

Fundamental Mechatronics

Syllabus Number

3E334

Special Subjects

Elective 2 credit

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1. Course Description

Mechatronics technology has used in many products such as industrial robots and home appliances, etc. Therefore, learning mechatronics technology is very important for engineers. In this lecture, you will learn the basic contents of mechatronics.

This course is related to DP4

2. Course Objectives

- (1) Student can explain the material and characteristics that constitute the mechatronics products.
- (2) Student can explain the mechanical mechanism (link, gear, etc.)
- (3) Student can explain the type of sensors and its basic principles.
- (4) Student can explain the type of actuators and its basic principles.

3. Grading Policy

Evaluation rate are Report 20 %, midterm exam 40%, final exam(40%).

All the reports should be submitted.

4. Textbook and Reference

Textbook

We use LMS and handouts.

5. Requirements(Assignments)

Preparation for the class: 1.5 hours

Review of the class : 1.5 hours

6. Note

Course contents might be modified.

7. Schedule

- [1] What is mechatronics
- [2] The mechanism and behavior of Machine
- [3] The basic machine element in the mechatronics
- [4] The basic machine mechanism in the mechatronics
- [5] The type and character of the structural material
- [6] The type and basic principle of the sensor 1 : sensor and signals
- [7] The type and basic principle of the sensor 2 : physical quantity, object detection and other sensors
- [8] Mid term exam and review
- [9] Actuator 1 : the type of the actuator, driven element and its electronics circuit
- [10] Actuator 2 : Motor
- [11] Micro computer
- [12] Control technologies : Type of control
- [13] Control technologies : automatic control
- [14] Basic of the designing of mechatronics
- [15] Final exam and review