



## ECTS COURSE INFORMATION FORM

<b>Faculty</b>	<b>Faculty of Engineering</b>
	<b>B.Sc. in Civil Engineering</b> Required
	<b>B.Sc. in Computer Engineering</b> N/A
	<b>B.Sc. in Electrical-Electronics Engineering</b> N/A
	<b>B.Sc. in Industrial Engineering</b> N/A
	<b>B.Sc. in Mechanical Engineering</b> Required

<b>Course Code</b>	COMP 111			
<b>Course Title in English</b>	Computer Programming (MATLAB)			
<b>Course Title in Turkish</b>	Bilgisayar Programlama (MATLAB)			
<b>Language of Instruction</b>	English			
<b>Type of Course</b>	Flipped Classroom			
<b>Level of Course</b>	Undergraduate			
<b>Course Category (by % of Content)</b>	Basic Science	Basic Engineering	Engineering Design	General Education
		70	30	
<b>Semester Offered</b>	Fall			
<b>Contact Hours per Week</b>	Lecture: 2 hours	Recitation: -	Lab: 2 hours	Other:-
<b>Estimated Student Workload</b>	123 hours			
<b>Number of Credits</b>	5 ECTS			
<b>Grading Mode</b>	Standard Letter Grade			
<b>Pre-requisites</b>	None			
<b>Expected Prior Knowledge</b>	None			
<b>Co-requisites</b>	None			
<b>Registration Restrictions</b>	Only Undergraduate Students			
<b>Overall Educational Objective</b>	To understand fundamentals of computer programming and learn how to design and implement computer algorithms to solve basic engineering problems in MATLAB programming language.			
<b>Course Description</b>	This course provides a comprehensive introduction to fundamentals of computer programming and algorithm development. The following topics are covered: algorithms, vectors and matrices, functions, selection statements, loop statements, I/O processes, functions, plotting, structures, scripts and programs in MATLAB programming language.			
<b>Course Description in Turkish</b>	Bu ders bilgisayar programlamanın temelleri ve algoritma geliřtirmenin temelleri konusuna kapsamlı bir giriş saęlamaktadır. Derste işlenen konular arasında: algoritmalar, vektörler ve matrisler, fonksiyonlar, seçim komutları, döngü komutları, I/O süreçleri, grafik çizimi, yapılar, komut dizileri ve programların MATLAB programlama dili kullanılarak öğretilmesi, bulunmaktadır.			
<b>Course Learning Outcomes and Competences</b>	Upon successful completion of the course, the learner is expected to:  1. describe computer programming fundamentals; 2. analyze technical problems and develop basic computer algorithms; 3. construct algorithms on computer programming tools to solve engineering problems; 4. present the results of his/her programming solutions			

Relationship of the Course with the Student Outcomes	Level	Learning Outcome(s)	Assessed by
<b>Student Outcomes</b>	N=None S=Supportive H=High		Exam, Project, HW, Experiment, Presentation, etc.
(1) an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	H	1, 2, 3	Exams
(2) an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors			
(3) an ability to communicate effectively with a range of audiences	S	4	Project
(4) an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts			
(5) an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives			
(6) an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions			
(7) an ability to acquire and apply new knowledge as needed, using appropriate learning strategies			
<b>Prepared by and Date</b> Asst. Prof. Dr. Serap Kirbiz / September 2020			
<b>Semester</b> Fall 2020-2021			
<b>Name of Instructors</b> Asst. Prof. Dr. Serap Kirbiz			
<b>Course Contents</b>	<b>Week</b>	<b>Topic</b>	
	1.	Introduction to MATLAB	
	2.	Vectors and Matrices	
	3.	Fundamentals of Programming	
	4.	Selection Statements	
	5.	Loop Statements-1	
	6.	Loop Statements-2	
	7.	String Vectors	
	8.	Structs and Cell Arrays	
	9.	MATLAB Programs	
	10.	Plotting Techniques	
	11.	File Input/output	
	12.	Basic Statistics and Sorting	
	13.	Advanced Concepts	
	14.	Student Projects	
	15.	Final Exam/Project/Presentation Period	
	16.	Final Exam/Project/Presentation Period	
<b>Required/Recommended Readings</b>	Textbook: MATLAB: A Practical Introduction to Programming and Problem Solving, 3rd Edition, Stormy Attaway, ISBN-13: 978-0124058767 Reference book: Essential MATLAB for Engineers and Scientists, Fifth Edition, Brian Hahn, Daniel Valentine, ISBN-13: 978-0123943989		
<b>Teaching Methods</b>	Lectures/Laboratories/Contact hours/Flipped Learning		

<b>Homework and Projects</b>	Teamwork projects																		
<b>Laboratory Work</b>	13 computer laboratories on programming																		
<b>Computer Use</b>	In laboratories, lab exams and project																		
<b>Other Activities</b>	-																		
<b>Assessment Methods</b>	<table border="1"> <thead> <tr> <th>Types of assessment</th> <th>Number</th> <th>Ratio (%)</th> </tr> </thead> <tbody> <tr> <td>Lab Exams</td> <td>2</td> <td>45</td> </tr> <tr> <td>Quiz</td> <td>3</td> <td>30</td> </tr> <tr> <td>Online Quiz</td> <td>10</td> <td>10</td> </tr> <tr> <td>Project</td> <td>1</td> <td>15</td> </tr> <tr> <td>Total</td> <td></td> <td>100</td> </tr> </tbody> </table>	Types of assessment	Number	Ratio (%)	Lab Exams	2	45	Quiz	3	30	Online Quiz	10	10	Project	1	15	Total		100
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<b>Course Administration</b>	<p><b>Instructor's office:</b> 5<sup>th</sup> Floor  <b>office hours:</b> Monday 14:00-16:00, Thursday 14:00-16:00  <b>email address:</b> kirbiz@mef.edu.tr</p> <p><b>Rules for attendance:</b> Students attending less than 70% of the laboratories and lectures will be graded FZ.</p> <p><b>Missing a midterm:</b> Provided that proper documents of excuse are presented, a make-up exam for lab midterm exams will be provided.</p> <p><b>Missing a final:</b> Faculty regulations.</p> <p><b>A reminder of proper classroom behavior, code of student conduct:</b> YÖK Regulations</p> <p><b>Academic Dishonesty and Plagiarism:</b> YÖK Regulations</p>																		

ECTS Student Workload Estimation	Activity	No/Weeks	Hours			Calculation	Explanation
		No/Weeks per Semester (A)	Preparing for the Activity (B)	Spent in the Activity Itself (C)	Completing the Activity Requirements (D)		
	Lecture	14		2		28	A*(B+C+D)
	Lab	13		2		26	A*(B+C+D)
	Lab Exam	2	10	2		24	A*(B+C+D)
	Quiz	3	2	1		9	A*(B+C+D)
	Online Quiz	10	1	1		20	A*(B+C+D)
	Project	1	15	1		16	A*(B+C+D)
	Total Workload					123	
	Total Workload/25					4.92	
ECTS					5		