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

MIS 112 Algorithms and Programming							
Course Name	**Course Code**	**Period**	**Hours**	**Application**	**Laboratory**	**Credit**	**ECTS**
Algorithms and Programming	MIS 112	1	4	0	0	3	6

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

Course Objective
This course gives an opportunity to put the basic computer literacy, design and programming skills learnt in MIS111 into practice. The course has two components. The first is simply a continuation of MIS111 aimed at expanding the range of techniques available to solve problems. These new techniques will be presented in formal lectures and, as in MIS111, students will be given laboratory assignments designed to let them practice the concepts. Material in this section includes recursion, files and some basic data structures, plus a little about object-oriented programming and event-driven architectures.

Learning Outcomes
The students who succeeded in this course will be able to: - Learn recursion   - Create objects of classes   - Understand inheritance and polymorphism   - Understand abstract classes & interfaces   - Access files and folders, store data on disc   - Create basic user interfaces   - Design structure for simple problems

Course Outline

This course includes a simple review of the main concepts of programming. Recursion is discussed in a simple form. Writing classes and instantiating objects from the class templates are covered. Inheritance, polymorphism, abstract classes and interfaces are shown. File and folder operations are practiced. Basic user interfaces are implemented. Finally, system design of simple problems are done.

Weekly Topics and Related Preparation Studies

Weeks	Topics	Preparation Studies
1	Course Introduction	–
2	Review of Programming Concepts	–
3	Recursion	–
4	Classes and Objects	–
5	Inheritance & Polymorphism	–
6	Abstract Classes & Interfaces	–
7	Abstract Classes & Interfaces	–
8	MIDTERM EXAM	
9	Files and folders	
10	User Interfaces	–
11	User Interfaces	–
12	System Design	–
13	System Design	–
14	Review	–
15	FINAL EXAM	

Textbook(s)/References/Materials:
Textbook: Y.D. Liang, Introduction to Java Programming and Data Structures: Comprehensive, 12th Edition, Pearson, Boston, MA, 2020 Cormen, T. H., Leiserson, C. E., Rivest, R. L., & Stein, C. (2022). Introduction to algorithms. MIT press.
Supplementary References: Robert W. Sebesta Concepts of Programming Languages, 11th edition(or 12thedition), Pearson
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	**10**	**2**	**20**
Preparation Time for Midterm Exams / Midterm Jury	**1**	**20**	**20**
Preparation Period for the Final Exam / General Jury	**1**	**30**	**30**
Total Workload	**(170/30 = 5,66)**		**170**

Course' Contribution Level to Learning Outcomes						
Nu	**Learning Outcomes**	**Contribution Level**				
		1	**2**	**3**	**4**	**5**
LO1	Learn recursive methods and principles of recursion					X
LO2	Learn writing classes and creating objects from classes					X
LO3	Learn inheritance and polymorphism					X
LO4	Learn abstract classes and interfaces					X
LO5	Learn file and folder operations					X
LO6	Learn user interface programming					X
LO7	Learn system design					X

Nu	Program Competencies	Learning Outcomes							Total Effect (1-5)
		LO1	LO2	LO3	LO4	LO5	LO6	LO7	
	Relationship Between Course Learning Outcomes and Program Competencies (Department of Management Information Systems)								
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	x	5
2	Develop and manage databases suitable for collecting, storing, and updating data.	x	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	x	5
4	Learn programming logic, and have information about current programming languages.	x	x	x	x	x	x	x	5
5	Be able to use up-to-date programming languages.	x	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	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 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
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.