

# **COURSE SYLLABUS**

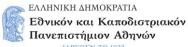


INSTITUTION	NATIONAL AND KAPODISTRIAN UNIVERSITY OF ATHENS										
SCHOOL											
SCHOOL	3CHOOL (	SCHOOL OF SCIENCE									
DEPARTMENT	INFORMATICS AND TELECOMMUNICATIONS										
COURSE LEVEL	UNDERGRADUATE										
COURSE TITLE	Software Engineering										
COURSE CODE	ΥΣ09		Semester 8		8	ECT	rs	6	6		
TEACHING HOURS per week	THEORY	3	SEMINA	R.	1	LAB	BORATO	RY			
	Select one of the following and delete the rest Electives (ΠΜ)										
COURSE TYPE	K	E1	E2	<b>E3</b>	E4		E5	E	6		
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URL  EXPECTED PRIOR  KNOWLEDGE/ PREREQUISITES	A  Fill the tab Engineeri Elective S  https://ed	ole as in the ng) / Spe pecializat class.uoa.	e curriculum cialization tion (E)	B n: Tra Com s/DI4	ck (A-Co pulsory	mput	ter Scie	nce,	B- Co		

# **COURSE CONTENT**

The course offers an introduction to the field of Software Engineering, highlighting the various software design, quality and management issues that occur during the development of large software projects, while presenting the current state of the art in addressing these issues. Specifically, the course covers software lifecycle phases and their management methodologies, focusing on (a) the agile methodology in general and Scrum in particular, (b) the DevOps methodology and specifically the issues underlying version control, build automation and test automation. The course also deals with software design and architecture, discussing analysis and modeling of requirements, object-oriented design and architectural patterns, emphasizing the architectural choices that arise from the CAP theorem. Finally, the course also presents the latest techniques used in the development of Web-based user interfaces.

# KH ΔΗΜΟΚΡΑΤΙΑ COURSE SYLLABUS TO KATTORIGHTOLOGYÓN





# **STUDENT LEARNING OBJECTIVES**

Teaching-Learning Goals-Expected Learning Outcomes

Upon successful completion of the course the student will be able to:

- Explain the software life-cycle, its phases and the methodologies used to manage them.
- Describe, classify, model and analyze software requirements.
- Classify, compare and/or select the basic design and architectural patterns that build a complex software application.
- Design, specify and develop large software using best practices.
- Organize, manage and evaluate the tasks required to build a large software application.

TEACHING AND LEARNING METHODS - ASSESSMENT					
TEACHING METHOD	In Class (Face to Face)				
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Learning process supported by the Announcements, Documents, Text Discussions).  Email communication.  Live transmission of lectures.  Ability to track recorded lectures.  Utilization of software code repos laboratory and team projects.	s, Student teams,			
TEACHING ORGANIZATION  Describe in detail the way and methods of teaching: Enhanced Lectures, Online Lectures, Seminars,					
Tutorial, Laboratory, Laboratory Exercise	Activity	<b>Student Workload</b> (hours)			
Laboratory Exercise, Study & analysis of literature,	Lectures	52			
Practice (Positioning),	Laboratory	13			
Interactive teaching,	Team project (5-7 students)	60			
Developing a project, Individual / group work	Individual study	25			
Telework (reference to tools) etc.	Total	150			
Details of the student's study hours for each learning activity and hours of non-guided study are shown to ensure that the total workload at the semester corresponds to the ECTS					

#### **COURSE SYLLABUS**



#### **ASSESSMENT OF STUDENTS**

Description of the assessment process

Assessment Methods, Formative or Concluding, Multiple Choice Test, Quick Response Questions, Test Development Questions, Problem Solving, Written Work, Report / Report, Oral Examination, Public Presentation, Laboratory Work, Other / Other

Fully defined evaluation criteria are mentioned and if and where they are accessible to students.

The written examination contains multiple choice tests, quick response questions and a test development – problem solving question. The team project involves group work with intermediary milestones that receive direct feedback from the instructor as well as a public presentation at its completion

presentation at its completion.							
Assessment methods	Number	Percentage					
Written examination	1	50%					
Team project	2	50%					

#### LITERATURE AND STUDY MATERIALS / READING LIST

- Software Engineering: Theory and Practice, 2<sup>nd</sup> Edition, PFLEEGER, Kleidarithmos publishing (in Greek)
- Software Engineering, 8<sup>th</sup> Edition, SOMMERVILLE, Kleidarithmos publishing (in Greek)
- Software Engineering, 8th Edition, PRESSMAN, Tziola publishing (in Greek)

The course also offers an extended reading list available at its website.