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| 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 | 2022/2023 | Year of study | 2 | Level | 1-2 |
| Type | Semestral | Semester | 2 | ECTS credits | 6.0 |
| | | | Code | 9188-320-2201-00-22 | |
| 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) 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. 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 Applicable - (Student Worker) (Final, Supplementary, Special)
 - Laboratory Work - 20%
 - Practical Work - 40%
 - Development Topics - 10%
 - Final Written Exam - 30%

Language of instruction

Portuguese

Electronic validation

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|--------------------------|-------------------------------|--------------------------------------|------------------------------|
| Jose Manuel Seixas Alves | Vítor José Domingues Mendonça | Elisabete da Anunciacao Paulo Morais | Luisa Margarida Barata Lopes |
| 15-03-2023 | 26-04-2023 | 26-04-2023 | 02-05-2023 |