

Project Exercises in Aerospace Engineering

Syllabus Number

2F308

Special Subjects

Elective 3 credit

MANAKO Hiroyasu

1. Course Description

In the lecture, students can learn many things in the engineering field (ex. fluid mechanics, thermodynamics, strength of material, solid mechanics, electric and electronic engineering, communication engineering, control engineering, programming) and acquire design and manufacturing skill through making actual aerospace products. Also students will have the ability of project control and communication through project activity by joining forces as team (group work). This lecture is PBL (Problem-based Learning) that is learning by solving engineering issues.

Students will have the knowledge and techniques for the calculation related to DP1 ~ DP5.

In the lecture, there will be two projects as follows;

(1) Sky project (Ohmori)

Students can acquire design and manufacturing skill through the design and making actual human powered airplane.

(2) Space system project (Kawamura)

Students can acquire space vehicle design and manufacturing skill through the development of micro-satellite and small-sized rocket.

2. Course Objectives

It is the object that students acquire skill through learning the following;

(1) learning engineering theory and application through manufacturing aerospace products

(2) learning the way of team activity, communication and development control through the project activity

(3) learning the way of summarization of results and presentation through the final results meeting

3. Grading Policy

Teachers in charge will evaluate based on aggressiveness toward activity, submission below, and presentation at the final review board.

The evaluation criterion is how much investigation about engineering field indicated at section 1 has been done. Feedback on activities will be provided through the discussion at activity situation meetings and the final review board.

In addition, the final review board will be held by the individual, not the team.

*submission ;objective, plan, activity situation report (each month) and record of own actual time (diary, etc.) for the project.

4. Textbook and Reference

Textbook

No text book nor reference are used.

5. Requirements(Assignments)

Please research and learn about necessary technology for manufacturing by yourself about 6 hours a week.

6. Note

In order to take courses the student needs to meet the following criteria.

(1) There is a record of the project activity for more than one year and a half in the past.

(2) In its project activities, the student designs or makes aerospace products by applying engineering techniques and methods including engineering fields indicated at section 1.

(3) Through this lesson, the student must set objectives to be able to hope for engineering skill improvement.

(4) The teacher in charge must admit student's past achievements and objectives of this class are worth taking credits.

7. Schedule

[Target activity period]; Within one year from April to March of the following year.

[activity time]; Over 135 hours in total within the target activity period.

*No lecture will be held in this class.

*The final review board will be held.