Course guide
270103 - PSI - Information Systems Project

Last modified: 30/01/2024

Unit in charge:	Barcelona School of Informatics
Teaching unit:	747 - ESSI - Department of Service and Information System Engineering.
Degree:	BACHELOR'S DEGREE IN INFORMATICS ENGINEERING (Syllabus 2010). (Optional subject).

Academic year: 2023   **ECTS Credits:** 6.0   **Languages:** Catalan

LECTURER

Coordinating lecturer:	ENRIQUE MAYOL SARROCA
Others:	Segon quadrimestre: ENRIQUE MAYOL SARROCA - 10

PRIOR SKILLS

The subjects learned in the prerequisite courses

REQUIREMENTS

- Prerequisite DSI
- Corequisite ER
- Corequisite NE
- Prerequisite SIO

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
CSI2.2. To conceive, deploy, organize and manage computer systems and services, in business or institutional contexts, to improve the business processes; to take responsibility and lead the start-up and the continuous improvement; to evaluate its economic and social impact.
CSI3.2. To develop the information system plan of an organization.
CSI4.1. To participate actively in the specification of the information and communication systems.
CSI4.2. To participate actively in the design, implementation and maintenance of the information and communication systems.

Generical:
G4. EFFECTIVE ORAL AND WRITTEN communication: To communicate with other people knowledge, procedures, results and ideas orally and in a written way. To participate in discussions about topics related to the activity of a technical informatics engineer.
G5. TEAMWORK: to be capable to work as a team member, being just one more member or performing management tasks, with the finality of contributing to develop projects in a pragmatic way and with responsibility sense; to assume compromises taking into account the available resources.

TEACHING METHODOLOGY

It is a course project, so basically practice. The classes are always in lab with a number of four or five project teams per class. The explanations of concepts needed (most at first, but also at any time when necessary) are in the same classroom block 20-30 minutes. The project teams are composed of three to five members, with different roles assigned (Head, Business Analyst, Analyst Information System). The teacher in the classroom, acts as guardian of the equipment. Both presentations are also planned in hours of lab.

The project involves a case of a company, and tries to play the event of a real project, which must submit an analysis of the current situation and plan systems proposed to solve problems or shortcomings of the current situation. Additionally, define the implementation project (development, procurement, subcontracting ...) any of IS Plan proposed to implement. Models and tools to support the work of analysis and definition of systems plan will be chosen by the students, based on the recommendations of the teacher and the students themselves. Are two installments, with the first results of the analysis of the current state (business and SI) business, and the second with the plan proposed system, including prioritized list of projects and details any of these. The technical issues are put into practice correspond largely to the wealth of the specialty subjects.

LEARNING OBJECTIVES OF THE SUBJECT

1.Reinforce concepts already acquired in previous courses through its enforceability in a case
2.Learn to identify and propose opportunities to improve business processes by adopting (development, purchasing, outsourcing, adaptation, implementation ...) and use of information systems
3.Learn to track systematic and disciplined method for defining Information Systems Plans
4.Knowing how to choose and correctly use models and tools to support the definition of an Information Systems Plan and their projects.
5.Know how to defense and public presentation of an Information Systems Plan.
6.Learn the technique of writing an Information Systems Plan memorandum

STUDY LOAD

Type	Hours	Percentage
Hours small group	60,0	40.00
Guided activities	6,0	4.00
Self study	84,0	56.00

Total learning time: 150 h

CONTENTS

Information Systems Planning

Description:
Description of what an Information Systems Plan is and a planification methodology

Models and tools for business and information systems analysis

Description:
Description of different models and tools to support the analysis of current (and future) business and information systems, as well as models and tools to support the generation of project ideas for improving IS.

Project Management, Information Systems specification and design

Description:
Basic concepts and elements useful for project management, and for the specification and design of IS. Basically it is a reminder of previous courses.

Analysis of current situation

Description:
From a case of an enterprise, for which we will develop an analysis of current processes and analysis of the current architecture of IS. Activity carried out in the laboratory group and with the support of the teacher

Analysis of technological alternatives

Description:
Analyze alternatives for improving business processes and existing IS. Activity carried out in the laboratory group with support from the teacher.

