

# Project Exercises in Student Formula 1

Syllabus Number

1L210

Special Subjects

Elective 2 credit

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## 1. Course Description

In the Formula Project, students will consistently make planning, designing, producing and running a small formula car to acquire the necessary professional abilities and problem-solving abilities as a car engineer and at the same time participate in the All-Japan Student Formula Competition. Furthermore, we aim to acquire a sense of responsibility as an engineer by driving the vehicle we made ourselves.

In this section, in order to understand the outline and regulation of the Formula SAE Japan and to acquire the usual level of design technology, we decide the specifications required for each part of the vehicle and tackle the design to realize it. This makes it easy to plan and design formula car parts.

Although this lesson is primarily a form of exercise, we will conduct work in pairs and group work in the activities, present about the results and discuss them thoroughly.

In this lesson, we comprehensively acquire knowledge, techniques and attitudes on the degree awards policies DP1 to DP6.

## 2. Course Objectives

Students learn and acquire the following through the project activities. They are:

- (1) Simple design of formula car parts can be done using CAD.
- (2) CAE can calculate simple strength of formula car parts.
- (3) Processing technology (welding, cutting) and operation using CAD · CAE can be performed.

## 3. Grading Policy

Evaluation will be carried out by active evaluation of activity situation by the teacher in charge, evaluation of the following submission, and final result report meeting are:

- (1) Evaluation of deliverables concerning vehicle design and production (design drawings, manufacturing parts, etc.)
- (2) Activity report · Evaluation of activity results (progress situation on target, activity time, participation situation of workshops etc., achievement of extracurricular activities etc.)
- (3) Contribution to the team - We will provide feedback on each individual's activity progress at the weekly general meeting.

\* Submission: Activity Report (Monthly) Progress on the target plan, contents of activities / activity time, participation status in various external courses, extracurricular activities, etc.

## 4. Textbook and Reference

Textbook

Vehicle development and production guide - using student formula car as a theme

Japan Society of Automotive Engineers (2008) ISBN 978-4-904056-04-2

## 5. Requirements(Assignments)

As preparation,

- (1) To translate and understand F - SAE regulation.
- (2) Learn how to use processing technology (cutting, welding) and CAD · CAE

As a review,

- (1) To clarify the plan of the items to be carried out next based on the results of regular meetings of the project (see the minutes)
- (2) To concretely implement the above items

## 6. Note

In order to take this course, you need to meet the following criteria:

- (1) The previous project activity record for more than one year.
- (2) To be engaged in designing, manufacturing, etc. in the attitude to apply engineering techniques and methods such as 4 mechanics in the project activities.
- (3) To be able to set goals for improvement of engineering technology through this class.
- (4) Teachers in charge in the past to acknowledge that past achievement · the set goal of this class is worth course.

## 7. Schedule

Activity period: One year from April to March of the following year

Activity time: 150 hours or more

\* We will not give lectures in this class.

\* This year's "Formula SAE Japan- Monozukuri Design Competition -" will be held in ECOPA (Fukuroi City, Shizuoka Prefecture) from September 8th to 12nd.

\* We will conduct a meeting tournament meeting after this conference is over.