



### About Us

The Department of Mechanical Engineering was founded in 1963. The rapid development of technology leads industry and academia to the era of professional services and teamwork. Hence, engineers with specialty knowledge and teamwork concepts are highly demanded in job markets. In accordance with the demand, Tatung ME offers the B.S. degree in two sub divisions, Electro-Mechanical Division (EMD) and Precision Mechanical Division (PMD), for students to learn more specialized skills and knowledge. The EMD focuses on developing student abilities in applying mechanical engineering technology to the field of electronic industry, such as mechatronic control system, electronic firmware, digital system, robot vision, electronic cooling, etc. The PMD focuses on cultivating the system integration and design abilities of our students, educating them to develop and design processing facilities of the precision industry, and enhancing their abilities for engineering analysis and mechanical design. The energy issue and semiconductor engineering describe the career of PMD students in a more practical way.

The graduate program offers degree leading to either M.S. or Ph.D., providing students to pursue advanced coursework, in-depth training and research. Tatung ME ranked 14th (including all public and private universities in Taiwan) based on the "Best Graduate School of Taiwan" surveyed by Cheers Magazine in 2008.

### Primary Research Areas

<b>Energy and Thermo-Fluid Systems</b>
Bioheat Transfer, Micro-fluidic, Nano-fluidic, Flow in Porous Media, Hydrogen Technology, Fuel Cell, Electronic Cooling
<b>Control Systems</b>
Intelligent Control, Intelligent Mechatronics, Computer Vision, Automation System Design, Robotics, Wireless Sensor Network, RFID/SAW, Nature-Inspired Systems, Bio-Inspired Computation
<b>Design and Manufacturing</b>
Micro-Electro-Mechanical Systems, Ultrasonic Device, Package Mechanics, Fatigue/Fracture Mechanics, Vibration/Acoustics, Metal Cutting, Reverse Engineering, High Power LED, Sensor, Thin Film, Engineering Optimization, CAD/CAE

### Core Courses

<b>Undergraduate</b>
Calculus, General Physics, General Physics Laboratory, Programming Language, Machine Shop Practice, Engineering Mathematics, Manufacturing Processes, Engineering Drawing, Computer-aided Drafting, Engineering Mechanics-statics, Engineering Mechanics-dynamics, Mechanics Of Materials, Engineering Materials, Machine Design, Thermodynamics, Fluid Mechanics, Heat Transfer, Kinematics And Dynamics, Electric Circuits, Electronics, System Dynamics, Automatic Control, Mechanical Engineering Experiment, Independent Study On Mechanical Engineering
<b>Electro-Mechanical Division</b>
Introduction to Mechatronics, Integrated Mechatronic Design, Principles And Applications of Sensors, Introduction to Microprocessor, Introduction to Machine Vision, Digital System, Electronic Cooling
<b>Precision Mechanical Division</b>
Computer-aided Design And Manufacture, Finite Element Analysis, Molds & Dies Design, Introduction to Semiconductor Engineering, Mechanical Vibrations, Introduction to Energy System
<b>Graduate</b>
Energy Technology, Computational Fluid Mechanics, Design Of Heat Exchangers, Advanced Fluid Mechanics, Fuel Cell - Theory And Practices, Micro-fluidics Chip, Thin-film Solar Cell Processing Equipment Integration, MEMS Design, Optimum Design Analysis, Fracture Mechanics And Fatigue Analysis, Finite Element Methods, Ultrasonic Engineering, CAD/CAM Integrated System, Advanced Electro-mechanics, Advanced Control System, Applications of Computer Vision, Noise And Vibration Control Engineering, Nature-inspired Systems, Robotics, Bio-Inspired Computation,

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