Information Systems Pla Definition

Description:
It will generate project ideas for development, deployment, adoption, outsourcing, etc. of Information Systems. We will prioritize and temporarily plan these projects. Activity carried out in the laboratory group with support from the teacher

Information Systems Specification and Architectural Design

Description:
For some of the proposed projects, will define the information system requirements, details about the strategy of adoption (outsourcing, development, acquisition, ...), together with the proposal for an initial technical architecture of the system. Activity carried out in the laboratory group with support from the teacher

ACTIVITIES

Organization and project initiation

Description:
Read the case documentation, create project teams with assignment of roles and set the mechanism for communication and information sharing within the group and with the teacher

Specific objectives:
1, 3

Related competencies :
G5. TEAMWORK: to be capable to work as a team member, being just one more member or performing management tasks, with the finality of contributing to develop projects in a pragmatic way and with responsibility sense; to assume compromises taking into account the available resources.

Full-or-part-time: 4h
Laboratory classes: 4h

Relevant concepts

Description:
Review and discuss the concepts relevant to the definition of information systems plan for the case study

Specific objectives:
1, 2, 4

Related competencies :
G5. TEAMWORK: to be capable to work as a team member, being just one more member or performing management tasks, with the finality of contributing to develop projects in a pragmatic way and with responsibility sense; to assume compromises taking into account the available resources.

Full-or-part-time: 8h
Laboratory classes: 4h
Self study: 4h

Development of the Analysis of the Current Situation

Description:
The working groups carried out the study of the current state of business processes of the organization and the current state of information systems with support of the tutor on doubts and queries

Specific objectives:
1, 3, 4, 5, 6

Related competencies :
G4. EFFECTIVE ORAL AND WRITTEN communication: To communicate with other people knowledge, procedures, results and ideas orally and in a written way. To participate in discussions about topics related to the activity of a technical informatics engineer.
G5. TEAMWORK: to be capable to work as a team member, being just one more member or performing management tasks, with the finality of contributing to develop projects in a pragmatic way and with responsibility sense; to assume compromises taking into account the available resources.

Full-or-part-time: 42h
Laboratory classes: 20h
Self study: 22h

Presentation of Present Situation Analysis

Description:
Presentation of the main conclusions regarding the results of the analysis of current processes and information systems of the organization

Specific objectives:
5

Related competencies :
G4. EFFECTIVE ORAL AND WRITTEN communication: To communicate with other people knowledge, procedures, results and ideas orally and in a written way. To participate in discussions about topics related to the activity of a technical informatics engineer.
G5. TEAMWORK: to be capable to work as a team member, being just one more member or performing management tasks, with the finality of contributing to develop projects in a pragmatic way and with responsibility sense; to assume compromises taking into account the available resources.

Full-or-part-time: 6h
Guided activities: 2h
Self study: 4h

Delivery of Current Situation Analysis

Description:
The explanatory report on the current situation analysis conducted, including models, tools and elements chosen to describe the current state of business and information systems

Specific objectives:
4, 6

Related competencies :
G4. EFFECTIVE ORAL AND WRITTEN communication: To communicate with other people knowledge, procedures, results and ideas orally and in a written way. To participate in discussions about topics related to the activity of a technical informatics engineer.
G5. TEAMWORK: to be capable to work as a team member, being just one more member or performing management tasks, with the finality of contributing to develop projects in a pragmatic way and with responsibility sense; to assume compromises taking into account the available resources.

Full-or-part-time: 10h
Self study: 10h

Definition of the Information Systems Plan

Description:
The working groups make the definition of the projects that compose the plan, prioritized and for some of them, descrive their requirements and architectural design, while the adoption strategy (development, acquisition and parameterization, implementation, outsourcing, ...) with the support of the tutor for doubts and queries

Specific objectives:
1, 2, 3, 4, 5, 6

Related competencies :
G4. EFFECTIVE ORAL AND WRITTEN communication: To communicate with other people knowledge, procedures, results and ideas orally and in a written way. To participate in discussions about topics related to the activity of a technical informatics engineer.
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Full-or-part-time: 58h
Laboratory classes: 28h
Self study: 30h

Intermediate control the progression of the project

Description:
An interview in lab hours with a check-list, to asses the state of development of work of team and implication of each member on the group work

Specific objectives:
3, 4

Related competencies :
G5. TEAMWORK: to be capable to work as a team member, being just one more member or performing management tasks, with the finality of contributing to develop projects in a pragmatic way and with responsibility sense; to assume compromises taking into account the available resources.

