Universidad de Puerto Rico - Mayagüez Campus
College of Engineering
Department of Computer Science and Engineering

Course: Introduction to Software Engineering

Course Code: INSO 4101/ICOM4009/COMP4009

Number of Credits: 3

Contact period: 3 hours lecture/week

Office hours: LV 11:30am-12:20pm, LW 1:30pm-2:30pm in CH-508D, or any time in email, hangouts, jitsi, ...

Course Description:

English: Techniques used during the software development cycle; specification, design, testing, documentation and maintenance. Use of a multi-paradigm specification language in the design and implementation of a software project.

Spanish: Técnicas usadas durante el ciclo de desarrollo de software; especificación, diseño, prueba, documentación y mantenimiento. Uso de un lenguaje de especificación multiparadigma en el diseño e implementación de un proyecto de software.

Pre/Co-requisites and other requirements: ICOM 4035

Course Objectives:
Provide the students with analysis, design, coding, testing and documentation skills and techniques necessary in the software development process. Learn to use various specification languages (UML, CSP, RSL, ...) in requirements specification and design.

Instructional Strategies: conference, computation

Minimum or Required Resources Available:
Students will use the Departmental computer laboratories to complete course projects.

Course thematic outline and allocated times:

topic	contact hours
Introduction to the course	1
The Software Lifecycle	3
Estimation: Cost, Effort and Agenda	2
Planning and Tracking	3
Risk Analysis and Management	2
User Interface Design	1
The UML Language	4
Requirements Analysis and Specification	6
Design Principles and Concepts, System Design	6
Testing	2
Exams, Lab Sessions and Discussions	15
total	45

Sequence of textbook chapters discussed:

contact hours	chapter(s)	chapter title(s)
1	SE-V3:1	The Triptych SE Paradigm
2	I2PSP	Time Mangement, Planning, Scheduling, Tracking
2	SE-V3:2	Documents
2	SE-V3:5	Phenomena and Concepts
1	SE-V1:8	Algebras
1	SE-V1:9	Mathematical Logic
2	SE-V1:21	CSP Channels
3	SE-V3:8	Overview of Domain Engineering
	SE-V3:11	Domain Facets
	SE-V3:16	Domain Engineering Process Model
2	SE-V2:10	Modularisation (Objects)
2	SE-V2:11	Automata and Machines
1	SE-V2:12	Petri Nets
2	SE-V2:13	Message Sequence Charts
1	SE-V2:14	Statecharts
1	SE-V3:17	Overview of Requirements Engineering
2	SE-V3:19	Requirements Facets
	SE-V3:24	Requirements Engineering Process Model
1	SE-V3:25	Hardware/Software Codesign
	SE-V3:26	Software Architecture Design
	SE-V3:30	Computing Systems Design Process Model
	SE-V3:31	The Triptych Development Process Model
1	SE-V3:32	Finale
1	tbd	User Interface Design
1	tbd	Risk Analysis

Grading System:
☒Quantifiable (letters) ☐ Not Quantifiable

Evaluation Strategies:

Midterm 1	15%
Midterm 2	15%
Final exam	15%
Homework	45%
Learning journal	5%
Participation in class	5%

Grading system:

A	B	C	D	F
90% - 100%	80% - 89%	65% - 79%	60% - 64%	0% - 59%

According to Law 51
Students will identify themselves with the Institution and the instructor of the course for purposes of assessment (exams) accommodations. For more information please call the Student with Disabilities Office which is part of the Dean of Students office (Office #4) at (787)265-3862 or (787)832-4040 extensions 3250 or 3258.

Academic Integrity
The University of Puerto Rico promotes the highest standards of academic and scientific integrity. Article 6.2 of the UPR Students General Bylaws (Board of Trustees Certification 13, 2009-2010) states that academic dishonesty includes, but is not limited to: fraudulent actions; obtaining grades or academic degrees by false or fraudulent simulations; copying the whole or part of the academic work of another person; plagiarizing totally or partially the work of another person; copying all or part of another person answers to the questions of an oral or written exam by taking or getting someone else to take the exam on his/her behalf; as well as enabling and facilitating another person to perform the aforementioned behavior. Any of these behaviors will be subject to disciplinary action in accordance with the disciplinary procedure laid down in the UPR Students General Bylaws.

Bibliography:

- Dines Bjørner, *Software Engineering, Vol 1*, Springer, 2006. (short SE-V1)
- Dines Bjørner, *Software Engineering, Vol 2*, Springer, 2006. (short SE-V2)
- Dines Bjørner, *Software Engineering, Vol 3*, Springer, 2006. (short SE-V3)
- Watts S. Humphrey, *Introduction to the Personal Software Process,* Addison-Wesley Professional, 1996 (short I2PSP)