Course guide
270510 - PEGTI - Strategic Planning and IT Governance

Last modified: 25/07/2025

Unit in charge: Barcelona School of Informatics
Teaching unit: 732 - OE - Department of Management.

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

Academic year: 2025 **ECTS Credits:** 4.5 **Languages:** Catalan, Spanish

LECTURER

Coordinating lecturer: FERNANDO BARRABES NAVAL

Others: Primer quadrimestre:
FERNANDO BARRABES NAVAL - 10

PRIOR SKILLS

The conditions of MEI master

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
CDG1. Capability to integrate technologies, applications, services and systems of Informatics Engineering, in general and in broader and multicisciplinary contexts.
CDG2. Capacity for strategic planning, development, direction, coordination, and technical and economic management in the areas of Informatics Engineering related to: systems, applications, services, networks, infrastructure or computer facilities and software development centers or factories, respecting the implementation of quality and environmental criteria in multidisciplinary working environments .
CDG3. Capability to manage research, development and innovation projects in companies and technology centers, guaranteeing the safety of people and assets, the final quality of products and their homologation.

Generical:
CG10. Capacity to apply economics, human resources and projects management principles, as well as legislation, regulation and standardization of Informatics.
CG3. Capability to lead, plan and supervise multidisciplinary teams.
CG5. Capacity for the development, strategic planning, leadership, coordination and technical and financial management of projects in all areas of Informatics Engineering, keeping up with quality and environmental criteria.
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.

Transversal:
CTR1. ENTREPRENEURSHIP AND INNOVATION: Capacity for knowing and understanding a business organization and the science that rules its activity, capability to understand the labour rules and the relationships between planning, industrial and commercial strategies, quality and profit. Capacity for developping creativity, entrepreneurship and innovation trend.
CTR3. TEAMWORK: Capacity of being able to work as a team member, either as a regular member or performing directive activities, in order to help the development of projects in a pragmatic manner and with sense of responsibility; capability to take into account the available resources.
CTR4. INFORMATION LITERACY: Capability to manage the acquisition, structuring, analysis and visualization of data and information in the area of informatics engineering, and critically assess the results of this effort.
CTR5. APPROPIATE ATTITUDE TOWARDS WORK: Capability to be motivated by professional achievement and to face new challenges, to have a broad vision of the possibilities of a career in the field of informatics engineering. Capability to be motivated by quality and continuous improvement, and to act strictly on professional development. Capability to adapt to technological or organizational changes. Capacity for working in absence of information and/or with time and/or resources constraints.
CTR6. REASONING: Capacity for critical, logical and mathematical reasoning. Capability to solve problems in their area of study. Capacity for abstraction: the capability to create and use models that reflect real situations. Capability to design and implement simple experiments, and analyze and interpret their results. Capacity for analysis, synthesis and evaluation.

Basic:
CB6. Ability to apply the acquired knowledge and capacity for solving problems in new or unknown environments within broader (or multidisciplinary) contexts related to their area of study.
CB7. Ability to integrate knowledges and handle the complexity of making judgments based on information which, being incomplete or limited, includes considerations on social and ethical responsibilities linked to the application of their knowledge and judgments.
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.
CB9. Possession of the learning skills that enable the students to continue studying in a way that will be mainly self-directed or autonomous.

TEACHING METHODOLOGY

Lectures will be complemented by class exercises or case method and self-learning by previous readings. Working through these exercises helps students understand and reflect on given themes. An exercise consists of solving a case/problem through the techniques learnt and by using computer tools, discussing situations and/or making presentation in class.

LEARNING OBJECTIVES OF THE SUBJECT

1.Align the IT strategic plan with corporate strategy
2.Study the concept of IT Governance as a system through which it manages and controls the use of IT today and tomorrow
3.Managing IT risk decisions, at a given time, may affect negatively impact on the activities and processes of the organization.
IT resource management and optimum utilization of the same

STUDY LOAD

Type	Hours	Percentage
Hours large group	22,5	20.00
Self study	72,0	64.00
Hours medium group	13,5	12.00
Guided activities	4,5	4.00

Total learning time: 112.5 h

CONTENTS

Importance of IT Governance and Strategic Planning

Description:
The main responsibilities for the governance of IT must fall and be supported directly by the top management

Current status of IT governance

Description:
This chapter will discuss what the current state of IT governance. This will provide the student with an overview of what is the degree of implementation of government IT systems in different international organizations.
The aim is to understand that these systems are used more and starting to be considered as a key element of a government organization.

What is IT governance?

Description:
3.1. Government vs Corporate governance of IT
3.2. Operation, Administration and Governance of IT
3.3. Concept of IT governance
3.4. Concept of IT governance according to ISO 38500
3.5. Conclusions
3.6. references

Government Areas of IT

Description:
4.1.Alineación of IT with the business
4.2. Value generated by IT
4.3. Measuring the performance of IT
4.4. Risk management
4.5. IT Resource Management
4.6. Areas versus Principles
4.7. Conclusions
4.8. references

Structures and relationships in the IT governance

Description:
5.1. Structures, roles and responsibilities
5.1.1. Involve deAdministración Council in IT Governance
5.1.2. The roles of the CEO, the CIO and executives in IT Governance
5.1.3. Create specific committees for strategic IT management
5.2. Mechanisms relationship in IT Governance
5.3. Main contributions of the ISO 38500
5.4. Conclusions
5.5. references

IT-related decisions: what to decide? Who decides?

