Special Lecture in Automobile Engineering

Syllabus Number 1L306

Special Subjects
Elective 2 credit

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1. Course Description

This class is a special lecture and the invitation of lecturers development engineers at the front line of the Honda R&D Co., Ltd., Honda R&D Co., Ltd. is a development department of Honda motor Co., Ltd. Based on the problems surrounding automobiles, lectures are given in the field of automobiles, such as the engine and the automatic transmission mechanism as the driving part, steering stability by chassis technology, aerodynamic characteristics, management of generated heat, design of automobiles, etc. in various fields .
Although this lesson is mainly lecture type, we carry out tasks and exercises in pairs and a discussion is held.
In this lesson, you will acquire knowledge, techniques and attitudes on the degree awards policies DP1 to DP6.

2. Course Objectives

Students who are aiming at automobiles (one of the comprehensive products in the mechanical engineering field) with the aim of deepening their practical applications and understanding of engineering, and by developing individual technologies that make up the automobile that plays an important role in social life Engineering understanding and explanation.

3. Grading Policy

We will evaluate the results of the final test (80%) and assignment (20%).
In addition, we will explain the answer after the test and the assignment. An example of the answer is shown on LMS.

4. Textbook and Reference

Textbook
We use original teaching materials created by instructors in each field as texts.
Reference
Automotive Technology Handbook Society of Automotive Engineers of Japan ISBN 978-4-904056-59-2

5. Requirements(Assignments)

Please read the lesson content posted on LMS. Please read through the applicable range in the reference book and understand the contents. Please learn again the contents of the lecture of automobile engineering, the introduction of automobile, and automobile structure theory 1 to 3 if you have learned already, and prepare yourself before attending class. Also, since I will give some kind of homework such as assignment as appropriate, please finish it by next class. Approximately 1 hour for preparation, 2 hours for assignment and review.

6. Note

In addition to using LMS as an independent learning support, we also carry out a test and questionnaire function of Mobile-MARS as an interactive class as appropriate.

7. Schedule

[1] Understand the issues surrounding automobiles, such as energy supply, resource depletion, environmental pollution, transportation systems.
Preliminary study: Please refer to the materials uploaded to LMS in advance and understand the outline of the content of the lecture
Review: to understand the content of the lecture range again based on the LMS teaching materials, or to solve if the assignment is given as homework

[2] Understand the technology of an internal combustion engine of a four-wheeled vehicle.
Preliminary study: Please refer to the materials uploaded to LMS in advance and understand the outline of the content of the lecture
Review: to understand the content of the lecture range again based on the LMS teaching materials, or to solve if the assignment is given as homework

[3] Understand the problems of motorcycles and general-purpose engines and technologies for improving the thermal efficiency of internal combustion engines.
Preliminary study: Please refer to the materials uploaded to LMS in advance and understand the outline of the content of the lecture
Review: to understand the content of the lecture range again based on the LMS teaching materials, or to solve if the assignment is given as homework

[4] Understand the basic technology of the transmission and its application to the hybrid.
Preliminary study: Please refer to the materials uploaded to LMS in advance and understand the outline of the content of the lecture
Review: to understand the content of the lecture range again based on the LMS teaching materials, or to solve if the assignment is given as homework

[5] Understand hybrids and electric vehicles and think about the future traffic to aim
Preliminary study: Please refer to the materials uploaded to LMS in advance and understand the outline of the content of the lecture
Review: to understand the content of the lecture range again based on the LMS teaching materials, or to solve if the assignment is given as homework

[6] Learn about model-based development (MBD) and automobile development using computer-aided engineering.
Preliminary study: Please refer to the materials uploaded to LMS in advance and understand the outline of the content of the lecture
Review: to understand the content of the lecture range again based on the LMS teaching materials, or to solve if the assignment is given as homework

[7] Learn aerodynamic characteristics and thermal control in automobile development
Preliminary study: Please refer to the materials uploaded to LMS in advance and understand the outline of the content of the lecture
Review: to understand the content of the lecture range again based on the LMS teaching materials, or to solve if the assignment is given as homework

[8] Chassis technology for freely maneuvering cars Understand the fundamental theory of steering stability and learn design and control technology for freeing exercise
Preliminary study: Please refer to the materials uploaded to LMS in advance and understand the outline of the content of the lecture
Review: to understand the content of the lecture range again based on the LMS teaching materials, or to solve if the assignment is given as homework

[9] Understand collision safety technology and extract the problem
Preliminary study: Please refer to the materials uploaded to LMS in advance and understand the outline of the content of the lecture
Review: to understand the content of the lecture range again based on the LMS teaching materials, or to solve if the assignment is given as homework

[10] Understand its possibilities and technologies from current ITS for automatic driving
Preliminary study: Please refer to the materials uploaded to LMS in advance and understand the outline of the content of the lecture
Review: to understand the content of the lecture range again based on the LMS teaching materials, or to solve if the assignment is given as homework

[11] Understand the manufacturing method and issues of the platform summarized as the foundation of the car
Preliminary study: Please refer to the materials uploaded to LMS in advance and understand the outline of the content of the lecture
Review: to understand the content of the lecture range again based on the LMS teaching materials, or to solve if the assignment is given as homework

[12] Understand material technologies that support automobiles, such as lightening
Preliminary study: Please refer to the materials uploaded to LMS in advance and understand the outline of the content of the lecture
Review: to understand the content of the lecture range again based on the LMS teaching materials, or to solve if the assignment is given as homework

[13] Learn about the evolution that cars and nets, automobiles connect with each other on the net, and understand the problem
Preliminary study: Please refer to the materials uploaded to LMS in advance and understand the outline of the content of the lecture
Review: to understand the content of the lecture range again based on the LMS teaching materials, or to solve if the assignment is given as homework

[14] Through car design, understand Honda's making things
Preliminary study: Please refer to the materials uploaded to LMS in advance and understand the outline of the content of the lecture
Review: to understand the content of the lecture range again based on the LMS teaching materials, or to solve if the assignment is given as homework

[15] Understand energy regeneration technology for improving thermal efficiency installed in the car race
Preliminary study: Please refer to the materials uploaded to LMS in advance and understand the outline of the content of the lecture
Review: to understand the content of the lecture range again based on the LMS teaching materials, or to solve if the assignment is given as homework