MECHANICAL DESIGN MANUFACTURE AND AUTOMATION MAJOR

The major of mechanical design manufacture and automation mainly studies a series of academic and engineering problems such as mechanical design, mechanical manufacturing and control methods, and trains students to have the ability to discover and solve engineering problems, have innovative and entrepreneurial spirit and good comprehensive qualities, and adapt to social development Demand, be able to engage in mechanical engineering and related fields in the design and manufacturing of electromechanical equipment, scientific research and technology development, production organization and management, etc.

The major has four directions: mechanical design, mechanical manufacturing, mechatronics engineering, fluid transmission and control. Specializing in the design and manufacture of CNC machine tools for complex curved surface processing (such as screw and spiral bevel gears), friction and wear mechanism analysis and anti-wear technology (such as large shield machines, key components of slurry mixing equipment), equipment intelligent control and detection (such as screw processing CNC machine tools, submersible screw pump oil extraction equipment), noise and vibration control (such as petrochemical, military, construction, general machinery, household appliances, noise control), mechanical dynamics analysis and equipment fault diagnosis (such as wind power, CNC equipment, new energy Automobiles, engines, compressors, etc.), manufacturing production lines and robot design (such as automobile engine crankshaft processing production lines, loading and unloading robots), high-precision CNC machine tool key unit components (such as direct drive A/C axis double swing angle CNC universal milling head, Electric spindle), intelligent manufacturing and additive manufacturing (such as laser additive manufacturing) have formed distinctive research directions. The corresponding industries are equipment manufacturing, aerospace, petrochemicals, automobile manufacturing, renewable energy, etc.

The equipment manufacturing industry is a pillar industry of Chinas's national economy. With the development of China’s economy and society and the implementation of the “Made in China 2025” strategy, the fourth industrial revolution led by intelligent manufacturing and based on technologies such as the Internet of Things will integrate new production and business models to promote manufacturing Enterprises have accelerated their entry into the industry 4.0 era, providing a large number of employment opportunities for students majoring in "mechanical design, manufacturing and automation".

VEHICLE ENGINEERING:

The vehicle engineering major studies the relevant theories, design and manufacturing technologies of land mobile machinery such as automobiles, tractors and construction vehicles. The vehicle engineering major is broadened and developed on the basis of mechanical disciplines, involving disciplines such as mechanics, electronics, power, control, materials, energy, and so on. It has the characteristics of strong cross-discipline. The vehicle engineering major is a wide-caliber comprehensive major, focusing on automobiles and related industries. Graduates can enter vehicle-related industries such as automotive parts and vehicle design and manufacturing enterprises, construction machinery manufacturing and other vehicle-related industries, and engage in vehicle design, Technical work such as manufacturing, testing and inspection; can be engaged in related planning and management work in state agencies and transportation management departments; can be engaged in vehicle sales and insurance business in sales and insurance departments; can be engaged in teaching and scientific research in schools and research institutes jobs.

The vehicle engineering major has the right to confer bachelor's, master's, and doctoral degrees and post-doctoral research mobile stations. The vehicle engineering major relies on the superior resources of the first-level discipline of mechanical engineering in the School of Mechanical Engineering, and shares the professional basic course teaching platform with the mechanical design, manufacturing and automation majors, laying a strong foundation for the training of talents for this major. The automobile industry is a pillar industry of the country, and there is a huge demand for talents. Students of this major have bright career development prospects.

INDUSTRIAL DESIGN:

The industrial design major of the School of Mechanical Engineering is a major based on the intersection of art design and engineering. Research on all industrial products (including mechanical and electrical products, transportation, 3c products, household appliances, daily necessities, etc.) to carry out the modeling design or the whole process of the development, design and promotion of new products. It is basically a creative activity for the industry. Products provide new value and competitive advantages, involving design psychology, sociology, design methodology, aesthetics, ergonomics, mechanical structure, color science and other content.

Industrial design has long become one of the core driving forces of manufacturing competition in developed countries. "Made in China 2025" clarifies nine strategic tasks and priorities. The first is to "improve the country's manufacturing innovation capabilities"; academicians of the Chinese Academy of Engineering and a number of experts and scholars offer suggestions: Made in China 2025 must attach great importance to industrial design; CSIP of the Ministry of Industry and Information Technology: " "Industrial redesign" should become the core power of "Made in China 2025". Industrial design is the key to determining product market competitiveness and realizing the transition from "Made in China" to "Created in China". Therefore, the demand for industrial design talents is strong and the starting point is high. The industrial design major gradually integrates the product design concept with the international market, in line with the purpose of serving the equipment manufacturing industry, and cultivates the ability to engage in design and management in the fields of industrial product development and modeling design, visual communication design, display design, etc. to give full play to the industry Innovative and applied senior professionals with designer professional expertise. Students studying in this major will have a broad job market.

INDUSTRIAL ENGINEERING:

Industrial engineering is an engineering technology with the goal of system efficiency and benefit, which integrates planning, design, improvement, control, evaluation and innovation of production and service systems involving people, materials, equipment, information, energy and other elements. It applies the theories and methods of natural science, mathematics, social sciences, especially engineering technology, and pursues the improvement and optimization of system efficiency, cost, quality, environmental protection and other indicators, and can be applied to various industries such as industry, agriculture, and service industry. System to improve its operating efficiency and benefits. Industrial engineering graduates can not only work in the planning and design, operation control, analysis and evaluation, improvement and innovation of operating systems in various manufacturing and service industries, but also in the organization and coordination of various levels of government and service departments. Technology-based system management work or corresponding research work in scientific research institutions. Through a period of work practice, he can serve as the backbone of production management, quality management, logistics system design and management, warehousing management, human resource management and other departments.

ROBOT ENGINEERING:

The robotics engineering major mainly studies the related theories and methods of intelligent manufacturing and robotics on the basis of mechanical engineering disciplines, involving disciplines such as machinery, control, information, intelligence, and materials. Robotics technology is the deep integration of mechatronics technology and intelligent technology, and is one of the core technologies of intelligent manufacturing. The comprehensiveness of disciplines is an important feature of this major. Professional service targets are oriented to a variety of industries in the manufacturing industry. Graduates can enter the transportation equipment manufacturing industry, general equipment manufacturing industry, electrical machinery and equipment manufacturing industry, petrochemical manufacturing industry related enterprises, and engage in technical work such as design, manufacturing and service; Can be engaged in related planning and management work in the industry management department; can be engaged in teaching and scientific research in schools and institutes.

The robotics engineering major relies on the superior resources of the first-level discipline of mechanical engineering in the School of Mechanical Engineering, shares the professional basic course teaching platform with the mechanical design, manufacturing and automation majors, supplemented by the superior resources of the electrical engineering disciplines and information engineering disciplines, laying a foundation for the training of talents in this major Solid foundation. Manufacturing is the cornerstone of the country's comprehensive strength and international competitiveness. There is a huge demand for talents, and students of this major have bright career development prospects.