Programming1

1. Course Description

By using the programming language Processing, we learn the basics of computer programming. Specifically, it is required for students to understand what the computer programming is, how to install the programming language Processing, how to use the Processing Development Environment (PDE), simple drawing programs, data structures, operators, the standard output, variables, loop structures, how to obtain mouse-data, selection structures, functions, and the basics of algorithms. Furthermore, this course is provided in the form of flipped classroom. Thus, students are basically required to watch video materials and to fill in a preparation worksheet before each lecture. In each lecture, students are required to confirm what they do and do not understand through their own preparation worksheets, to deepen their own understandings through writing/reading/tracing some codes in practice. At the end of each lecture, it is required for each student to verify what he or she understands in the lecture, and summarize topics in the lecture.

This class is related to DP4C, DP4M and DP4E.

2. Course Objectives

This course aims at mastering basic knowledge of computer programming, techniques and concepts which are required for practical computer programming. Specifically, it is required for students to understand and to utilize the followings at least; basic programming concepts, basic data types, variables, basic operators, control structures, and basics of functions. In addition, this course aims at having each student acquires the ability to write computer programs which utilized the topics described above.

3. Grading Policy

This course evaluates at the following rate: worksheets are 10%, subjects are 25%, a mid-term examination is 25% and a term-end examination is 40%. Learners who received evaluation over the total 60% will be passed this course.

4. Textbook and Reference

Textbook

Casey Reas, Ben Fry, 船田 巧(訳)　Processingをはじめよう 第2版
(The Original: Casey Reas & Ben Fry,Make: Getting Started with Processing, 2nd Edition)
  O'Reilly Japan,2016, ISBN-13:978-4873117737

5. Requirements(Assignments)

Most of classes of this course are composed of flipped-learning classes. Learners have to learn by watching lecture videos before each class. And also, through filling a pre-class worksheet before the class, learners have to grasp whether they can comprehend the video contents or not. Learners must use 1.5 hours for these activities before each class.

After the class, learners must spare 1.5 hours for reflective learning using worksheets, working on subjects and so on.

6. Note

This course requires students to prepare and bring own PC to this class.

This course has systematic learning process. The content of each class consists of the contents of previous classes. Therefore, if you are absent from a class, it becomes difficult to understand the contents of subsequent classes. If you are absent from a class, you should learn them by yourselves using lecture videos and teaching materials. If you have any questions, please don't hesitate to ask instructors.

7. Schedule

[1]	What is Program? (Overview of Program and Programming)
[2]	Installing Processing and Usage of Processing Development Environment
[3]	Drawing
[4]	Data Type, Operators, Standard Output and Variables
[5]	Loop Structures using "for" Statement
[6]	Conditional Statements by if, if-else
[7]	Mid-term Examination
[8]	Exercise 1
[9]	Using Mouse-data
[10]	The Combination of Conditional and Iterative Statements
[11]	Multiple Loop, switch Statement
[12]	Loop Structures using "while" Statement
[13]	Functions
[14]	Exercise 2
[15]	Term End Examination, Summary