

Automotive Engineering

Syllabus Number

1L101

Special Subjects

Elective 2 credit

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1. Course Description

Students learn the structure of vehicles and the structure and function of vehicle parts (engines, transmissions, tires, etc.). Students will also deepen their understanding of basic performance of vehicles such as driving stability, acceleration performance, braking performance, and riding comfort performance, mainly from a mechanical engineering point of view (Related to DP2, 3 and 4).

2. Course Objectives

Students will be able to understand and explain the overall structure of the vehicle and the function of the components.

In addition, students will be able to explain the vehicle basic performance of "driving, turning and stopping" based on basic knowledge of mechanical engineering.

3. Grading Policy

Students submit a report on the assignments set in each lesson. Grades will be evaluated based on the results of the submitted report (100%).

4. Textbook and Reference

Textbook

ISBN:9784501419103

5. Requirements(Assignments)

Check the scope of the next lecture in the syllabus, and read the materials posted on LMS (1hr). In addition, after the class, read your notebook describing the contents of the lectures, and the materials posted on the LMS to deepen your understanding of the class learned and submit reports and assignments (1hr).

6. Note

7. Schedule

- [1] Introduction, and History of automobiles
- [2] Engine
- [3] Driving performance of automobiles (driving performance diagram and power performance)
- [4] Driving performance of automobiles (performance to drive uphill, acceleration performance, coasting performance)
- [5] Exercise (1): Calculation of running speed and driving force
- [6] Exercise (2): Selection of gear ratio
- [7] Suspension
- [8] Wheel alignment
- [9] Steering
- [10] Brake
- [11] Tire
- [12] Vehicle dynamics (Groupe work & Presentation)
- [13] Vibration / noise / ride comfort
- [14] Human-automobile system
- [15] Future of automobile (Hybrid car, Fuel cell car, Electric car, Hydrogen engine car)