# Automatic Control

Syllabus Number 1H304
Basic Major Subjects
Elective Requisites 2 credit

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1. Course Description

In this course, based on the basic knowledge of mathematics and mechanical dynamics, students will learn feedback control, transfer function, block diagrams, and stability criterion. (Related to DP2 and DP4)

2. Course Objectives

The aim of this course is to learn the basics of classical control theory, particularly feedback control.

3. Grading Policy

Reports (20%) and final examination (80%)
Answer of reports will be explained in next lecture.

4. Textbook and Reference

Reference
Japanese book (ISBN: 978-4627916821)

5. Requirements(Assignments)

Teaching materials will be shown on LMS. Student must prepare for next lecture by it (1.5 hours).

6. Note

7. Schedule

[1] Introduction
[2] Laplace transform: basic function
[3] Laplace transform: fundamental property
[4] Laplace transform: Inverse Laplace transform
[5] Differential equation
[6] Transfer function: basic elements
[7] Transfer function: electric circuit
[8] Transfer function: mechanical system
[9] Block diagram: combination
[10] Block diagram: equivalent transformation
[11] Determining stability: stability

[12] Determining stability: Routh-Hurwitz criterion
[13] System response: step response and control specification
[14] System response: steady-state error and final value theorem
[15] Final examination and summary