Course guide
270502 - DGSI - Development and Management of Information Systems

Last modified: 03/02/2025

Unit in charge: Barcelona School of Informatics
Teaching unit: 747 - ESSI - Department of Service and Information System Engineering.

Degree: MASTER'S DEGREE IN INFORMATICS ENGINEERING (Syllabus 2012). (Compulsory subject).

Academic year: 2024 **ECTS Credits:** 6.0 **Languages:** Catalan, Spanish

LECTURER

Coordinating lecturer: MARC ALIER FORMENT

Others: Segon quadrimestre:
MARC ALIER FORMENT - 10

PRIOR SKILLS

The previous capabilities required by the master MEI.

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
CTE1. Capability to model, design, define the architecture, implement, manage, operate, administrate and maintain applications, networks, systems, services and computer contents.
CTE3. Capability to secure, manage, audit and certify the quality of developments, processes, systems, services, applications and software products.
CTE5. Capability to analyze the information needs that arise in an environment and carry out all the stages in the process of building an information system.

Generical:
CG1. Capability to plan, calculate and design products, processes and facilities in all areas of Computer Science.
CG2. Capacity for management of products and installations of computer systems, complying with current legislation and ensuring the quality of service.
CG3. Capability to lead, plan and supervise multidisciplinary teams.
CG6. Capacity for general management, technical management and research projects management, development and innovation in companies and technology centers in the area of Computer Science.
CG7. Capacity for implementation, direction and management of computer manufacturing processes, with guarantee of safety for people and assets, the final quality of the products and their homologation.
CG9. Capacity to understand and apply ethical responsibility, law and professional deontology of the activity of the Informatics Engineering profession.

Basic:
CB8. Capability to communicate their conclusions, and the knowledge and rationale underpinning these, to both skilled and unskilled public in a clear and unambiguous way.

TEACHING METHODOLOGY

The course is divided into different types of sessions. But all sessions will be held in the same classroom. Theory sessions. These are sessions where the teacher presents the main concepts of the issues that form the subject content so exhibition and raising some questions to students to encourage their participation. In addition to the concepts, the teacher will encourage students to study articles relacionats.Sessions presentations. These sessions are based on public exhibitions of students' own articles related to topics covered in the course. After each presentation, time will be devoted to a discussion on the topic treated with the participation of all students and the teacher's guide. The goal is to discuss the main points of the article, the subject treated and further discuss possible points of dispute. Expected active participation by all estudiants.Sessions laboratory. These sessions work plan informacióNota Systems: The teaching method used in the course requires students to acquire new knowledge independently using bibliographic sources that are normally in English. It is essential that students have a sufficient level of English without much difficulty assimilating this literature (technical).

LEARNING OBJECTIVES OF THE SUBJECT

1.To acquire an overview of what an information system is
2.To understand the need to assess the quality of information systems and to know existing strategies and benchmarks for quality assessment
3.To be able to develop an Information Systems Plan
4.To know how to elicit rquisites for diferents components of an infomration system
5.Know how to define business processes in BPMN and identify the requirements for the IS
6.To know the diferent software architectures applied to information systems and to know about its adecuacy in diferent cases
7.To know the fundamentals of software product line engineering and the contexts in which they are useful
8.To know some principles and strategies for evaluating the usability in information systems
9.To understand the differences between agile development methodologies and traditional ones and to be able to choose wich in a given case

STUDY LOAD

Type	Hours	Percentage
Hours medium group	12,0	8.00
Hours small group	21,0	14.00
Self study	96,0	64.00
Hours large group	21,0	14.00

Total learning time: 150 h

CONTENTS

Introduction

Description:
Information system concept, information system development process and stages and quality of information systems

Historical development in information systems

Description:
We will analyze the historical evolution of information systems in organizations. We will see how the various technological developments have been introduced to the organization and its processes and how this has affected the management department.

Information systems Governance and Management

Software product lines and information systems portfolio. BPMN Process analysis

Usability and Information systems

Project management, methodologies and approaches

ACTIVITIES

Portfoio

Description:
During the course aspetctes various theoretical work, case analysis, research and exercises. The results of this work must be submitted by each student in your portfolio. This activity will be evaluated using a rubric.

Specific objectives:
1, 2, 3, 4, 5, 6, 7, 8, 9

Related competencies :
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Presentations

Specific objectives:
1, 2, 6, 7, 8, 9

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Information sistems plan

Specific objectives:
3, 4, 5, 6

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Examen DGSI

Specific objectives:
1, 2, 5, 6, 7, 8, 9

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Full-or-part-time: 2h
Guided activities: 2h

GRADING SYSTEM

Nota Avaluació continuada (AC)= (Portfoli * 2 + Presentació + Projecte + Lliuraments exercicis) / 5

Si (AC>=6) Nota DSGSI = AC
Sino
Nota DGSI = (AC * 6 + Examen * 4) / 10

La nota competencia CB8 = Presentació

BIBLIOGRAPHY

Basic:
- Pohl, K. Requirements engineering: fundamentals, principles, and techniques. Berlin: Springer, 2010. ISBN 9783642125775.
- Gillies, A. Software quality: theory and management. 3rd edition. Raleigh, N.C.: Lulu enterprises, 2011. ISBN 9781446753989.
- Pohl, K.; Böckle, G.; Linden, F. van der. Software product line engineering: foundations, principles and techniques. Berlin: Springer, 2005. ISBN 3540243720.
- Brambilla, M.; Cabot, J.; Wimmer, M. Model-driven software engineering in practice. 2nd ed. San Rafael, California: Morgan & Claypool, 2017. ISBN 9781627057080.
- Nielsen, J.; Loranger, H. Prioritizing web usability. Berkeley, Calif.: New Riders, 2006. ISBN 978-0321350312.
- Cockburn, A. Agile software development: the cooperative game. 2nd edition. Upper Saddle River, NJ: Addison-Wesley, 2007. ISBN 9780321482754.
- Wagner, S. Software product quality control. London: Springer, 2013. ISBN 9783642385711.

RESOURCES

Hyperlink:
- https://atenea.upc.edu/moodle/login/index.php