

Exercises in CAD and Drawing

Syllabus Number

2F307

Basic Major Subjects

Elective Requisites 2
credit

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1. Course Description

Recently, many companies make drawings by CAD (Computer Aided Design), since CAD has several merits in comparison to old-fashioned hand-drawn drawing such as follows:

1. Fine drawing is possible without independent of individual skill
2. Easy correction and maintenance of stored drawings
3. Easy preservation and maintenance of drawings

In this course, basic handling techniques for three dimensional CAD system, CATIA V5, will be studied by practical handling on the computer.

Students will have the knowledge and techniques related to DP1.

2. Course Objectives

In this course, student will master the basic techniques of handling a three dimensional CAD system, CATIA V5, and will have a capability to image a three dimensional body from a plane drawing.

3. Grading Policy

Evaluation of grades will be done based on intermediate test (20%) and final test (80%). In the test, students will be required to create 3D shapes and drawings in time. The answer is explained individually after each test.

4. Textbook and Reference

Textbook

No text book is used.

5. Requirements(Assignments)

Preparation (about 1.5 hour); Please review "Introduction to Drawing" learned in the previous semester using a text book and be able to understand correspondence between hardware and drawings. Also please learn the operating method by using reference book prepared in the CAD room. Please summarize what you have prepared in a notebook and use it for the lesson.

Review (about 1.5 hour); Please review the operation learned in the lesson and try to get used to the operation by operating again on the CAD machine by yourself.

6. Note

The contents may be changed according to progress of the lesson and so on.

7. Schedule

- [1] Outline of CATIA, usage of mouse, setting of grid, drawing line, circle, ellipse, etc.
- [2] Sketcher (1) : circle through 3 points, ellipse, spline, etc.
- [3] Sketcher (2) : constraint, over-constraint, release of constraint, correction of constraint, etc.
- [4] Sketcher (3) : exercise
- [5] Part design (1) : creating pad, explanation of specification tree, insert of part body
- [6] Part design (2) : creating of multi-pad, shaft, pocket, hole and thread/tap
- [7] Part design (3) : creating edge fillet, chamfer, translation of figure, multi-section solids, add and remove of body
- [8] Part design (4) : exercise
- [9] Intermediate test
- [10] Explanation of intermediate test and redrawing of intermediate test figure
- [11] Assembly
- [12] Drafting (1) : drawing of front view, side view, section view and isometric view, creating of frame and title block
- [13] Drafting (2) : dimensioning
- [14] Drafting (3) : exercise
- [15] final test and summarization