Fluid Mechanics 2

Syllabus Number 1B202
Basic Major Subjects
Elective Requisites 2 credit

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1. Course Description

The studies of the viscous fluid flow, the design method of a pipeline and the hydrodynamic force around body.Group discussion is allowed when report is prepared at every exercise.In this lesson, we mainly acquire knowledge about DP1.

2. Course Objectives

The study of phenomena of fluid flow as a basis for mechanical engineer.

3. Grading Policy

A total of 60% or more from the result of the exercise in every lecture and the total exercise is regarded as passing.
Reports on exercises from every lecture (80%), general exercises (20%)

4. Textbook and Reference

Textbook
Nothing.

5. Requirements(Assignments)

We will apply the contents of previous lectures often, please read and review essential points in the notes (30 minutes). Preparation for each lesson : Contents and amount of preparation will be advised in writing, etc. at the end of the last lesson.

6. Note

7. Schedule

[1] Outline of fluid dynamics 2
[2] Derivation of Navier Stokes equation
[3] Application of Navier Stokes equation (flat plate)
[4] Application of Navier Stokes equation (pipe)
[5] Application of Navier Stokes equation (unsteady state)
[6] Turbulent velocity distribution (logarithmic law)
[7] Turbulent velocity distribution (power law)
[8] Open channel flow
[9] Boundary layer theory
[10] Momentum boundary layer theory
[11] Flow around object (slow flow)
[12] Flow around object (fast flow)
[13] Flow around object (wind tunnel experiment)
[14] Similarity law of flow
[15] Total exercises and summary