

Object-oriented Programming

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|--------------------------|--------------------------------------|----------|---------------------------------------------------------------------------------|------------------|------------------|-------------------|
| Course Name | Course type (credit/hours) | | Required course(4/5) | | Course code | F061 |
| | Target students Division/major/grade | | Software and Computer Engineering/Sophomore | | Opening semester | 2018 2ND SEMESTER |
| | Class time and classroom | | Mon 8.5(Pal328) Mon 9.5(Pal328)Tue 10:30~12:00 (Pal309)Thu 09:00~10:30 (Pal309) | | 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

☒ lecture

☒ discussion and debate

☒ team project(presentation and case studies)

☒ experiments(role-playing,etc)

☐ designing and production

☐ on-site learning(on-site training)

☐ others

5. Support Systems in Use

☒ AjouBb

☐ automatic recording system

☐ web-based assignment

☐ cyber lecture

☐ online content

☐ class behavior analyzing system

☐ others

6. Teaching Tools

☒ PBL(Problem Based Learning)

☐ CBL(Case Based Learning)

☒ TBL(Team Based Learning)

☐ UR(Undergraduate Research)

☐ FL(Flipped Learning)

☐ DSAL(Data Science Active Learning)

☐ 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 | 5 | attendance and discussion |
| midterm exam | 1 | 25 | |
| final exam | 1 | 30 | |
| 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 |
|----------|--------------------------------------------------------------------------------------------|--------|-----------|------------------|
| | Java How to program early objects (10th ed.), Paul Deitel and Harvey Deitel, Pearson, 2015 | | | |
| | Core Java Volume I, 10th ed, Cay S. Horstmann, Prentice Hall, 2016 | | | |
| | Head First Java, 2nd ed, Kathy Sierra and Bert Bates, Oreiley, 2005 | | | |
| | 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 | Course Overview & Introduction to Java | E | Yenewondim Biadgie.S | | | |
| 2 | Fundamental Programming Structures | E | Yenewondim Biadgie.S | | | |
| 3 | Objects and Classes | E | Yenewondim Biadgie.S | | | |
| 4 | Objects and Classes (Chusuk Holiday) | E | Yenewondim Biadgie.S | | | |
| 5 | Objects and Classes & Inheritance | E | Yenewondim Biadgie.S | | | |
| 6 | Inheritance | E | Yenewondim Biadgie.S | | | |
| 7 | Interfaces & Lambda Expression | E | Yenewondim Biadgie.S | | | |
| 8 | mid exam | E | Yenewondim Biadgie.S | | | |
| 9 | Inner Classes & Exception Handling | E | Yenewondim Biadgie.S | | | |
| 10 | Generic Programming | E | Yenewondim Biadgie.S | | | |
| 11 | Collection Framework | E | Yenewondim Biadgie.S | | | |
| 12 | GUI Part 1 | E | Yenewondim Biadgie.S | | | |
| 13 | GUI Part 2 (Swing) | E | Yenewondim Biadgie.S | | | |
| 14 | Input & Output Object Serialization | E | Yenewondim Biadgie.S | | | |

< Class Schedule >

* language : K-korean, E-English

| Week s | Topics | lang uag e | Instructor | Teaching Method | Evaluation Method | Matter to be prepared |
|-----------|-----------------|------------------|-------------------------|--------------------|----------------------|--------------------------|
| 15 | Advanced Topics | E | Yenewondim Biadgie.S | | | |
| 16 | Final exam | E | Yenewondim Biadgie.S | | | |

11. Other items of notification