

System Engineering

Syllabus Number

3E325

Special Subjects

Elective 2 credit

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1. Course Description

The main topics are as follows: systems approach, optimization, reliability, modeling and simulation, and control. This class also deals with academic fields related to systems science.

2. Course Objectives

This course aims at expanding students' knowledge in the field of systems engineering and systems science. Students will learn basic skills for developing complex engineering systems.

3. Grading Policy

Students are evaluated with a mid-term exam (30%), one report (30%) and a term exam (40%).

4. Textbook and Reference

Textbook

No textbook is used.

5. Requirements(Assignments)

6. Note

7. Schedule

- [1] Introduction
- [2] What is a system?
- [3] Systems approach
- [4] System design technique I
- [5] System design technique II
- [6] System design technique III
- [7] System optimization
- [8] Summary, mid-term exam
- [9] System reliability
- [10] System modeling and simulation, system control
- [11] Complex system I: fractal, chaos, etc.
- [12] Complex system II: cellular automaton, percolation, etc.
- [13] Game theory
- [14] Intelligent system
- [15] System theory, summary, term exam