**OSTIM TECHNICAL UNIVERSITY**
**FACULTY OF ECONOMICS AND ADMINISTRATIVE SCIENCES**
**MANAGEMENT INFORMATION SYSTEMS DEPARTMENT**
**COURSE SYLLABUS FORM**

| MIS 205 Object Oriented Programming | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Course Name** | **Course Code** | **Period** | **Hours** | **Application** | **Laboratory** | **Credit** | **ECTS** |
| Object Oriented Programming | MIS 205 | 1 | 3 | 0 | 0 | 3 | 5 |

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| **Language of Instruction** | English |
| **Course Status** | Compulsory |
| **Course Level** | Bachelor |
| **Learning and Teaching Techniques of the Course** | Lecture, Question-Answer, Problem Solving, Example |

## Course Objective

The main objective of this course is to learn principles and stages of object-oriented software development. Get an overview of object-oriented software modeling with Unified Modeling Language and exposure to CASE tools for object-oriented development. Experience with such tools and environments through programming assignments and/or a term project

## Learning Outcomes

The students who succeeded in this course will be able;

- Learn basics of the software engineering (SE) process life cycle
- Learn what the object-oriented (OO) approach to software development is, through OO principles and design patterns
- Learn UML (Unified Modeling Language) that is part of most CASE (Computer Aided Software Engineering) tools and the benefits of visual modelling / diagramming
- Practice the application of principles of object-oriented software development through the course group project
- Develop teamwork and communication skills through the course group project
- Learn about the most common design patterns

| Course Outline |
|---|
| This course aims to provide general information about object-oriented software engineering concepts. Throughout the course, following topics will be covered: Introduction to Software Engineering, Modeling with UML, Project Organization and Communication, Dealing with Complexity, Requirements Elicitation, Analysis, System Design, Object Design, Mapping Models to Code, Testing, Design Patterns. |

| Weekly Topics and Related Preparation Studies | | |
|---|---|---|
| **Weeks** | **Topics** | **Preparation Studies** |
| 1 | Course Introduction | – |
| 2 | Introduction to Software Engineering | – |
| 3 | Modeling with UML | – |
| 4 | Project Organization and Communication | – |
| 5 | Dealing with Complexity | – |
| 6 | Requirements Elicitation | – |
| 7 | Analysis | – |
| **8** | **MIDTERM EXAM** | |
| 9 | System Design | |
| 10 | Object Design | – |
| 11 | Mapping Models to Code | – |
| 12 | Testing | – |
| 13 | Design Patterns | – |
| 14 | Real Life Examples | – |
| **15** | **FINAL EXAM** | |
| **Textbook(s)/References/Materials:** | | |

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| **Textbook:**<br>Y.D. Liang, Introduction to Java Programming and Data Structures: Comprehensive, 12th Edition, Pearson, Boston, MA, 2020 |
| **Supplementary References:**<br>Freeman, E., Robson, E., Bates, B., & Sierra, K. (2004). Head First Design Patterns: A Brain-Friendly Guide. " O'Reilly Media, Inc.".<br>Weisfeld, M. (2008). The object-oriented thought process. Pearson Education. |
| **Other Materials:** |

| Assessment | | |
|---|---|---|
| **Studies** | **Number** | **Contribution margin (%)** |
| Attendance | 1 | 10 |
| Lab | | |
| Class participation and performance | 1 | 10 |
| Field Study | | |
| Course-Specific Internship (if any) | | |
| Quizzes / Studio / Critical | | |
| Homework | | |
| Presentation | | |
| Projects | | |
| Report | | |
| Seminar | | |
| **Midterm Exam/Midterm Jury** | **1** | **30** |
| **General Exam / Final Jury** | **1** | **50** |
| **Total** | | **100** |
| **Success Grade Contribution of Semester Studies** | | **50** |
| **Success Grade Contribution of End of Term** | | **50** |
| **Total** | | **100** |

| ECTS / Workload Table | | | |
|---|---|---|---|
| **Activities** | **Number** | **Duration (Hours)** | **Total Workload** |
| **Course hours (Including the exam week): 16 x total course hours)** | 16 | 3 | 48 |
| Laboratory | 5 | 2 | 10 |
| Application | 5 | 1 | 5 |
| Course-Specific Internship (if any) | | | |
| Field Study | | | |
| **Study Time Out of Class** | 16 | 2 | 32 |
| Presentation / Seminar Preparation | | | |
| Projects | | | |
| Reports | | | |
| Homework | 5 | 1 | 5 |
| Quizzes / Studio Review | **5** | **2** | **10** |
| Preparation Time for Midterm Exams / Midterm Jury | **1** | **10** | **10** |
| Preparation Period for the Final Exam / General Jury | **1** | **30** | **30** |
| **Total Workload** | **(150/30 = 5)** | | **150** |

