



Меѓународен Универзитет Визион - International Vision University
 Universiteti Ndërkombëtar Vizion - Uluslararası Vizyon Üniversitesi

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SYLLABUS

COURSE NAME	COURSE CODE	SEMESTER	COURSE LOAD	ECTS
SOFTWARE ARCHITECTURE AND DESIGN	4034	7	180	6

Prerequisite(s)	None
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Course Language	Turkish
Course Type	Required
Course Level	First Cycle
Course Lecturer	
Course Assistants	
Classroom	
Extra Curricular Office Hours and Location	Meeting: Consultancy:

Course Objectives	The goal of this course to arm the students with the knowledge needed in architecting effective and maintainable complex software systems of high quality by applying design patterns. Each pattern represents a best practice solution to a software problem in some context. The course will sensitize the student that there is rarely one "right" design and an engineer is faced with a spectrum of possibilities representing tradeoffs. The course will cover the rationale and benefits of design patterns in architecting software systems. The course includes a brief review of object oriented design principles and UML. Programming assignments and a project in the C++ language will provide experience in the use of these patterns.
Course Learning Outcomes	The students who succeeded in this course; <ul style="list-style-type: none"> • Be able to identify the classification of a pattern; • Be able to state the intention of the pattern and show in UML notation; • Be able to identify the participants and describe their responsibilities; • Be able to contrast the difference in intentions between structurally similar patterns; • Be able to apply several appropriate patterns in the design of small programming assignments; • Be able to select appropriate design patterns to improve an existing design;
Course Contents	This course covers the principals behind the software design patterns and their application in constructing software components.

WEEKLY SUBJECTS AND RELATED PREPARATION STUDIES

Week	Subjects	Related Preparation
1	Introduction to Design Patterns	Related Chapters of Course Sources
2	A refresher on Object Oriented Design and UML.	Related Chapters of Course Sources
3	Iterator Pattern (Behavioral)	Related Chapters of Course Sources
4	Composite Pattern (Structural)	Related Chapters of Course Sources
5	Command Pattern (Behavioral)	Related Chapters of Course Sources
6	Factory and Abstract Factory (Creational)	Related Chapters of Course Sources
7	Mid-term Exam	Related Chapters of Course Sources
8	Singleton Pattern (Creational)	Related Chapters of Course Sources
9	Facade Pattern (Structural)	Related Chapters of Course Sources
10	Adapter Pattern (Structural)	Related Chapters of Course Sources
11	Template Pattern (Structural)	Related Chapters of Course Sources
12	Observer Pattern (Behavioral)	Related Chapters of Course Sources
13	Visitor Pattern (Behavioral)	Related Chapters of Course Sources
14	Review	Related Chapters of Course Sources
15	Final Exam	Related Chapters of Course Sources

ECTS / WORKLOAD TABLE

Presentation / Seminar			
Hours for off-the-classroom study (Pre-study, practice)	14	3	42
Midterm Exam	1	12	12
Final examination	1	14	14
Total Work Load			
ECTS		6	

GENERAL PRINCIPLE RELATED WITH COURSE

Dear students,

In order to be included, learn and achieve full success that you deserve in the courses you need to come well prepared by reading the basic and secondary textbooks. We are expecting from you carefully to obey to the course hours, not to interrupt the lessons unless is very indispensable, to be an active participant on the courses, easily to communicate with the other professor and classmates, and to be interactive by participating to the class discussions. In case of unethical behavior both in courses or on exams, will be acting in framework of the relevant regulations. The attendance of the students will be checked in the beginning, in the middle or at the end of the lessons. Throughout the semester the students who attend to all lectures will be given 15 activity-attendance points in addition to their exam grades.

SOURCES

COMPULSORY LITERATURE		
No	Name of the book	Author's Name, Publishing house, Publication Year
1	Yazılım Mimarının El Kitabı C++, Java ve C# ile	Aykut Taşdelen, Pusula Yayıncılık,
2		
3	Design patterns: Elements of Reusable ObjectOriented Software	E. Gamma, R. Helm, R. Johnson and J. Vlissides. AddisonWesley. 1995.Okutman notları ve materyalleri

1		
2		
3		

EVALUATION SYSTEM

Underlying the Assessment Studies	NUMBER	PERCENTAGE OF GRADE
Attendance/Participation	15	%10
Project / Event	1	%20
Mid-Term Exam	1	%35
Final Exam	1	%35
TOTAL	17	%100

ETHICAL CODE OF THE UNIVERSITY

In case of the students are cheating or attempt to cheat on exams, and in the case of not to reference the sources used in seminar studies, assignments, projects and presentations, in accordance to the legislations of the Ministry of Education and Science of Republic of Macedonia and International Vision University, will be applied the relevant disciplinary rules. International Vision University students are expected never to attempt to this kind of behavior.