

# Automobile Engineering Development 2

for Syllabus Number

1L302

Basic Major Subjects

Elective Requisites 2  
credit

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## 1. Course Description

The Government of Japan and the automobile-related industry are strategically implementing activities to reduce automobile accidents. In this course, students will learn about such accident reduction activities and the functions and performance of the latest automobile safety technologies. In addition, students will learn how human characteristics such as driver characteristics that cause automobile accidents and human characteristics (biomechanics) that affect the magnitude of damage after an accident are related to various automobile safety technologies.

Students will acquire the knowledge, skill and behavior for DP2 to DP5.

## 2. Course Objectives

The goal of this lesson is to enable students to talk about design concepts that build on an understanding of the capabilities, performance, and human characteristics of automotive safety technologies.

## 3. Grading Policy

Evaluate based on reports and exercise results (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] Accident situation and preventive safety technologies
- [2] Causes of rear-end collisions
- [3] Rear end collisions, and autonomous emergency brake system (AEB)
- [4] Encounter accidents at intersection, and autonomous emergency brake system (AEB)
- [5] Encounter accidents at intersections, and communication technologies
- [6] Accidents on the low  $\mu$  road, and Anti-skid Brake System (ABS)
- [7] Accidents on the low  $\mu$  road, and Electronic Stability Program (ESP)
- [8] Groupe work and presentation for preventive safety technologies
- [9] Accident situation and passive safety technologies
- [10] Biomechanics
- [11] Automobile Restraint Systems
- [12] Resistance of human body to vehicle deceleration
- [13] Neck Injuries and Protective Devices
- [14] Groupe work and presentation for passive safety technologies
- [15] Summary