

# Experiments of Electronics1

Syllabus Number

3E315

Basic Major Subjects

Elective Requisites 2  
credit

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## 1. Course Description

The content of implementation in this experiment was shown the following lists.

- (1) We will make the actual wiring diagram by reading the circuit diagram.
  - (2) We will understand the peripheral functions and fundamental principle of microcomputer.
  - (3) We will understand the using method and fundamental principle of sensors.
- This course is related to DP4.

## 2. Course Objectives

- (1) Student can make the actual wiring diagram by circuit diagram.
- (2) Student can explain the peripheral functions and construction of microcomputer.
- (3) Student can explain the sensors (encoder, image sensor etc.).

## 3. Grading Policy

We will evaluate the student performance by reports and assignments.  
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

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|------|--|
| [1]  | Guidance   |
| [2]  | Electrical/Electronic circuits1: Actual wiring diagram and circuits                    |
| [3]  | Electrical/Electronic circuits2: Reading the circuits and make the electronic circuits |
| [4]  | Electrical/Electronic circuits3: Applied work  |
| [5]  | Microcomputer1: Digital signal (Digital input/output)                                  |
| [6]  | Microcomputer2: Analog signal (A/D conversion)   |
| [7]  | Microcomputer3: Interrupt (Timer interrupt)  |
| [8]  | Microcomputer4: Serial communication (I2C)   |
| [9]  | Microcomputer4: Serial communication (SPI)   |
| [10] | Microcomputer5: PWM signal and motor driver circuit                                    |
| [11] | Sensor1: Photointerrupter  |
| [12] | Sensor2: Rotary encoder  |
| [13] | Sensor3: Image sensor  |
| [14] | Sensor4: Wireless communication  |
| [15] | Summary and report guidance  |