



MARMARA UNIVERSITY - FACULTY OF ENGINEERING

2017-2018 Fall

CSE1100 Introduction to Computer Engineering

**COURSE DESCRIPTION FORM**

<b>Offering Department</b>	Department of Computer Engineering		Undergraduate must course (1st semester)						
<b>Course Code</b>	CSE1100								
<b>Course Name</b>	Introduction to Computer Engineering								
<b>Language of Instruction</b>	English								
<b>ECTS</b>	2								
<b>Contact Hours</b>	Theoretical (T): 2			Practice (U): 0			Laboratory (L): 0		
<b>Pre-requisites</b>	---								
<b>Instructor</b>	<b>Name</b>	Fatma CORUT ERGİN							
	<b>E-mail</b>	fatma.ergin@marmara.edu.tr							
<b>Course Materials</b>	<b>Mandatory</b>	Introduction to Computing Systems: From Bits and Gates to C and Beyond, 2nd Edition Yale N. Patt, Sanjay J. Patel							
	<b>Recommended</b>								
<b>Course Objectives</b>	To gain knowledge about the basic building blocks of computers. To gain knowledge on how simple assembly language commands are represented in machine language. To gain knowledge on how to represent a simple system with a finite state machine. To lay the foundations of professional and ethical consciousness.								
<b>Course Content</b>	Bit representations for different data types in computer systems. Arithmetic and logic operations on binary system. The working principles of transistors, gates, decoders, multiplexers, SR latches, gated-D latches and registers. Analysis of finite state machines. Von Neumann model. Steps of instruction cycle. The assembly language and machine language representations of the instructions in LC-3 instruction set architecture. Ethics in software engineering.								
<b>Learning Outcomes</b>	<b>LO1</b>	To explain how different data types are represented in computer.							
	<b>LO2</b>	To design a circuit using logic gates for any truth table.							
	<b>LO3</b>	To analyze a simple finite state machine.							
	<b>LO4</b>	To write and analyze machine language code for operate, control, and data movement instructions.							
	<b>LO5</b>	To write and analyze assembly language programs for operate, control, and data movement instructions.							
	<b>LO6</b>	To act in accordance with ethical principles and to gain consciousness on professional and ethical responsibility.							
<b>Program Outcomes</b>		<b>LO1</b>	<b>LO2</b>	<b>LO3</b>	<b>LO4</b>	<b>LO5</b>	<b>LO6</b>		
<b>PO1</b>	Adequate knowledge in mathematics, science (a) and computer engineering subjects (b) pertaining to the relevant discipline (1); ability to use theoretical and applied information in these areas to model and solve engineering problems (2).			1b	1b	1b	1b	1b	
<b>PO9</b>	Awareness of professional and ethical responsibility (a); have knowledge about the standards used in engineering applications (b).								a
<b>Subjects (Knowledge, Skills and Behaviours), Contributions of Subjects to Learning Outcomes, Assessment Methods</b>	<b>No</b>	<b>Week</b>	<b>Subjects</b>	<b>LO1</b>	<b>LO2</b>	<b>LO3</b>	<b>LO4</b>	<b>LO5</b>	<b>LO6</b>
	<b>S1</b>	1-2-3	Bits, Data Types, and Operations	MF, H, P					
	<b>S2</b>	4-5-6	Digital Logic Structures		MF, H				
	<b>S3</b>	7	Finite State Machines			MF, H			
	<b>S4</b>	8	Basic Components of The von Neumann Model				H		
	<b>S5</b>	9-10-11	Overview of The ISA				MF, P		
	<b>S6</b>	12-13	Assembly Language Programming					MF, P	
<b>S7</b>	14	Ethics in Computer Engineering						MF	
<b>Assessment Methods and Weights</b>	<b>No</b>	<b>Type</b>	<b>Weight</b>	<b>Implementation Rule</b>			<b>Make-up Rule</b>		
	<b>MF</b>	Midterm, Final	65%	It is allowed to have an A4 size handwritten cheat sheet in the exams. Any kind of calculators or communication devices are not allowed.			Marmara University regulations will be followed for make-up exams.		
	<b>H</b>	Homeworks	25%	The deadline for the homeworks is one week after the assignment. Late submission is not accepted. A total of 4 homeworks are assigned.			-		
	<b>P</b>	Project	10%	Project is assigned at the end of the semester. The deadline for the project is 2 weeks after the assignment.			-		
	<b>TOTAL</b>		100%						

<b>Determining Letter Grades</b>	<ul style="list-style-type: none"> <li>The letter grades will be determined based on the midterm and final exams, homeworks and project.</li> <li>In order to determine the letter grade, a curve or catalog based method will be followed based on the total average scores of the students.</li> <li>The final exam score and the total average score of the student must be at least 35 to pass the course.</li> <li>According to Marmara University Undergraduate regulations, the weight of the final exam must be at least 40 out of 100.</li> </ul>					
	Assessment	Midterm	Homeworks	Project	Final	TOTAL
	Weight	25	25	10	40	100
<b>Teaching Method, Student Work Load</b>	<b>Time Applied by Instructor</b>					
	<b>No</b>	<b>Method</b>	<b>Explanation</b>			<b>Hours</b>
	1	Lectures	Lectures are given in class using the board or via presentations. Example questions are solved to enhance the concepts.			14x2=28
	2	Problem Session/ Practice	Problems related to the course topics are solved on the board.			
	3	Laboratory	Experiments are done in the laboratory or theoretical concepts covered during the lectures are practiced using computer exercises.			
	4	Interactive Courses	Questions are asked to students during lectures and they are encouraged to guess the answers (peer learning is also in this category)			
	5	Field Work	Students attend activities outside the campus.			
	6	Midterm	Midterm exam is given during the midterm week.			2
	7	Final	Final exam is given during the final exam week.			2
	<b>Estimated Time to be Allocated by a Student</b>					
	8	Project	The students carry out research about the problem given in the project, design and implement their solution and prepare a report.			1x5=5
	9	Homeworks	The students solve the problems given as homework.			3x2=6
	10	Pre-class learning of Course Material	The students study and learn the new subjects from course materials.			
	11	Review of Course Material	Students review the course subjects from course materials to prepare for the exams and homeworks.			5
12	Office Hour	Students ask questions to the instructor or the assistant during office hours.			2	
<b>Total</b>					<b>50</b>	
<b>Academic Honesty</b>	Violations of scholastic honesty include, but are not limited to cheating, plagiarizing, fabricating information or citations, facilitating acts of dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, or tampering with the academic work of other students.					
	In case academic dishonesty is observed, the first authority is the instructor of the course. The instructor may decide to give the student zero for the homework(s)/lab(s)/exam(s), give the letter grade FF, or may take disciplinary action.					