



# Mechanical Engineering

## Profile

The Mechanical Engineering (International) program at Wenzhou University is recognized as provincial international characteristic specialty. It is in line with the trend that Chinese medium and large-scale enterprises start to expand overseas, as well as satisfying great needs for international engineering talents. This program is dedicated to train mechanical engineers equipped with world-class professional skill sets, cross-cultural understanding and global communication skills.

## Education Objectives

Graduates will be able to take up international career pathways in engineering related fields and professions; apply engineering principles to develop products and design processes; demonstrate proven ability to contribute to a professional team; use lifelong learning skills to adapt to changing trends and challenges.

## Job Prospects

Our graduates are employed extensively in large- and medium-sized manufacturing companies and research institutes. They are involved in mechanical design and manufacturing, technical innovation, applied research, project management, sales and marketing, etc.

## Practical Teaching

We focus on combination of theory teaching and practical teaching. CDIO concepts are implemented throughout the curriculum. Precisely designed projects help our students to develop real-world problem-solving and communication skills, as well as teamwork spirit. Our great cooperative relationship with enterprises allows students to visit and practice in many enterprises.

## Duration

4 years.

## Core Courses

The curriculum of Mechanical Engineering program follows international standard requirements of the Washington Accord (<http://www.washingtonaccord.org/>). Core modules include Engineering Graphics, Electrics and Electronics, Fundamentals of Mechanical Design, Precisions and Testing Technologies, Fundamentals of Product Design and Manufacturing, Microprocessor Applications, Computer-aided Design and Manufacturing, etc.

Chinese undergraduate and graduate students majored in Mechanical Engineering will act as mentors to help international students get settled down in Wenzhou and improve their proficiency in Chinese language.

### Theory of Method of Mechanical System Modeling

System modeling and simulation is a major course of manufacturing informatization technology. It mainly help student's to master the basic methods of using computer simulation mechanical system strength and motion feature. Therefore, students can apply simulation technology skillfully. It builds foundation for working on analysis, design and optimization of mechanical system in the future. The course mainly explains finite difference method and finite element method, and requires students to master the basic theories, basic knowledge of numerical calculation, and the application of associated software as well as obtain the basic ability of system modeling and analyzing.

### Modern Control Theory

This is a basic course in automation major. This course and another course named "Automatic control principle" form the core theoretical basis of automation major. Moreover, modern control theory is the required knowledge for people who work on automation.

This course helps students to understand and strengthen the concept of state space in linear system. Besides, students will understand the system stability, which is the key concept for this subject. Also, students will be able to master the key methods such as controllability and observability, status feedback and state estimation and so on.

### Light-Matter Interaction

This course is delivered by theory teaching and accompanied by complemented experiment demonstration. Through this course, students are supposed to understand the physical characteristic of laser, basic knowledge of interaction of laser and materials, and modern laser manufacturing methods. Moreover, students learn the history, researches, prospect and development of the use of laser in modern material manufacturing.

### Dynamics of Mechanical System

This subject is using the basic theories of applied mechanics to solve mechanical system dynamics problems. The core of this course is to find solution through establishing relations among operational status and interior parameters and external conditions. The main target of this course is to let students understand different types of mechanical system dynamics, and master the methods to use the basic knowledge of applied mechanics to solve problems. All these build a solid foundation for relevant study and scientific research in the future.

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