Descriptive Geometry

INOUE   HIDEAKI

1. Course Description

In this course, students will study the projection of a point, line, plane, polyhedron and curved surface. Students learn the base of Descriptive Geometry through the accurate drawing work on paper. The classes are carried out by the drawing exercises for students to understand the contents and get interested in it. Students are expected to have a basic understanding of geometry. Descriptive Geometry is also the base for learning the Drawing for Mechanical Engineering. This course is carried out by flip teaching and students perform a group work. Also in this course, students make a presentation of their solution for task in front of other students.
Students can acquire the knowledge, skill and behavior for DP2 to DP6 through this cours.

2. Course Objectives

Descriptive Geometry is a study that solves geometric problems graphically by converting a three-dimensional solid into a two-dimensional plane.
Students develop the ability to grasp three-dimensional objects in space as a basic ability to correctly read and draw drawings. The goal is to be able to draw sketches that are the basis of design and drafting. Students will be able to acquire presentation skills based on presentations, become able to recognize space, and become interested in design and drafting.

3. Grading Policy

Grade will be calculated according to the following process : Reports for tasks(50%) and The Term-end examination(50%). And students are required to attend classes over 2/3 of total classes in this course, in order to take part in the term-end examination.

4. Textbook and Reference

Textbook
Textbook:『Standard Course Descriptive Geometry』Satoru Ino et al; Kyoritsu Pablishing Co., Ltd.

5. Requirements(Assignments)

Students have to prepare and bring a Textbook, notebook, a triangle(set square) and drawing compass in the class (1.5hr).
The Exchange report of reflection is carried out in every class in this course, in order to communicate with teacher (1hr).
This course will be taught in Japanese.

6. Note

7. Schedule

[1]   Concept of Projection and OrthogonalProjection
[2]   Projection of Point
[3]   Projection of Line
[4]   Trace of Line and Projection of 2 Lines
[5]   Distance between 2 Lines and Perpendicular Lines
[6]   Trace of Plane and Projection of Line & Point on Plane
[7]   Intersection of Planes
[8]   Auxiliary trace and Inclination angle of Plane and Parallel Planes
[9]   Intersection of Plane and Line
[10]   Plane and Normal
[11]   Intersection of Line & Plane and Inclinatin Angle of 2 Planes
[12]   Projection Section of Polyhedron
[13]   Projection and Section of Single Curved Surface
[14]   Projection and Section of Double Curved Surface
[15]   Review, Reflection and Term-end Examination