1. **GENERAL**

SCHOOL	ENGINEERING
DEPARTMENT	PRODUCT AND SYSTEMS DESIGN ENGINEERING
LEVEL OF STUDIES	UNDER GRADUATE
COURSE CODE	3101

COURSE CODE	3101	**SEMESTER**	5th

COURSE TITLE	**DESIGN OF INFORMATION SYSTEMS**

INDEPENDENT TEACHING ACTIVITIES *if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	**WEEKLY TEACHING HOURS**	**CREDITS**
Lectures	**3**	**6**
Laboratory		
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).		

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	Special background
PREREQUISITE COURSES:	
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	GREEK/ENGLISH
COURSE DELIVERED TO ERASMUS STUDENTS	YES
MODULE WEB PAGE (URL)	https://eclass.uowm.gr/courses/MRE252

2. **LEARNING OUTCOMES**

Learning outcomes
This course introduces methods and techniques used today for the development of large and complex Information Systems (IS), in addition to specific software technologies. In this context, a systematic overview of the process is presented, which includes the phases of analysis, design and implementation of an IS, and also the specifics and difficulties of the process are highlighted. Emphasis is placed on the object-oriented view of an IS and the Unified Modelling Language (UML) is presented as the standard language for object-oriented description, analysis and design of Information Systems. Upon successful completion of the course, the student should be able to: • Document the requirements definition at the beginning of an IS project. • Conduct analysis of requirements in order to define the specifications of an IS. • Describe the operating model and the behavioural model of an IS with UML diagrams. • Design the structure of an IS by using UML objects and diagrams.
General Skills
This course aims to give students the necessary theoretical background for the analysis of

requirements for an IS, operational and behavioural model representation and analysis for design specifications of an IS, and also the design specification of an IS, all with UML diagrams.

3. COURSE CONTENTS

- Introduction to system analysis and design
- Identification and analysis of requirements
- Functional modeling with UML diagrams
- Structural modeling with UML class diagrams
- Behavior modeling
- From analysis to design
- Design of classes and methods
- Implementation, testing and maintenance

4. TEACHING METHODS - ASSESSMENT

MODE OFDELIVERY	1. THEORY In class, face to face
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY	- Use of appropriate software - Video and slide presentations via projector - Support of teaching process via the electronic platform e-class
TEACHING METHODS	<table><tr><td>*Activity*</td><td>*Semester workload*</td></tr><tr><td>Lectures</td><td>50</td></tr><tr><td>Homework</td><td>50</td></tr><tr><td>Non-directed study</td><td>50</td></tr><tr><td>Course total</td><td>**150**</td></tr></table>

ASSESSMENT METHODS	1. (60%) Final written exam which includes:
	  i. Short-answer questions
	  ii. Multiple choice questions
	  iii. Problem solving
	
	2. (40%) Homework

5. ATTACHED

- Suggested bibliography:
- **Alan Dennis, Barbara Haley Wixom, David Tegarden, 2010, Ανάλυση και Σχεδιασμός Συστημάτων με τη UML 2.0: Μια αντικειμενοστρεφής προσέγγιση, 3η Αμερικάνικη Έκδοση, Εκδόσεις Κλειδάριθμος ΕΠΕ, ISBN: 978-9604613892**

- **Αλέξανδρος Ν. Χατζηγεωργίου, 2005, Αντικειμενοστραφής Σχεδίαση: UML, Αρχές, Πρότυπα και Ευρετικοί Κανόνες, 1η Έκδοση, Εκδόσεις Κλειδάριθμος ΕΠΕ, ISBN: 960-2098821**