology, promoting the traditional machining operation and Manufacturing management system optimization in a qualitative leap forward.

Core Courses

Calculus

Linear algebra

Programming in C

College Physics

Mechanical Drawing

Electrical Technology & Electronic Engineering

Fundamental of Engineering Materials

Fundamental of Mechanical Manufacturing

Measurement and Sensors

Fundamental of Mechanical Design Introduction of Thermal Analysis Introduction to

Mechtronics

Mechanical Assembly Technology

The metal plastic forming principle

Mechanical manufacturing technology

Product Design

Instruction to industry engineering

Optimization theory and applications

Introduction to MEMS

Chinese language

Brief introduction to China

Materials Science and Engineering (English/Chinese)

School : School of Materials Science and Engineering

Medium : English/Chinese

The introduction of Major

The major of Material Science and Engineering focuses on metal materials, inorganic non-metallic materials, nano materials. After entering the school, regardless of the professional direction, students should cultivate and study general education courses and comprehensive literacy courses, and then choose to study in the professional direction according to their personal interests, professional will and academic achievements. After meeting the credit requirements, students will obtain a Bachelor of Engineering Degree.

Core Courses

Material Thermodynamics

Fundamentals of Materials Science

Mechanical Properties of Materials

Physical properties of Materials

Modern Analysis and Test Methods

Naval Architecture and Marine Engineering (English)

School : School of Marine Science and Technology

Medium : English

The introduction of Major

With the mission of serving the national strategy of becoming a maritime power, the program is committed to cultivating academic, innovative and applied talents in the fields of ocean vehicle, underwater robot and ocean engineering for national ocean security and intelligent ocean.

Through four years training, students to master advanced mathematics, mechanics, mechanical, automation, electronic information, computer, craft design theory and the basis of multiple disciplines such as professional knowledge, with solid mathematical foundation, broad international vision, independent scientific research ability, a strong sense of teamwork and outstanding innovation consciousness,

To become the outstanding leading talents in the field of national shipbuilding and ocean engineering.

Core Courses

Navigation of underwater vehicles
Sound and Structural Vibration
Introduction to Intelligent Unmanned System
Introduction to Robotics
Fluid Mechanics
CAD&CAM Polytechnic of Underwater Vehicle
Underwater Acoustic Sensor Networks
Digital Signal Processing
Principles of underwater sound
Underwater Wireless Communication

Astronautical Engineering (English/Chinese)

School : School of Astronautics

Medium : English/Chinese

The introduction of Major

Astronautical Engineering (English) relies on the first-level discipline of "Aeronautical and Astronautical Science and Technology", focusing on aircraft design, taking into account aircraft information and control, aerospace propulsion, and aerospace mechanics.

Core Courses

Automatic Control Principles

Structural Dynamics of Flight Vehicles

Flight Vehicle Control Theory

Flight Vehicle System Engineering

Aerospace Engineering (English)

School : School of Aeronautics

Medium : English

The introduction of Major

The major Aerospace Engineering underlines an interaction of relevant aircraft knowledge and systematic engineering, and intensifies a consciousness of systematic engineering integration, with solid mathematical knowledge as the basis and broad academic knowledge of systematic engineering and aircraft design as the mainbody. The School of Aeronautics has been developing the major and organizing teachings with the two main lines of modern aeronautic science and engineering system, aiming to train leading talents of comprehensive aircraft knowledge.

Core Courses

Theoretic Mechanics
Electrical and Electronic Technology
Mechanical Mapping
Experiment for Electrical and Electronic Technology
Introduction to Aeronautics and Astronautics
Strength of Materials
Automatic Control Principles
Fundamentals of Aerodynamics
The Fundamental of Machine Design
Flight Dynamics (I)
Flight Dynamics (II)
Aerodynamics
Flight Vehicle Structure Mechanics
Aircraft Conceptual Design
Structural Analysis by Finite Element Method
Flight Vehicle Framework Design
Hydrodynamics Experiment
Aircraft System Design