Practical training on automobile structure

Syllabus Number 1L209
Special Subjects
Elective 2 credit

FUKUDA Naoki

1. Course Description

The following contents will be learned.
(1) Functions and structures of electronically controlled engines.
(2) Function and structure of the suspension.
(3) Function and structure of the steering device.
(4) Wheel alignment.
(5) Function, structure, and braking force of the braking device.
(6) Function and structure of automatic transmission, driving performance curve diagram.
In this lesson, knowledge, techniques, and attitudes regarding DP2, DP3, DP4 and DP5 will be acquired.
Lessons are primarily practice style.

2. Course Objectives

Students can apply it to concrete cases regarding the design and manufacturing process of automobiles after understanding the basics of automobile functions, principles and structures.

3. Grading Policy

The grade evaluation is based on 50% of the reports and 50% of the exam results, but it will be evaluated by deducting the attitude in the lessons. The lessons attitude is to be able to observe the "safety instructions in the first lessons, and the instructions on clothes and other matters in the practical training". The report will be submitted in the specified date. The exam will be held in the 15th lessons and will be explained after the exam.

4. Textbook and Reference

Textbook
Textbook editorial committee of the Japan Automobile Service Promotion Association(Supervised by the Ministry of Land, Infrastructure, Transport and Tourism Road Transport Bureau) Second grade gasoline car engine version Japan Automobile Service Promotion Association (JASPA)
Textbook editorial committee of the Japan Automobile Service Promotion Association(Supervised by the Ministry of Land, Infrastructure, Transport and Tourism Road Transport Bureau) Third grade gasoline engine
Japan Automobile Service Promotion Association (JASPA)
Textbook editorial committee of the Japan Automobile Service Promotion Association(Supervised by the Ministry of Land, Infrastructure, Transport and Tourism Road Transport Bureau) Second grade gasoline car second grade diesel car chassis Japan Automobile Service Promotion Association (JASPA)
Textbook editorial committee of the Japan Automobile Service Promotion Association(Supervised by the Ministry of Land, Infrastructure, Transport and Tourism Road Transport Bureau) Third grade automobile chassis Japan Automobile Service Promotion Association (JASPA)

5. Requirements(Assignments)

(1) As preparations for next lesson, please check the meaning of the proper noun and the contents of the relationship shown in the contents of the lesson, and come to the class. (90 minutes)
(2) As a review, please prepare a report on the items instructed during the lesson, so that you can explain them in the next lesson. (90 minutes)

6. Note

In this practical lesson, students will be dressed in practical training in accordance with the "Instructions on Safety, Clothing in Training".
Therefore, students enrolling in the course must prepare their own clothes and other items.

7. Schedule

[1]	◎ Safety tips, instructions on clothing for practical training, and procedures for purchasing textbooks. ◎ Structure of engine, lubrication device, cooling device, fuel device, intake / exhaust device, electric device, electronic control device.
[2]	Suspension (strut type) overview.
[3]	Suspension (strut type) function and structure.
[4]	Suspension (strut type) assembly and adjustment.
[5]	Steering device configuration, structure and operation.
[6]	Suspension (torsion beam type) overview.
[7]	Suspension (torsion beam type) structure, operation, assembly and adjustment.
[8]	Main element of wheel alignment (front), adjustment.
[9]	Main element of wheel alignment (rear), adjustment.
[10]	Disassembly of the brake device (disc brake).
[11]	Assembling and adjusting the braking device (disc brake).
[12]	Disassembly, inspection, assembly and adjustment of the braking device (drum brake).
[13]	Braking force measurement with a brake tester.
[14]	Structure, operation, and driving performance curve diagram of an automatic transmission.

[15] Exam and summary.