

# Exercises in CAD and Drawing

Syllabus Number

1G301

Basic Major Subjects

Elective Requisites 2  
credit

ONO, Takenori

## 1. Course Description

The basic operations of 3D-CAD (Computer Aided Designing) with CATIA V5 and the imaging of a solid shape from the drawing are taught.

## 2. Course Objectives

The basic operations of 3D-CAD required for mechanical engineers are studied. And the example of problems in 3D-modeling based on the models in the real machinery industry are solved for the improvement of efficiency at the machine element design stage.

## 3. Grading Policy

Final grade will be calculated according to drawing assignments (100%). To pass, students must earn at least 60 points out of 100.

## 4. Textbook and Reference

Textbook

They will be introduced in the class.

## 5. Requirements(Assignments)

This course will be taught in Japanese.

## 6. Note

## 7. Schedule

- [1] Guidance, Purpose and ability of the 3D Computer Aided Designing
- [2] Basic operations (mouse operation, GUI interface, workbench, etc)
- [3] Fundamentals of the operation #1 : Sketch and basic 3D modeling
- [4] Fundamentals of the operation #2 : Fundamental features (mouse operations, choose the "Material", etc.), Basic exercise: V block
- [5] Sketch 1 : Basic exercises
- [6] Sketch 2 : Practical exercises
- [7] Part design 1: Protrusion, Remove, Axial rotation, Axial slotting, Holing, etc.
- [8] Part design 2: Chamfer, Fillet, Draft, Patterning, Mirroring, Shelling, etc.
- [9] Wireframe modeling
- [10] Surface modeling
- [11] Assembly 1: Basic exercises
- [12] Assembly 2: Practical exercises
- [13] Drafting, and check assignments
- [14] Additional issues
- [15] Check and finish of the modeling