



T.C. ESKİŞEHİR OSMANGAZİ UNIVERSITY
ENGINEERING AND ARCHITECTURE FACULTY
MECHANICAL ENGINEERING DEPARTMENT

COURSE INFORMATION FORM

SEMESTER Spring

COURSE CODE	151812209	COURSE NAME	FUNDAMENTALS OF COMPUTER PROGRAMING
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SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAGE
2	3	0	0	3	5	COMPULSORY (X) ELECTIVE ()	ENGLISH

COURSE CATEGORY

Basic Science	Basic Engineering	Engineering Subjects [if it contains considerable design, mark with (√)]	Social Science
	X	()	

ASSESSMENT CRITERIA

MID-TERM	Evaluation Type	Quantity	%
	Mid-Term	1	40
	Quiz		
	Homework		
	Project		
	Report		
	Others (.....)		
FINAL EXAM		1	60

PREREQUIEITE(S)	NONE
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COURSE DESCRIPTION	Fundamentals of engineering programing using C++ and introduction to basic numerical analysis exercises.
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COURSE OBJECTIVES	1. to develop familiarity with the C++ environment 2. to develop an understanding of fundamental logic and programming technologies 3. to develop the knowledge of editing, compiling and running a program. 4. to develop knowledge on the computer algorithms and programming proficiency to solve numerical methods used for solving scientific and engineering problems.
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ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	The additives of the course is to be able to solve engineering problems which will be faced during and after engineering education, using advance computation.
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COURSE OUTCOMES	1. Understands fundamental programming logic and programming techniques 2. Familiarity of C++ programming environment 3. Ability of writing programs for engineering problem solving using C++ programming language. 4. Familiarity fundamental numerical analysis techniques..
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TEXTBOOK	Introduction to C++,Excel, MATLAB and Basic Engineering Numerical Methods. Harvey G. Stenger and Charles R Smith ISBN-10: 0136120245 ISBN-12: 9780136120247
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OTHER REFERENCES	www.cplusplus.com www.cprogramming.com
TOOLS AND EQUIPMENTS REQUIRED	Mühendisler için FORTRAN 90/95 Programlama Dili ve Teknikleri, Prof.Dr.Zekeriya Altaç Yrd.Doç.Dr. Mesut Tekkalmaz, T.C. Eskişehir Osmangazi Üniversitesi Yayını MATLAB, for Engineers, Addison-Wesley, Adrian Biran, Moshe Breiner

COURSE SYLLABUS	
WEEK	TOPICS
1	1. Introduction
2	2. Fundamentals of C++ programing, organizing and running a simple C++ program
3	3. Fundamentals of Programing Logic and Algorithm
4	4. Basic C++ concepts and operations
5	5. Input and output data in C++
6	6. Control statements: if, else if, and else blocks
7	7. Control statements: while loops 8. Control statements: do-while and for loops
8	Mid-Term Examination
9	Mid-Term Examination
10	9. Formatted output
11	10. Exercises
12	11. User-defined functions: single-results functions
13	12. User-defined functions: void functions
14	13. Arrays: single indexed (1-D) and double indexed (2-D)
15,16	Final Exam

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.	[x]	[]	[]
2	Ability to determine, define, formulate and solve complex engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.	[]	[x]	[]
3	Ability to design a complex system, a component and/or an engineering process under real life constraints or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.	[]	[]	[x]
4	Ability to develop, select and use modern methods and tools required for engineering applications; ability to effective use of information technologies.	[x]	[]	[]
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.	[]	[]	[x]
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.	[]	[]	[x]
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.	[]	[]	[x]
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.	[]	[x]	[]
9	Understanding of professional and ethical issues and taking responsibility	[]	[]	[x]
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.	[]	[]	[x]
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.	[]	[]	[x]
1:None. 2:Partially contribution. 3: Completely contribution.				

Prepared by:

Date:

Signature(s):