| Course' Contribution Level to Learning Outcomes | | | | | | |
|---|---|---|---|---|---|---|
| **Nu** | **Learning Outcomes** | **Contribution Level** | | | | |
| | | **1** | **2** | **3** | **4** | **5** |
| **LO1** | Learn basics of the software engineering (SE) process life cycle | | | | | X |
| **LO2** | Learn what the object-oriented (OO) approach to software development is, through OO principles and design patterns | | | | | X |
| **LO3** | Learn UML (Unified Modeling Language) that is part of most CASE (Computer Aided Software Engineering) tools and the benefits of visual modelling / diagramming | | | | | X |
| **LO4** | Practice the application of principles of object-oriented software development through the course group project | | | | | X |
| **LO5** | Develop teamwork and communication skills through the course group project | | | | | X |
| **LO6** | Learn about the most common design patterns | | | | | X |

| | Relationship Between Course Learning Outcomes and Program Competencies (Department of Management Information Systems) | | | | | | | |
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| **Nu** | **Program Competencies** | **Learning Outcomes** | | | | | | **Total Effect (1-5)** |
| | | **LO1** | **LO2** | **LO3** | **LO4** | **LO5** | **LO6** | |
| **1** | Recognize and distinguish the basic concepts such as data, information, and knowledge in the field of Management Information Systems and know the processes to be followed for data acquisition, storage, updating, and security. | x | x | x | x | x | x | **5** |
| **2** | Develop and manage databases suitable for collecting, storing, and updating data. | x | x | x | x | x | x | **5** |
| **3** | As a result of his/her ability to think algorithmically, and easily find solutions to problems concerning basic business functions. | x | x | x | x | x | x | **5** |
| **4** | Learn programming logic, and have information about current programming languages. | x | x | x | x | x | x | **5** |
| **5** | Be able to use up-to-date programming languages. | x | x | x | x | x | x | **5** |
| **6** | Be able to take part in teamwork or lead a team using knowledge of project management processes. | | | | | | | |
| **7** | Know ethical and legal rules, and use professional field knowledge within the scope of ethical and legal rules. | | | | | | | |
| **8** | Know the fundamental areas of business administration namely management and organization, production, finance, marketing, numerical methods, accounting, etc., and have the knowledge and skills to work in-depth in at least one of them. | | | | | | | |
| **9** | Be able to solve the problems encountered in the field of internet programming by designing web applications. | x | x | x | x | x | x | **5** |
| **10** | Develop and manage logistics and supply chain management activities | | | | | | | |
| **11** | Adapt his/her theoretical knowledge and the experience he/she will gain through practice at the departments of businesses such as information technologies, R&D, and management to real life. | | | | | | | |
| **12** | Be able to develop strategies that will provide a competitive advantage with his/her advanced knowledge of | | | | | | | |

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| | management strategies and management functions. | | | | | | | |
| **13** | Develop a business idea, commercialize the business idea, and design and manage his/her venture using entrepreneurial knowledge. | | | | | | | |
| **14** | By using English effectively, they can follow, read, write, speak and communicate universal information in the field of management information systems in a foreign language with professional competence. | | | | | | | |
| **Total Effect** | | | | | | | | **30** |

| **Policies and Procedures** |
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| **Web page:** https://www.ostimteknik.edu.tr/management-information-systems-english-1241/915 |
| **Exams:** The exams aim at assessing various dimensions of learning: knowledge of concepts and theories and the ability to apply this knowledge to real-world phenomena, through analyzing the situation, distinguishing problems, and suggesting solutions. The written exams can be of two types, ie. open-ended questions, which can also be in the form of problems or multiple-choice questions. |
| **Assignments:** Quizzes and Homework (Assignments) might be applicable. Scientific Research Ethics Rules are very important while preparing assignments. The students should be careful about citing any material used from outside sources and reference them appropriately. |
| **Missed exams:** Any student missing an exam needs to bring an official medical report to be able to take a make-up exam. |
| **Projects:** A group project with teamwork is welcome. |
| **Attendance:** Attendance requirements are announced at the beginning of the term. Students are usually expected to attend at least 70% of the classes during each term. |
| **Objections:** If the student observes a material error in his/her grade, he/she has the right to place an objection to the Faculty or the Department. The claim is examined and the student is notified about its outcome. |