

Introduction to automated driving

Syllabus Number

1L308

Special Subjects

Elective 2 credit

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1. Course Description

Students will mainly learn the principles of each technology that realizes cognition, judgment, and operation that constitute automated driving. Students will also learn about issues such as safety, social acceptability, and legislation that need to be solved to make automated driving practical. In addition, students will learn about the impact of automated driving and the development of automated driving technologies on citizen life and social structure.

In this course, the aim is to approach the essence of automated driving through group work as well as learning through lectures.

In this course, students acquire knowledge, skills, and attitudes about DP1 to DP5.

2. Course Objectives

Students will gain relevant knowledge so that they can properly understand the issues and social significance of automated driving and talk about the essence of automated driving.

Classes are mainly in the form of lectures, but in addition to deepening understanding through group work according to the content, students will acquire presentation skills through presentations.

3. Grading Policy

Grading is determined with the results of exercises, presentations, and reports given during class (100%).

4. Textbook and Reference

Textbook

None

5. Requirements(Assignments)

Check the scope of the next lesson on the syllabus, and if the material is posted on the LMS, read it to deepen your understanding and sort out any questions (1.5 hours). In addition, after class, review the contents by solving the given tasks and deepen your understanding (1 hour).

6. Note

7. Schedule

- [1] Background and history of automated driving
- [2] Technologies (Sensing)
- [3] Technologies (Image processing)
- [4] Technologies (Localization, Dynamic map)
- [5] Technologies (Actuators)
- [6] Technologies (Vehicle control)
- [7] Type of automated driving (Autonomous driving, Responsibility of driving)
- [8] Type of automatic driving (Cooperative driving, Platooning, Remote control type, Communication technology)
- [9] Connected car and MaaS
- [10] Forefront of Development
- [11] System design (Law, Insurance)
- [12] Accidents and safety
- [13] Accidents and safety of Public road experiment (Group discussion and presentation)
- [14] New Business and Social Transformation
- [15] New Business and Social Transformation (Group discussion and presentation)