Course Unit	Software Engineering II			Field of study	Information Systems								
Bachelor in	Informatics and Communications			School	School of Public Management, Communication and Tourism								
Academic Year	2021/2022	Year of study	2	Level	1-2	ECTS credits	6.0						
Type	Semestral	Semester	2	Code	9188-320-2201-00-21								
Workload (hours)	162	Contact hours	T -	TP 30	PL 30	TC -	S -	E -	OT 20	O -			

T - Lectures; TP - Lectures and problem-solving; PL - Problem-solving, project or laboratory; TC - Fieldwork; S - Seminar; E - Placement; OT - Tutorial; O - Other

Name(s) of lecturer(s): Vítor José Domingues Mendonça

Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:
1. Understand the application development process;
2. Know the project management's phases involved in software development;
3. Know the models applied to application development;
4. Analyse and understand requirements for application development;
5. Modeling software systems from different perspectives (functional, data and behavior); Modeling Web-based and multimedia systems;
6. Make use CASE tools.

Prerequisites

Before the course unit the learner is expected to be able to:
Not applicable

Course contents

- Software Development Project Management
- Software Development Project Planning
- Models for the Software Development Process
- Requirements Analysis
- Software Modeling - UML

Course contents (extended version)

1. Contextualization of Software Engineering
2. Software Development Project Management
3. Software Development Project Planning
4. Models for the Software Development Process
   - Zachman Framework
   - Rational Unified Process
   - SCRUM
5. Requirements Analysis
6. Object Oriented Software Engineering
   - UML – Unified Modeling Language
   - Diagrams: Structure Diagrams; Behavior diagrams
7. Analysis of Web Systems and Multimedia
8. CASE tools

Recommended reading

1. Mendonça, V. (2022). Sebenta da disciplina de Engenharia de Software. IPB, EsACT.
2. Maalej, W. , Thurimella, A. (2013). Managing Requirements Knowledge. Springer. ISBN: 978-3642344183
3. Pressman, R. Maxim, B. (2015). Software Engineering: A Practitioner's Approach. 8th Edition. McGraw-Hill. ISBN: 978-0078022128
4. Thayer, R. , Dorfman, M. (2012). Software Engineering Essentials. Volume I, Volume II e Volume III. Software Management Training. ISBN: 978-0985270704; 978-0985270711; 978-0985270728
5. Sommerville, I. (2016). Software Engineering. Pearson Education Limited. ISBN: 978-0133943030

Teaching and learning methods

Contact hours: Theoretical exposition of the concepts and application of the knowledge in the resolution of exercises and practical cases; discussion of case studies; and guidance in the use of CASE tools.
Non-presence hours: Practical work (individual or group); Research, analysis and study of documentation; Exploration and tools use.

Assessment methods

1. Distributed Evaluation - (Regular, Student Worker) (Final, Supplementary, Special)
   - Case Studies - 20% (Continuous Evaluation: presence and effort on project resolution are considered.)
   - Practical Work - 40% (Practical group work: Structured Modeling of an Information System. (Evaluation Minimum mark>= 8/20))
   - Development Topics - 10% (Group Work: Thematic Research (Evaluation Minimum mark>= 8/20).)
   - Final Written Exam - 30% (Individual evaluation of skills and knowledge acquired. (Evaluation Minimum mark>= 8/20))
2. Not Aplicable - (Student Worker) (Final, Supplementary, Special)
   - Laboratory Work - 20%
   - Practical Work - 40%
   - Development Topics - 10%
   - Final Written Exam - 30%

Language of instruction

1. Portuguese
2. Portuguese, with additional English support for foreign students.

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Electronic validation

Vítor José Domingues Mendonça	Vítor José Domingues Mendonça	Elisabete da Anunciacao Paulo Morais	Luisa Margarida Barata Lopes
07-03-2022	10-03-2022	10-03-2022	12-03-2022

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