

# Laboratory in Multimedia 1

Syllabus Number

3D315

Basic Major Subjects

Elective Requisites 2  
credit

SHIONOME. Takeaki

## 1. Course Description

This course introduces the foundations of making the practical multimedia applications and contents. This course deals with the following topics: (1)make the multimedia application programs using Unity, (2)make a speech recognition interface using Julius, (3)make the AI programs by machine learning, (4)write image recognition programs.

This course is related to diploma policy DP2 and DP4M.

## 2. Course Objectives

By the end of the course, students should be able to do the following:

- make the multimedia application programs using Unity,
- make a speech recognition interface using Julius.
- make the AI programs by machine learning.
- implement AI by machine learning using python, and write image recognition programs.

## 3. Grading Policy

Grading will be decided based on reports (100%).

Feedbacks on reports and examinations will be given on LMS.

## 4. Textbook and Reference

Textbook

The Learning materials are published on the LMS.

## 5. Requirements(Assignments)

The students are expected to read lecture materials and fill blanks in "main point notes" as preparation. It takes approximately one hour to finish this work.

## 6. Note

Absence and non-submission of reports are not accepted.

## 7. Schedule

- |      |  |
|------|--|
| [1]  | Basic usage of Unity   |
| [2]  | Basic C# programming   |
| [3]  | Collision detections and physical operations on Unity                                  |
| [4]  | Setting materials and shaders on Unity   |
| [5]  | Android application by Unity   |
| [6]  | VR application by Unity  |
| [7]  | Voice interface (1) input voice  |
| [8]  | Voice interface (2) enhance performance of voice detection                             |
| [9]  | Voice interface (3) application of voice interface                                     |
| [10] | Machine learning, AI (1) introduction to artificial intelligence programming for games |
| [11] | Machine learning, AI (2) development of AI programs playing games                      |
| [12] | 3D image processing (1) shooting and basic data processing of 3D image                 |
| [13] | 3D image processing (2) transform animation of 3D image                                |
| [14] | Scene change and GUI implementation in Unity   |
| [15] | Multimedia application design - plan and design of practical programs -                |