

# Automotive Engineering

Bachelor of Engineering



## Program Outline

Today, many new technologies such as hybrid electric vehicle systems, active drivers assist systems, advanced battery systems, and connected vehicle systems are being integrated into automobiles. For this reason, students in this program are required to study not only mechanical or electrical and electronic engineering, but also other relevant fields such as material, chemical, and traffic engineering. In particular, students study the following topics: Vehicle Engines, Vehicle Design, Vehicle Dynamics and Control, Car Electronics, Metallic, Ceramic and Organic Materials for Automobiles, Aerospace Engineering, Intelligent Transportation Systems, Environmental Issues and Recycling.



## Career Prospects

Many students continue their studies either at Nagoya University or at well-known universities worldwide with the aim to become engineers, researchers or university professors. Students entering companies in the automotive industry are expected to work on the research and development of safe, high-performance/efficiency, and affordable automobiles that contribute to a sustainable society. Since automobiles are integrated systems of various high technologies, a broad range of knowledge is necessary to develop such systems. Some students, therefore, also join laboratories other than those in mechanical or electrical engineering and contribute to companies in many other fields.

## Mechanical Engineering

Students first study a broad range of fundamental engineering topics, core mechanical engineering topics, and fundamental subjects of automotive engineering. They then study advanced automotive engineering concepts related to the primary parts of automotive systems, such as their structures, their mechanisms and their motions. Students study thermodynamics and fluid mechanics to develop engines, mechanisms and mechanics of materials to design car structures and dynamics and control of safe and comfortable driving to improve drivability.

## Electrical, Electronic and Information Engineering

Students first study a broad range of fundamental engineering topics, core electrical, electronic/information engineering topics, and fundamental subjects of automotive engineering. They then study advanced automotive engineering concepts related to the car's electrical systems, such as motor control, sensors, and telematics/infotainments. Students study electromagnetism, electric and electronic circuits, power electronics, software engineering, signal processing, and functional material science.



Notes:

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