‘MSC ON INFORMATICS ENGINEERING’

Department of Informatics Engineering

HMU

Course title & identity

Title: Advanced Software Engineering

Objective(s)

This course provides all the necessary knowledge and skills to students in order to:

- Use Modeling Languages such as UML.
- Use CASE tools for analyzing and designing software,
- Be able to design software systems taking into consideration Object Oriented, Real Time & Critical system specifications & constraints,
- Be able to confirm, verify and validate software,
- Become familiar with the characteristics of Critical systems inspection,
- Be able to administer the software evolution process,

Course title & identity

Advanced Software Engineering

Focus on

- Information Systems
- Computer science

Aims to present the **principals**, **techniques**, and **methods** for professional and systematic software development.

Tools - Languages

- Unified Modeling Language (UML),
- CASE tools like Visual Paradigm & Rational Rose and programming languages like JAVA.

Members of stuff

Dr. Vidakis Nikolas

Teaching Approach

- Lectures (3 hours) : (**YES**/NO)
  - Lectures are supported by PowerPoint slides, scientific papers etc. Whiteboard exercises for one hour a week
- Laboratory classes (2 hours) : (**YES**/NO)
  - Weekly
- Course Time and Place: Tuesdays 9-14, Lab 5PK

Teaching Approach

- Students form work groups of 2-3 members
- Group Assignments: 5-6 group assignments
  - All assignments assemble the final group project
  - Final assignment is engaged with the aggregation of individual assignments to a final group project
- Project work: (**YES**/NO)
- Med-term project assessment (**YES**/NO)
- Final written exam assessment (YES/**NO**)
- Final project assessment (**YES**/NO)

Teaching Approach

Final project assessment

	15% ΠΑΡΟΥΣΙΑΣΗ					55% ΑΝΑΦΟΡΑ							15% 8-ΣΕΛΙΔΟ ΙΕΕΕ					15% Υλοποίηση Mock Up σε Google-Cloud				Συμμετοχή Σπουδαστών στην Παρουσίαση των Project (αρ. Ερωτήσεων προς άλλες ομάδες)										
	Quality of Content	Quality of Presentation	Presented within Time Limits	Response to Questions from Audience	ΣΥΝΟΛΟ	Quality of Content	Quality of writing	Quality of Presentation	Creativity & Independence	Cooperation among team members	References	ΣΥΝΟΛΟ	Quality of Content	Quality of writing	Quality of State of the Art Section	References	ΣΥΝΟΛΟ	Features	Usability	Creativity	ΣΥΝΟΛΟ	Βλαχάκης	Κούνουπας	Χαραλαμπάκης	Κληρονομάκης	Ορφανουδάκης	Μαλλιωτάκης	Κτιστάκης	Κοζάκη	Σταμούλιας	Λελεδάκης	Παπαδόπουλος
	50%	30%	10%	10%	100%	40%	20&	10%	10%	10%	10%	100%	40%	20%	20%	20%	100%	60%	30%	10%	100%										
P-nets																																
ιστάκης	9,2	9	10	9		9	9	8	9	10	0		9	9	5	9,5		10	10	10			2	1	1		1				
ζάκη	9,2	9,5	10	8,8		9	9	8	9	10	0		9	9	5	9,5		10	10	10											
Info Kiosk																		*Άριστα 9 λόγο καθυστερημένης Υποβολής*														
ύνουπας	8	10	10	9		8	8	8	9	9	0		8	8	5	5		8,5	8,5	8,5				2	2			2	1		1	
αμούλιας	8	8	10	9		8	8	8	9	9	0		8	8	5	5		8,5	8,5	8,5												
φανουδάκης	8	6	10	8		8	8	8	9	9	0		8	8	5	5		8,5	8,5	8,5												
Music Net																																
αχάκης	8,7	8,8	10	9		8,5	8,5	8,5	9	8	0		8,5	8,5	9	10		9,2	9,2	9,2			1	2			1	1	1	1		1
ηρονομάκης	8,7	8,5	10	9		8,5	8,5	8,5	9	8	0		8,5	8,5	9	10		9,2	9,2	9,2												
λεδάκης	8,7	8	10	9		8,5	8,5	8,5	9	8	0		8,5	8,5	9	10		9,2	9,2	9,2												
mart Home System													*Άριστα 9 λόγο καθυστερημένης Υποβολής*																		
αλλιωτάκης	8,5	8,2	10	9		8	7,5	8	9	9	0							10	10	10		1	1			1		1	1	1	1	
παδόπουλος	8,5	8	10	9		8	7,5	8	9	9	0							10	10	10												
ραλαμπάκης	8,5	8	10	9		8	7,5	8	9	9	0							10	10	10												

Specific details

- Indicative past Year project Titles
  - Music-X a Multi Music Platform
  - eBIONets: Electronic Organization for supporting virtual alliances related to the production of organic products
  - Smart Home System to Support Independent and Safe Living for Elderly People
  - Αρχιτεκτονική ανάλυση, μελέτη απαιτήσεων και σχεδίαση συστήματος Info Kiosk
- Indicative Bibliography

1. Ian Sommerville: Software Engineering (8th edition), Addison-Wesley, May 25, 2006
2. Pfleeger Shari Lawrence, Τεχνολογία λογισμικού Θεωρία και Πράξη Α' & Β' ΤΟΜΟΣ, Κλειδάριθμος, 2003
3. Grady Booch, James Rumbaugh, The Unified Modeling Language User Guide (2nd Edition), Pearson Education Limited, 2005
4. Grady Booch, Robert A. Maksimchuk, J. Newkirk et.al., Object Oriented Analysis and Design with Applications, Pearson Education Limited, 2007
5. Martin Fowler, UML Distilled: A Brief Guide to the Standard Object Modeling Language (3rd Edition) (The Addison-Wesley Object Technology Series) (Paperback), Pearson Education Limited, 2003
6. Alan Dennis, Systems Analysis & Design with UML 2nd Edition with Visio 2007 Set, John Wiley and Sons Ltd, 2008
7. Ivar Jacobson, Grady Booch, James Rumbaugh: The Unified Software Development Process, Addison-Wesley, 1999
8. Ivar Jacobson, Magnus Christerson, Patrik Jonsson, Gunnar Oevergaard: Object-Oriented Software Engineering (A use case Driven Approach), Addison-Wesley, 1995
9. Rational Rose Home Page: http://www.rational.com/products/rose/index.jtmpl
10. Object Management Group – UML: http://www.uml.org
11. The Carnegie Mellon Software Engineering Home: http://www.sei.cmu.edu/sei-home.html

Applicant profile

- Pre-requisites
  - Basic knowledge of SE
  - Basic knowledge of HCI
  - Basic knowledge of DB
- Skills
  - Basic UML skills
  - Basic OOD
- Expected weekly workload
  - Apart from the 5 course hours an extra 4-6 hours are anticipated depending on the background of the student.
  - Workload is expected to reach its peak at the end of the semester when students are to complete and present their projects.
  - Student with little or no prior knowledge of: CASE tools (e.g. Rational Rose) and modelling Languages (e.g. UML) will have a significantly increased workload