Full-or-part-time: 6h
Self study: 6h

Presentation of Information Systems Plan

Description:
Technical presentation of the Information System Plan

Specific objectives:
5

Related competencies :
G4. EFFECTIVE ORAL AND WRITTEN communication: To communicate with other people knowledge, procedures, results and ideas orally and in a written way. To participate in discussions about topics related to the activity of a technical informatics engineer.
G5. TEAMWORK: to be capable to work as a team member, being just one more member or performing management tasks, with the finality of contributing to develop projects in a pragmatic way and with responsibility sense; to assume compromises taking into account the available resources.

Full-or-part-time: 6h
Guided activities: 2h
Self study: 4h

Final delivery of the project

Description:
The explanatory report of the Information Systems Plan, including the prioritization of projects, and some of these requirements and architectural design, while the strategy adopted (development, acquisition and parameterization, implementation, outsourcing, ...)

Specific objectives:
2, 6

Related competencies :
G4. EFFECTIVE ORAL AND WRITTEN communication: To communicate with other people knowledge, procedures, results and ideas orally and in a written way. To participate in discussions about topics related to the activity of a technical informatics engineer.
G5. TEAMWORK: to be capable to work as a team member, being just one more member or performing management tasks, with the finality of contributing to develop projects in a pragmatic way and with responsibility sense; to assume compromises taking into account the available resources.

Full-or-part-time: 10h
Self study: 10h

GRADING SYSTEM

In a course project, which will qualify the project. This is done in teams, and team members have different roles. Project evaluation takes into account the documents submitted, oral presentations and the overall performance of the team, and this forms a global team note. The final note that each student team, qualified the behavior of the role performed by the student. The components of the note are:

NDoc: Grade of the documentation submitted (two documents)
$NDoc = 0,5*NDoc\_1 + 0,5*NDoc\_2$ where each component is calculated as follows
$NDoc\_i = 0,6*VCD\_i + 0,4*VQD\_i$, where VCD_i is assessing the technical content and VQD_i the quality assessment of formal technical report

NPres: Grade of the presentations (2 presentations)
$NPres = 0,5*NPres\_1 + 0,5*NPres\_2$ where each component is calculated as follows
$NPres\_i = 0,6*VCP\_i + 0,4*VQP\_i$, where VCP_i is assessing the technical content and VQP_i the quality assessment of presentation

Ndes: Development grade
Ndes = overall assessment of the teacher about the quality of work done by the team observed in everyday classroom

NdesRol: Development role grade
NdesRol = teacher assessment on the performance of each individual roles within the team observed in everyday classroom

$NEquip = 0,7*NDoc + 0,2*NPres + 0,1*Ndes$
$Nota final = 0,9*NEquip + 0,1*NdesRol$

The assessment of key skills is obtained from:
Oral i Written Communication = $(VC+VQ)/2 * (NdesRol/Ndes)$ where
$VC = (VCD\_1 + VCD\_2 + VCP\_1 + VCP\_2)/4$ i $VQ = (VQD\_1 + VQD\_2 + VQP\_1 + VQP\_2)/4$
Work in group = NdesRol

the grades corresponds to A, B, C, D values according to:
A if grade is high to 8.4
B if grade is between 7 and 8.4
C if grade is between 5 and 6.9
D if grade is less than 5

BIBLIOGRAPHY

Basic:
- Cassidy, A. A practical guide to information systems strategic planning. 2nd ed. Auerbach Publications, 2006. ISBN 0849350735.
- Pastor, J.A.; Sanchez, F. Método integral de planificación estratégica de SI-TI.
- Peppard, J.; Ward, J. The strategic management of information systems: building a digital strategy. 4th ed. Wiley, 2016. ISBN 9780470034675.

Complementary:
- Andreu, R.; Ricart, J.E.; Valor, J. Estrategia y sistemas de información. 2a ed. McGraw-Hill, 1996. ISBN 8448105087.
- Pearlson, K.E.; Saunders, C.S.; Galletta, D.F. Managing and using information systems: a strategic approach. 7th ed. Hoboken: John Wiley & Sons, 2020. ISBN 9781119668251.
- Rodriguez, J.R. Planificación y dirección estratégica de sistemas de información : selección de entradas del blog de los Estudios de Informática, Multimedia y Telecomunicación de la UOC. UOC. Editorial UOC, 2015. ISBN 9788490648667.
- Gallofré Ocaña, M. Modelització i ampliació d'un mètode de planificació estratègica de SI-TI: [Treball final de grau FIB]. Barcelona: UPC, 2015.

RESOURCES

Hyperlink:
- http://administracionelectronica.gob.es/pae_Home/pae_Documentacion/pae_Metodolog