

INSO 4115 - Course Syllabus

1. General Information:

Alpha-numeric codification: INSO 4115
Course Title: Software Engineering Requirements
Number of credits: 3
Contact Period: 3 hours of lecture per week

2. Course Description:

English: Techniques used to determine the requirements of a complex software system: specification standards, the UML language, validation, specification management tools, and quality metrics. Elicitation and development of software system requirements. Discussion of ethical issues arising during requirements elicitation.

Spanish: Técnicas utilizadas para determinar los requisitos de un sistema complejo de software: estándares de especificación, lenguaje UML, validación, herramientas para manejo de especificaciones y métricas de calidad. Recopilación y desarrollo de requisitos de sistemas de software. Discusión de aspectos éticos que surgen durante la recopilación de requisitos.

3. Pre/Co-requisites and other requirements:

Prerequisites: INSO 4101 or ICOM 4009

4. Course Objectives:

Students will learn the techniques used to gather the requirements for a software system, and will put in use these skills by completing a semester long project.

5. Instructional Strategies:

conference discussion computation laboratory
seminar with formal presentation seminar without formal presentation workshop
art workshop practice trip thesis special problems tutoring
research other, please specify:

6. Minimum or Required Resources Available:

Students will use the Departmental computer laboratories to complete course projects.

7. Course time frame and thematic outline

Outline	Contact Hours
Introduction	1
Requirements engineering process	3
Requirements analysis	6
Requirements elicitation	12
Requirements specification	10
Scope and change management	4
Quality metrics	3
Validation and verification	2
Exams and discussions	4
Total hours: (equivalent to contact period)	45

8. Grading System

Quantifiable (letters) Not Quantifiable

9. Evaluation Strategies

	Quantity	Percent
<input checked="" type="checkbox"/> Exams	2	35%
<input checked="" type="checkbox"/> Final Exam	1	25%
<input type="checkbox"/> Short Quizzes		
<input type="checkbox"/> Oral Reports		
<input type="checkbox"/> Monographies		
<input type="checkbox"/> Portfolio		
<input checked="" type="checkbox"/> Projects	1	40%
<input type="checkbox"/> Journals		
<input type="checkbox"/> Other, specify:		
TOTAL:		100%

10. Bibliography:

1. Karl E. Wiegers and Joy Beatt, *Software Requirements*, 3rd ed., Microsoft Press, 2013.
2. Dean Leffingwell, *Agile Software Requirements: Lean Requirements Practices for Teams, Programs, and the Enterprise*, Addison-Wesley, 2011.

3. Karl Wiegers, *More About Software Requirements: Thorny Issues and Practical Advice*, Microsoft Press 2010.
4. Elizabeth Hull, Ken Jackson, and Jeremy Dick, *Requirements Engineering*, 3rd ed., Springer, 2011.
5. Association for Computing Machinery, *Software Engineering Code of Ethics and Professional Practice*, 1999, <http://www.acm.org/about/se-code>
6. Yingxu Wang, *Software Engineering Foundations: A Software Science Perspective*, CRC Press, 2007. [Classic Book] <http://dx.doi.org/10.1201/9780203496091>. [Available via CRCnetBASE, UPRM General Library Databases]
7. A. Rashid, J. Weckert, and R. Lucas, "Software Engineering Ethics in a Digital World," *Computer*, vol. 42, no. 6, pp. 34–41, 2009. <http://dx.doi.org/10.1109/MC.2009.200> [Available via IEEE Xplore, UPRM General Library Databases]

11. Course Outcomes

Upon completion of this course the student will be able to:	Program Student Outcomes Impacted
1. Work as part of a team to develop effective functional and other technical requirements that are complete, concise, correct, consistent, testable and unambiguous	5
2. Select the appropriate requirements elicitation techniques to identify requirements for a new software system	1
3. Design software prototypes and minimum viable products to validate requirements, flesh out hidden requirements and clarify fuzzy functional requirements	2
4. Effectively analyze requirements and prioritize according to user needs	1
5. Create an industry-standard requirements specification to communicate requirements to a broad set of stakeholders.	3
6. Use modern software engineering tools to specify, validate, document and manage changes to requirements.	6

12. 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.

13. 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.—