

Course Unit	Software Engineering	Field of study	Computer Science
Bachelor in	Multimedia	School	School of Public Management, Communication and Tourism
Academic Year	2023/2024	Year of study	1
Type	Semestral	Semester	2
Workload (hours)	162	Contact hours	T - 60 TP - 60 PL - TC - S - E - OT - O -
		Level	1-1
		ECTS credits	6.0
		Code	9213-656-1201-00-23

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) Jose Manuel Seixas Alves

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. final 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 >= 7/20))
 - Development Topics - 10% (Group Work: Thematic Research (Evaluation Minimum mark >= 7/20).)
 - Final Written Exam - 30% (Individual evaluation of skills and knowledge acquired. (Evaluation Minimum mark >= 7/20))
2. final evaluation - (Student Worker) (Final, Supplementary, Special)
 - Laboratory Work - 20% (Demonstration of skills acquired in the use of CASE Tools.(Evaluation Minimum mark >= 7/20))
 - Practical Work - 40% (Practical group work: Structured Modeling of an Information System. (Evaluation Minimum mark >= 7/20))
 - Development Topics - 10% (Group Work: Thematic Research (Evaluation Minimum mark >= 7/20).)
 - Final Written Exam - 30% (Individual evaluation of skills and knowledge acquired. (Evaluation Minimum mark >= 7/20))

Language of instruction

Portuguese

Electronic validation

Jose Manuel Seixas Alves	Ana Lucia Jesus Pinto	Anabela Neves Alves de Pinho	Luisa Margarida Barata Lopes
07-05-2024	08-05-2024	09-05-2024	15-05-2024