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

MIS XXX Information Technology Hardware and Software							
Course Name	**Course Code**	**Period**	**Hours**	**Application**	**Laboratory**	**Credit**	**ECTS**
Information Technology Hardware and Software	MIS XXX	1	3	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

Course Objective
The purpose of this course is to provide the hardware/software technology background to enable systems development personnel to understand the tradeoffs in computer architecture for effective use in a business environment. System architectures for single-user, central, and networked computing systems will be discussed, as well as single-user and multi-user operating systems. Topics include CPU architecture and instruction sets, input and output devices, networking components, and operating system software for coordinating and controlling the use of all of the hardware. This course also offers an in-depth look at the hardware components of a computer, with the focus on proper installation, security, and administration. Students learn to identify, install, and configure various computer components, as well as basic computer and configuration concepts. This course also provides students with an understanding of proper maintenance and support of various hardware components. In addition, students learn how hardware, applications, and operating systems work together. Network, mobile, and printer terminology, concepts, troubleshooting, and security fundamentals are also covered.

Learning Outcomes
The students who succeeded in this course will be able;

1. Identify names, purpose, and characteristics of hardware components by sight or definition.
2. Identify the names, purposes, and performance characteristics of standard peripheral ports, associated cabling, and their connectors.
3. Differentiate between form factors for hardware compatibility.
4. Explain the communication process between the user, hardware, and operating system.
5. Explain proper procedures for installing and configuring common hardware components.
6. Evaluate the considerations involved when upgrading computer hardware or the operation system.
7. Recognize, troubleshoot, and resolve common problems associated with hardware components.
8. Identify network, mobile, and printer terminology, technologies, interfaces, and security options.

Course Outline

Principles and application of telecommunication and computer systems hardware and software focusing on coding of data and programs, system hardware organization, and operating systems.

Weekly Topics and Related Preparation Studies

Weeks	Topics	Preparation Studies
1	Course Introduction **Ch-1:** Introduction to the World of IT	–
2	**Ch-2**: Connectivity	– External Connectivity – Various ports – Network Cabling – Integrated Motherboard Ports – Wireless Connectivity for Input Devices
3	**Ch-3**: On the Motherboard	– Processor – Cache – Clocking – Types of Motherboards – Motherboard Troubleshooting
4	**Ch-4:** Introduction to Configuration	– BIOS – CMOS Memory, – Motherboard Battery – Hardware Configuration
5	**Ch-5:** Disassembly and Power	– Disassembly – Electrostatic Discharge – Electromagnetic Interference – Reassembly – Preventive Maintenance – Power Supply issues
6	**Ch-6:** Memory	– Memory Installation – Adding More Cache/RAM – Monitoring Memory Usage in Windows
7	**Ch-7:** Storage Devices	– Hard Drive, Solid State Drive, – PATA, SATA, and SAS Connectivity – Storage Device Configuration
8	**MIDTERM EXAM**	
9	**Ch-8**: Multimedia Devices	– Optical Drive – Sound Cards, Speakers – Scanners, KVMs – Projectors, Video Recording
10	**Ch-9:** Printers	– Types of Printers – Printer installations

		– Printer sharing, Cloud printing
11	**Ch-10:** Mobile Devices	– Mobile Devices, cellphones, smartphones, tablets, laptops – Wired and wireless connectivity
12	**Ch-11:** Computer Design and Troubleshooting Review	– Computer System Design – Motherboard and Associated Component Design – Power Supply and Case Design – Storage Subsystem Design – Audio Subsystem Design – Display Subsystem Design – Troubleshooting Overview
13	**Ch-12:** Internet Connectivity, Virtualization, and Cloud Technologies	– Dial-up Overview, Serial Communication Overview, Configuring Traditional Serial Devices, 56 kbps Modems, Digital Modems and ISDN – VoIP – Cable Modems, xDSL Modems, Satellite Modems – Modem Preventive Maintenance – Mobile Connectivity Overview – Virtualization Basics – Cloud Computing – Web Browsers
14	**Ch-13:** Networking	– Attaching to Different Types of Networks – Network Topologies – The OSI Model, The TCP/IP Model, Network Addressing, More IPv4 Addressing, – Wireless Network Design – WWAN Cellular Configuration Network Servers – Embedded and Legacy Systems
15	**Ch-14:** Introduction to Operating Systems	– User Interaction with Operating Systems – 32-bit vs. 64-bit Operating Systems – Windows 7/8/8.1/10 Versions – Workstation Operating Systems – Operating Systems for Mobile Devices – Troubleshooting Windows issues
16	**FINAL EXAM**	

Textbook(s)/References/Materials:
Textbook: Schmidt, C. A. (2020). Complete A+ Guide to IT Hardware and Software Lab Manual. Pearson IT Certification.
Supplementary References: Schmidt, C. A. (2020). Complete A+ Guide to IT Hardware and Software Lab Manual: A CompTIA A+ Core 1 (220-1001) & CompTIA A+ Core 2 (220-1002) Lab Manual. Pearson IT Certification.
Other Materials: -

Assessment		
Studies	**Number**	**Contribution margin (%)**
Attendance		
Lab	**1**	**10**
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			
Application			
Course-Specific Internship (if any)			
Field Study			
Study Time Out of Class	16	3	48
Presentation / Seminar Preparation			
Projects			
Reports			
Homework			
Quizzes / Studio Review	5	1	5
Preparation Time for Midterm Exams / Midterm Jury	2	20	40
Preparation Period for the Final Exam / General Jury	1	40	40
Total Workload		**(181/30 = 6,03)**	**181**

Course' Contribution Level to Learning Outcomes						
Nu	**Learning Outcomes**	**Contribution Level**				
		1	**2**	**3**	**4**	**5**
LO1	Identify names, purpose, and characteristics of hardware components by sight or definition.					X
LO2	Identify the names, purposes, and performance characteristics of standard peripheral ports, associated cabling, and their connectors.					X
LO3	Differentiate between form factors for hardware compatibility.					X
LO4	Explain the communication process between the user, hardware, and operating system.					X
LO5	Explain proper procedures for installing and configuring common hardware components.					X
LO6	Evaluate the considerations involved when upgrading computer hardware or the operation system.					X
LO7	Recognize, troubleshoot, and resolve common problems associated with hardware components.					X
LO8	Identify network, mobile, and printer terminology, technologies, interfaces, and security options.					X

Nu	Program Competencies	LO1	LO2	LO3	LO4	LO5	LO6	LO7	LO8	Total Effect (1 -5)
	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	5
2	Develop and manage databases suitable for collecting, storing, and updating data.			x	x	x		x		5
3	As a result of his/her ability to think algorithmically, easily find solutions to the problems concerning the basic business functions.						x			3
4	Learn programming logic, have information about current programming languages.			x	x		x			4
5	Be able to use up-to-date programming languages.		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, use professional field knowledge within the scope of ethical and legal rules.									
8	Have knowledge in 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			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.					x	x	x	x	5
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 own 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.	x		x		x				3
	Total Effect									36

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.