Syllabus

Department	Math & CS	Credits	2	Instructors		Class Room	
Subject	MC1201: CS1	Class hrs/wk	2	Lab (e-mail)		Attendee	

1 Course Description

Course Objectives

- To learn introductory-level Python syntax/semantics
- To practice building small-sized programs in Python language
- To solve elementary algorithmic problems with Python programming

Contents

- Primitive elements of Python language
  - variables/values
  - expressions/statements
  - types of variables/values/expressions
  - basic I/O
- Functions
  - built-in functions
  - user-defined functions
  - parameters/arguments
- Conditionals
  - boolean expressions with relational/logical operators
  - `if-else` statements
  - chained/nested `if-else`
  - functions with multiple `return` statements
  - boolean functions
- Lists
- Loops
  - `for` loops with `range(·)`
  - `while` loops
  - loop patterns (maximum/minimum, counter, quantifier)
- Simple programming with toy robot

2 Text & References

Text: None (slides and handouts)

References:

- "*The Practice of Computing using Python*", W. Punch and R. Richard

Course online:

- http://lms.ksa.hs.kr ⇒ Log in ⇒ 정보과학 ⇒ Your Instructor ⇒ ...

3 Grading

- Grading table

Activities	Percentages
In-class problems	30%
Midterm exam	20%
Final exam	40%
Attendance/Attitudes	10%

- Absolute evaluation
- In-class problems for each class
- Miderm exam: written test ($1 \sim 2$ hrs)
- Final exam: practical test (3 hrs)
- Late-work policy: -30%/day

4 Lecture Schedule

Week	Topics	Description
1	Course Overview	tool Installation
2	Basic Elements	variables, expressions, basic I/O
3	Functions	
4	Conditionals	boolean expressions, `if-else`
5	Boolean Functions	
	Midterm	
6	Loops #1	`for/range`, max/min pattern
7	Lists	
8	Loops #2	counter pattern, toy robot: basic moves
9	Loops #3	quantifiers pattern, toy robot: beepers
10	Loops #4	toy robots with `while` loops
11	Toy Robot	autonomous moves
12	Wrapup	previous years' final exam problems
	Final exam	

5 Calendar

Mon	**C1/C6**	**Tue**	**C2**	**Wed**	**C3/C7**	**Thu**	**C4/C8/I**	**Fri**	**C5**
2/22		2/23		2/24	*입학식*	2/25	**L1**	2/26	**L1**
2/29	**L1**	3/1	*holiday*	3/2	**L1**	3/3	**L2**	3/4	**L2**
3/7	**L2**	3/8	**L1**	3/9	**L2**	3/10	**L3**	3/11	**L3**
3/14	**L3**	3/15	**L2**	3/16	**L3**	3/17	**L4**	3/18	**L4**
3/21	**L4**	3/22	**L3**	3/23	**L4**	3/24	**L5**	3/25	**L5**
3/28	**L5**	3/29	**L4**	3/30	**L5**	3/31	**L6**	4/1	**L6**
4/4	**L6**	4/5	**L5**	4/6	**L6**	4/7	**L7**	4/8	**L7**
4/11	*Midt.*	4/12	*Midt.*	4/13	*Midt.*	4/14	*Midt.*	4/15	*Midt.*
4/18	**L7**	4/19	**L6**	4/20	**L7**	4/21	**L8**	4/22	**L8**
4/25	**L8**	4/26	**L7**	4/27	**L8**	4/28	**L9**	4/29	**L9**
5/2	**L9**	5/3	**L8**	5/4	**L9**	5/5	*holiday*	5/6	**L10**
5/9	**L10**	5/10	**L9**	5/11	**L10**	5/12	**L10**	5/13	**L11**
5/16	**L11**	5/17	**L10**	5/18	*holiday*	5/19	*holiday*	5/20	*holiday*
5/23	*SAF*	5/24	*SAF*	5/25	**L11**	5/26	**L11**	5/27	**L12**
5/30	**L12**	5/31	**L11**	6/1	**L12**	6/2	**L12**	6/3	**L13**
6/6	*holiday*	6/7	**L12**	6/8	**L13**	6/9	**L13**	6/10	**L14**
6/13	**L13**	6/14	**L13**	6/15	**L14**	6/16	*Final*	6/17	*Final*
6/20	*Final*	6/21	*Final*	6/22	*Final*				

6 Topics

1. Course overview
    - placement information
    - topics/plan
    - logistics
    - tool installation
    - comments

2. Basic elements
    - variables/values
    - expressions/statements
    - types of variables/values/expressions
    - basic I/O

3. Functions
    - indentation
    - built-in functions
    - user-defined functions
    - parameters/arguments
    - nested calls
    - function without return values

4. `if-else` conditionals
    - boolean expressions with relational/logical operators
    - `if-else` statements
    - chained/nested `if-else`
    - functions with multiple `return` statements

5. Boolean functions
    - defining/using boolean functions
    - common mistakes
    - tips on boolean functions and `if-else` conditionals

    Midterm exam

6. `for` loops #1
    - Shortcuts for arithmetic operators
    - `for` loops with `range(·)`
    - `for` loop pattern: maximum/minimum

7. Lists
    - list as fixed-size collection of values
    - length/index

8. `for` loops #2
    - `for` loop pattern: counter
    - toy robot: basic moves with `for` loops

9. `for` loops #3
    - `for` loop pattern: quantifier
    - toy robot: handling beepers with `if` conditionals

10. `while` loops
    - toy robots with `while` loops

11. Toy robot
    - autonomous moves

12. *Wrap-up for the final exam*

    Final exam