

Fluid Machinery

Syllabus Number

1B302

Special Subjects

Elective 2 credit

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1. Course Description

The studies of hydrodynamic operating principles and design methods of pumps and compressors. Group discussion is allowed when report is prepared at every exercise. In this lesson, we mainly acquire knowledge about DP1.

2. Course Objectives

The studies of the operating principles and design methods of pumps and compressors using the fluid energy.

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 special.

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

nothing special.

7. Schedule

- [1] Outline of fluid machinery
- [2] Classification of fluid machinery
- [3] Basics of fluid machinery
- [4] Energy balance of pipe system
- [5] Application of law of conservation of momentum
- [6] Application of law of conservation of angular momentum
- [7] Centrifugal turbo equipment
- [8] Characteristics of the turbine
- [9] Similarity law of water turbine
- [10] Reciprocating pump
- [11] Similarity law of pump
- [12] Cavitation
- [13] Basics of air machinery
- [14] Compressor
- [15] Total exercises and summary