

Object-oriented Programming

Course Name	Course type (credit/hours)		Required course(4/5)		Course code	F062
	Target students Division/major/grade		Software and Computer Engineering/Sophomore		Opening semester	2017 2ND SEMESTER
	Class time and classroom		Mon 8.5(Pal328) Mon 9.5(Pal328)Tue 13:30~15:00 (Pal325)Thu 12:00~13:30 (Pal325)		English Grade	A(100%English)
Reference to this course	Prerequisite courses		Computer programming			
	Related basic courses					
	Recommended concurrent courses					
	Related advanced courses					
Instructor	Name (title/division)		Yenewondim Biadgie.S(Assistant Professor, Software and Computer Engineering)			
	Office Room Number	팔달관 1011	Office phone Number	3857	e-mail	
	Office hours			Homepage address		
Teaching Assistant	Name (title/division)					
	Office Room Number		Office phone Number		e-mail	

1. Introduction

This course uses Java as a vehicle to take you to a journey through the world of object-oriented programming. The covered concepts include basic Java concepts and development tools, inheritance, encapsulation, polymorphism, interfaces, abstract classes, memory management, user interfaces, file I/O, exceptions and networking. The course has theoretical lectures and practical laboratory sessions during which learned theories can be applied in practice.

2. Course Objectives

By the end of the course the students will know the principles of object-oriented programming and will be able to develop Java-based software using these principles.

3. Class types and activities

Teaching methods are divided according to the two parts of the course:

1. Lectures:

Lectures cover the theoretical aspects of Java and object-oriented programming. Furthermore, there will be narrated programming demonstrations to prepare the students for lab sessions. The students will also form groups to create a software project in Java using the object-oriented design principles.

2. Laboratory sessions:

These are guided programming sessions during which students will learn how to use the programming facilities of Java to design and implement software in object-oriented style. These practical sessions will prepare the students for their programming project.

4. Teaching Method

- | | |
|---|---|
| <input checked="" type="checkbox"/> lecture | <input checked="" type="checkbox"/> discussion and debate |
| <input checked="" 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 type="checkbox"/> others | |

5. Support Systems in Use

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

6. Teaching Tools

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

7. Knowledge and ability required for taking this course

Computer programming

8. Method of Evaluation

Evaluation Item	The Number of Times	Evaluation Proportion	Remarks
Attendance	1	10	attendance and discussion
midterm exam	1	25	
final exam	1	25	
quiz			
presentation			
discussion			
homework	8–15	20	
etc	1	20	team project
study hours			

9. Textbook and supplementary material

Main/Sub	Title (Web-site)	Writer	Publisher	Publication year
	Lecture slides			
	Head First Java, 2nd ed. by Sierra and Bates			
	Java API documentation			

10. Class system and Class shedule

Materials have been chosen to give the students both practical and theoretical materials to learn the course topic. Lecture slides will cover all essential aspects of the course. Other materials are supportive.

Team project is used as a means to teach the students to work together and to communicate in a professional manner. In addition, Professor and TAs are present in each lab session, providing one-to-one support through discussions.

Public communication skills are rehearsed through student presentations. During the first half of the course, the students will present their project ideas and plans to the class, followed by Q&A session. At the end of the course, the students will present their project results and debate with other teams on the results.

< Class Schedule >

* language : K-korean, E-English

Weeks	Topics	language	Instructor	Teaching Method	Evaluation Method	Matter to be prepared
1	Introduction to course	E	Yenewondim Biadgie.S			
2	Variables, data types, memory	E	Yenewondim Biadgie.S			
3	Object behavior, arrays	E	Yenewondim Biadgie.S			
4	Object state, encapsulation	E	Yenewondim Biadgie.S			
5	Java API, Inheritance	E	Yenewondim Biadgie.S			
6	Inheritance, polymorphism	E	Yenewondim Biadgie.S			
7	Polymorphism	E	Yenewondim Biadgie.S			
8	Midterm exam	E	Yenewondim Biadgie.S			
9	Interfaces, memory management	E	Yenewondim Biadgie.S			
10	Static behavior, exception handling	E	Yenewondim Biadgie.S			
11	GUI	E	Yenewondim Biadgie.S			
12	GUI	E	Yenewondim Biadgie.S			
13	Serialization, File I/O, threads	E	Yenewondim Biadgie.S			
14	Networking, etc	E	Yenewondim Biadgie.S			
15	Group presentations	E	Yenewondim Biadgie.S			
16	Final exam	E	Yenewondim Biadgie.S			

11. Other items of notification