

IE Programming and Experiment 1

Course Name	Course type (credit/hours)	Required course(3/3)			Course code	B097
	Target students Division/major/grade	Industrial Engineering/Sophomore			Opening semester	2018 1ST SEMESTER
	Class time and classroom	Tue A(Pal323)Fri A(Pal323)			English Grade	A(100%English)
Reference to this course	Prerequisite courses					
	Related basic courses					
	Recommended concurrent courses					
	Related advanced courses					
Instructor	Name (title/division)		Limei Peng(Assistant Professor, Industrial Engineering)			
	Office Room Number	성호관402호	Office phone Number	2478	e-mail	
	Office hours			Homepage address		
Teaching Assistant	Name (title/division)					
	Office Room Number		Office phone Number		e-mail	

1. Introduction

This course provides an introduction to computer programming concepts using the JAVA programming language. This course does not assume any preliminary knowledge in JAVA language and does not assume that participants have any programming experience, which means it is for an absolute beginner looking to be a computer programmer. However, the participant should have general familiarity with their operating system environment (e.g., windows, Unix, MAC OS, etc) and also the ability to create and edit text files and manipulate directories. The course emphasis is on the object oriented facilities of JAVA and how they can be used to create structured, modular, and reusable code.

2. Course Objectives

Students who successfully take this course will be able to

1. Understand the basic concepts and the importance of computer programming languages.
2. Understand the fundamentals of object-oriented concepts.
3. Read and understand open source codes written in Java.
4. Solve simple and moderately complex problems using Java.
5. Understand the concepts of various data structures and algorithms.
6. Implement simple data structures and algorithms using Java.

3. Class types and activities

This courses will be processed in terms of the following methods:

1. 2.5hr-lectures will be given every week to provide students with the fundamental concepts and methods of JAVA.
2. 1~2 assignments.
3. 6~8 quizzes: computer-based or paper-based.
4. There will be no mid-term exam or final exam.

4. Teaching Method

- | | |
|--|---|
| <input checked="" type="checkbox"/> lecture | <input checked="" type="checkbox"/> discussion and debate |
| <input type="checkbox"/> team project(presentation and case studies) | <input checked="" type="checkbox"/> experiments(role-playing,etc) |
| <input type="checkbox"/> designing and production | <input type="checkbox"/> on-site learning(on-site training) |
| <input checked="" type="checkbox"/> others () | |

5. Support Systems in Use

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|--|---|---|
| <input checked="" type="checkbox"/> AjouBb | <input type="checkbox"/> automatic recording system | <input type="checkbox"/> web-based assignment |
| <input checked="" type="checkbox"/> cyber lecture | <input type="checkbox"/> online content | |
| <input type="checkbox"/> class behavior analyzing system | <input type="checkbox"/> others | |

6. Teaching Tools

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|---|---|--|
| <input checked="" type="checkbox"/> PBL(Problem Based Learning) | <input type="checkbox"/> CBL(Case Based Learning) | <input type="checkbox"/> TBL(Team Based Learning) |
| <input type="checkbox"/> UR(Undergraduate Research) | <input type="checkbox"/> FL(Flipped Learning) | <input checked="" type="checkbox"/> DSAL(Data Science Active Learning) |
| <input type="checkbox"/> others | | |

7. Knowledge and ability required for taking this course

8. Method of Evaluation

Evaluation Item	The Number of Times	Evaluation Proportion	Remarks
Attendance		5%	
midterm exam		30%	Computer-based and/or paper-based
final exam		30%	Computer-based and/or paper-based
quiz	2~3	20%	Computer-based and/or paper-based
presentation			
discussion			
homework	2-3	15%	
etc			
study hours			

9. Textbook and supplementary material

Main/Sub	Title (Web-site)	Writer	Publisher	Publication year
Main	Java-How to Program, tenth edition	Paul Deitel & Harvey Deitel		

10. Class system and Class shedule

To successfully master the contents of this course, students will be guided/taught/trained through the following steps:

Step1: Students should know the basic concepts of programming languages, coding, communication with computers.

Step2: Students should know the installation of eclipse and can use it to open/read/write JAVA programs.

Step3: Students should know the constitutes of a integrated program, e.g., main functions, functions, variables, control structures (if, if...else, while, do...while, etc).

Step4: Students should know how to realize functions using control structures, such as recursion, iterration, etc.

Step5: Students should master the concepts and characteristics of object, such as inheritance and polymorphism, and know how to use classes.

* language : K-korean, E-English

< Class Schedule >

* language : K-korean, E-English

Weeks	Topics	language	Instructor	Teaching Method	Evaluation Method	Matter to be prepared
1	Course description; Introduction to Computers, Programming languages, and JAVA	E	Limei Peng			
2	Ch2-Introduction to Java Applications; Input/Output and Operators	E	Limei Peng			
3	Ch3-Introduction to Class, Objects, and Strings(Theory)	E	Limei Peng			
4	Ch3-Introduction to Class, Objects, and Strings(Practice & Quiz)	E	Limei Peng			
5	Ch4-Control Statement: Part1; Assignments operators	E	Limei Peng			
6	Ch5-Control Statement: Part2; Logical operators	E	Limei Peng			
7	Ch5-Control Statement: Part2; Logical operators	E	Limei Peng			
8	MidTerm	E	Limei Peng			
9	Ch6-Methods: A Deeper Look	E	Limei Peng			
10	Ch6-Methods: A Deeper Look	E	Limei Peng			
11	Ch7-Arrays and ArrayLists	E	Limei Peng			
12	Ch7-Arrays and ArrayLists	E	Limei Peng			
13	Ch8-Classes and Objects: A Deeper Look	E	Limei Peng			
14	Ch9-Object-Oriented Programming: Inheritance	E	Limei Peng			
15	Ch9-Object-Oriented Programming: Inheritance	E	Limei Peng			
16	Final Exam	E	Limei Peng			

11. Other items of notification

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