COURSE INFORMATION FORM

Faculty	**Faculty of Engineering**	
Program	**B.Sc. in Civil Engineering**	**Elective**
	B.Sc. in Computer Engineering	**Required**
	B.Sc. in Electrical-Electronics Engineering	**Required**
	B.Sc. in Industrial Engineering	**Required**
	B.Sc. in Mechanical Engineering	**Elective**
Semester	**Fall 2017-2018**	

Course Code	COMP 109			
Course Title in English	Computer Programming (Java)			
Course Title in Turkish	Bilgisayar Programlama (Java)			
Language of Instruction	English			
Type of Course	Flipped Classroom/Lecture/Exercise			
Level of Course	Undergraduate			
Course Category (by % of Content)	Basic Science	Basic Engineering	Engineering Design	General Education
	10	50	30	10
Semester Offered	Fall			
Contact Hours per Week	Lecture: 3 hours	Recitation: -	Lab: 2 hours	Other:-
Estimated Student Workload	167 hours per semester			
Number of Credits	6 ECTS			
Grading Mode	Standard Letter Grade			
Pre-requisites	-			
Expected Prior Knowledge	Basic mathematics knowledge			
Co-requisites	None			
Registration Restrictions	Only Undergraduate Students			
Overall Educational Objective	To learn fundamentals of computer programming, how to design and implement computer algorithms to solve basic engineering problems in Java programming language.			
Course Description	This course provides a comprehensive understanding of computer programming. The following topics are covered: Fundamentals of computer programming, Structured program development, Program control, functions, arrays, strings, pointers, file processing and structures.			
Course Description in Turkish	Bu ders, bilgisayar programlamanın kapsamlı bir şekilde anlaşılmasını sağlamaktadır. Aşağıdaki konular işlenmektedir: Bilgisayar programlamanın temelleri, program control, fonksiyonlar, diziler, katarlar, işaretçiler, dosya işleme ve yapılar.			
Course Learning Outcomes and Competences	Upon successful completion of the course, the learner is expected to be able to: 1. understand computer programming fundamentals; 2. analyze the problems and develop basic computer algorithms; 3. create computer programs to solve engineering problems; 4. understand basics of Java programming language.			

Relationship of the Course with the Student Outcomes	Level	Learning Outcome(s)	Assessed by
Program Outcomes	N=None S=Supportive H=High		Exam, Project, HW, Experiment, Presentation, etc.
(a) an ability to apply knowledge of mathematics, science, and engineering	S	2, 3	Exam, CW, HW, Quizzes
(b) an ability to design and conduct experiments, as well as to analyze and interpret data			
(b)-1. an ability to design/develop an experiment by identifying required assumptions, constraints, data collection methods and models			
(b)-2. Implement experimental procedures to conduct an experiment and use engineering judgment to draw conclusions	S	2, 3, 4	Exam, CW, HW, Quizzes
(c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability	S	2, 3, 4	
(d) an ability to function on multidisciplinary teams			
(d)-1. Function effectively on a intradisciplinary team	S	1, 2	CW
(d)-2. Function effectively on a multidisciplinary team	S	1, 2	CW
(e) an ability to identify, formulate, and solve engineering problems	H	2, 3, 4	Exam, CW, HW, Quizzes
(f) an understanding of professional and ethical responsibility			
(g) an ability to communicate effectively			
(g)-1. Communicate effectively with well-organized written documents	S	3	HW, Lab
(g)-2. Communicate effectively verbally with a range of audiences			
(h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context			
(i) a recognition of the need for, and an ability to engage in life-long			
(j) a knowledge of contemporary issues			
(k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice	H	3, 4	Lab

Prepared by and Date	Tuna Çakar, 1 June 2017	
Semester	Spring 2017-2018	
Name of Instructor	Tuna Çakar	
Course Contents	Week	Topic
	1.	Introduction to Programming
	2.	Variables and Data Types I
	3.	Variables and Data Types II
	4.	Control Flow and Conditionals I
	5.	Control Flow and Conditionals II
	6.	Functions I
	7.	Functions II
	8.	Midterm Examination
	9.	Loops I
	10.	Loops II
	11.	Methods and Debugging I

	12.	Methods and Debugging II
	13.	Single-Dimensional Arrays
	14.	Multi-Dimensional Arrays
	15.	Final Examination Period
	16.	Final Examination Period
Required/Recommended Readings	Intro. to Java Programming: Comprehensive Ed. (10th Ed., Pearson, 2014), Daniel Liang.	
Teaching Methods	Flipped classroom. Students work individually for assignments.	
Homework and Projects	Assignments	
Laboratory Work	Laboratory study	
Computer Use	Required	
Other Activities	-	
Assessment Methods	Midterm Exam (15%), Final Exam (25%), Lab Work (10%), In-Class Work (20%), Class Assignments (10%), Lab Assignments (10%), Quizzes (10%)	
Course Administration	Instructor's office: 5th floor Phone number: 0 212 395 37 45 Office hours: After the lecture hours. E-mail address: cakart@mef.edu.tr Rules for attendance: No attendance required. Statement on plagiarism: YÖK Regulations http://3fcampus.mef.edu.tr/uploads/cms/webadmin.mef.edu.tr/4833_2.pdf	

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/Flipped Classroom	14	2	3		70	A*(B+C+D)
Quizzes	10	1.5	0.5		20	
Midterm(s)	1	10	2	0	12	A*(B+C+D)
Assignments (HW)	14	1	2	0	42	A*(B+C+D)
Final Examination	1	20	3	0	23	A*(B+C+D)
Total Workload					167	
Total Workload/25					6.68	
ECTS					**6**	

PROGRAM CRITERIA

1. Breadth in computer engineering practice, analysis and design with 18 required courses, and depth in one or more fields with 4 electives.

2. Knowledge of mathematics, including differential and integral calculus, basic sciences, computer science, and engineering sciences that is necessary for analysis and design of complex electrical and electronic devices, software, and systems containing hardware and software components.

3. Knowledge of probability and statistics, including application to computer engineering; knowledge of advanced mathematics, including differential equations, linear algebra, complex variables, and discrete mathematics.