T.C. ESKİŞEHİR OSMANGAZİ UNIVERSITY
ENGINEERING AND ARCHITECTURE FACULTY
ELECTRICAL-ELECTRONICS ENGINEERING DEPARTMENT

COURSE INFORMATION FORM

SEMESTER	Fall

COURSE CODE	151227441-151247441	COURSE NAME	ADVANCED PROGRAMMING

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAGE
7	3	0	2	4	7	COMPULSORY ( ) ELECTIVE (X)	Turkish ( ) English (x)

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

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
MID-TERM	Mid-Term	1	25
	Quiz	3	30
	Homework		
	Project		
	Report		
	Others (Laboratory)	6	10
FINAL EXAM		1	35

PREREQUIEITE(S)	
COURSE DESCRIPTION	Basic Concepts, Classes and Objects, Encapsulation, Operator Overloading, Inheritance, Standard Template Library (STL).
COURSE OBJECTIVES	To introduce basic concepts of the object-oriented programming. To design software by using classes. To be able to use encapsulation, operator loading and inheritance while developing software. To know STL in order to implement software.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	In this course, students will be familiar with object-oriented programming techniques which are used to develop high-quality and large-scale software. They will also learn to model real-world problems. Then, they will learn to choose appropriate tools to implement software which is proposed a solution to these problems.
COURSE OUTCOMES	1) Students will learn basic concepts about the object-oriented programming. 2) Students will learn how to design software by using object-oriented concepts such as class and object. 3) Students will learn and use encapsulation concept. 4) Students will learn why operator overloading is an important concept and how it is implemented. 5) Students will learn and use inheritance concept. 6) Students will learn how to be used Standard Template Library (STL).
TEXTBOOK	Paul Deitel and Harley Deitel, C++ How to Program, 7th Edition, Pearson Education, 2010.
OTHER REFERENCES	Bruce Eckel, Thinking In C++ Vol.1 and Vol.2, Second Edition, Prentice-Hall, 2000.
TOOLS AND EQUIPMENTS REQUIRED	

COURSE SYLLABUS	
WEEK	**TOPICS**
1	Introduction to C++ programming
2	Basic Concepts(References and Reference Parameters, Unary Scope Resolution Operator, Function Overloading and so on)
3	Classes and Objects
4	Classes and Objects
5	Encapsulation
6	Composition
7	Dynamic Memory Management and this Pointer
8	Mid-Term Examination
9	Mid-Term Examination
10	Operator Overloading
11	Inheritance
12	Inheritance
13	Standard Template Library (STL)
14	Standard Template Library (STL)
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 constrains 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: Asist. Prof. Dr. Burak Kaleci **Date:**

Signature(s):