

# Course Introduction

## ■ Graduate Program

The goal of MO is to nurture global specialists in mobility system, to research and develop innovative vehicle technologies and innovative transportation operation systems with IT-convergence. In addition, the curriculum is divided into three areas: unmanned autonomous system, electric propulsion system, and intelligent transportation system.

### ○ Unmanned Autonomous System

- This track provides integrated knowledge required for pioneering research in future transportation system, that is based on artificial intelligence, to the students through complete theoretical studies, system analysis, and experiments related to design and implementation.
- Study topics in this track include self-driving systems based on autonomous navigation, environment recognition, and artificial intelligence, sensor technologies, and vehicular dynamics and control.

### ○ Electric Propulsion System

- This track provides the required diverse knowledge for research and development within the field of novel powertrains by applying theories and experiments about electrified and eco-friendly transportation systems like electric vehicle and hybrid electric vehicle.
- Lectures and practical courses are offered to acquire basic knowledge and theory on the vehicular systems and components including 'Modeling and control of electric propulsion systems,' 'Battery system modeling and control,' and 'Wireless power transfer system.' In particular, comprehensive engineering skills for modeling, control, and design of electric propulsion system (motor, inverter, battery, wireless power transfer, etc.) are honed by developing full-scale (or reduced-scale) electric vehicle.

### ○ Intelligent Transportation System

- This track introduces theories and skills for accurate recognition, diagnosis, and evaluation of transportation system by applying novel ICT technology. Based on them, the operation of transportation system is optimized and the traffic safety, convenience, and efficiency are enhanced.
- The coursework contents include sensor technology recognizing the traffic conditions, communication technology transferring the traffic information, data processing technology, and traffic operation technology.