Description:
6.1. Supplier Information Services Strategic vs.Aliado
IT vs 6.2.Administración. Government IT
6.3. Key decisions for IT governance
6.4. Decision models
6.5. The matrix deWeill and Ross
6.6. The matrix for the Spanish University System
6.7. Implementing IT governance in an organization
6.8. Conclusions
6.9. references

Processes for IT governance

Description:
7.1. introduction
7.2. IT Strategic Planning
7.3. Models maturity
7.4. IT dashboards
7.5. Processes applied to the business
7.6. Conclusions

Tools for the implementation of IT governance: ISO 38500

Description:
8.1. introduction
8.2. Tools for the implementation of IT governance
8.3. ISO / IEC 38500:2008
8.3.1. standard definitions
8.3.2. Framework
8.3.3. Guide recommendations
8.4. The ISO 38500 in relation to universities
8.5. Conclusions
8.6. references

COBIT

Description:
9.1. introduction
9.2. COBIT Product Development
9.3. The COBIT Framework
9.3.1. Guidance to business objectives
9.3.2. Definitions
9.3.3. Principles of the framework
9.4. references

Model of Government IT to universities (GTI4U)

Description:
10.1. introduction
10.2. GTI4U model elements
10.3. Level 1: Elements of ISO 38500
10.3.1. IT governance model of ISO 38500
10.3.2. Principles of ISO 38500
10.3.3. Governance Guidelines of ISO 38500
10.4. Level 2: Maturity Models (MM)
10.5. Level 3: Indicators of Government (IG)
10.5.1. Maturity Matters (CM)
10.5.2. Indicators Evidence of Government (IEG)
10.5.3. Quantitative Indicators of Government (ICG)
10.6. Conclusions
10.7. references

Self-assessment of the maturity of IT governance by GTI4U

Description:
11.1. introduction
11.2. Phases of the self-assessment process
11.3. Example of a self-assessment
11.3.1. Collect values ☐☐of quantitative indicators of Government (ICG)
11.3.2. Indicators Suggest values ☐☐for Evidence of Government (IEG)
11.3.3. Agree on a single value for each IEG
11.3.4. Answer questions Maturity (CM)
11.3.5. Agree a unique value for each maturity of IT governance principle
11.3.6. Reports on the maturity of IT governance
11.4. Conclusions
11.5. references

How to implement IT governance in a public or private?

Description:
12.1. introduction
12.2. Factors facilitating and hindering implementation
12.2.1. Why implement an IT governance system?
12.2.2. Effectiveness of an IT governance system
12.2.3.Aspectos highlights of the implementation
12.3. Steps to implement IT governance in a University
12.3.1. Implementation TOP-DOWN
12.3.2. Main steps of an implementation
12.4. Implementation of Model GTI4U
12.4.1. Steps implantation
12.4.2. Key actions recommended
12.5. Conclusions
12.6. references

The Government IT Strategy Management System. Examples

Description:
13.1. introduction
13.2. Context: Creating UJI 1991 -1996
13.3. The information system of the UJI and Systems Plan 1996-2001
13.4. 2001-2009 Strategic Steering System
13.4.1 Motivation
13.4.2 Instruments and deployment
13.4.3 Positioning in IT / IS
13.5. Technological Framework IT / IT as an instrument of government in the UJI.
13.5.1 usual stages in evolution of the IS / IT
13.5.2 Position of the Government in the SDE IT
Result 13.5.3 Process redesign deAnalizar and IT / IS
13.5.4 Comparison Framework IT / IS with the governance model of the IT / IS
13.6. references

ACTIVITIES

Importance of IT Governance and Strategic Planning

Description:
The main responsibilities related to the governance of IT must fall and be supported directly by the highest leadership

Specific objectives:
1, 2

Related competencies :
CB7. Ability to integrate knowledges and handle the complexity of making judgments based on information which, being incomplete or limited, includes considerations on social and ethical responsibilities linked to the application of their knowledge and judgments.
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Full-or-part-time: 2h 18m
Self study: 1h
Theory classes: 0h 18m
Laboratory classes: 1h

Current status of IT governance

Description:
In this chapter we will analyze what is the current status of IT governance. For that provides students with an overview of the degree of implementation of systems of government IT organizations worldwide. The goal is to be understood that such systems are increasingly used and have started to be considered as a key element of a government organization.

Specific objectives:
2

Related competencies :
CDG1. Capability to integrate technologies, applications, services and systems of Informatics Engineering, in general and in broader and multicisciplinary contexts.
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What is IT governance?

Description:
The aim of this chapter is to present a definition of IT governance. To meet this objective, we analyze, first
Instead, the relationship between IT governance and corporate governance, to differentiate it from other concepts later
as IT management or operation of IT. The bases of differentiation of the concept,
analyze key definitions found in the literature, detailing those with greater acceptance.
Because of its importance, special mention is made to the ISO 38500:2008 "Corporate governance of information technology."
This standard, which is complementary to other related systems and information technology, establishes
standards for IT governance in any organization.

Specific objectives:
2

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Government Areas of IT

Description:
The main purpose of IT governance is to generate business value while minimizing the associated risks. to generate value, it is necessary to align IT strategy with business strategy. Minimizing risk is achieved when responsibility and the principle of accountability for the actions taken permeates all areas and organizational levels. In both cases, it is necessary to have a set of adequate resources and a system measurement to ensure that the desired results are obtained.

Specific objectives:
1

Related competencies :
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Full-or-part-time: 2h 18m
Self study: 1h
Theory classes: 0h 18m
Laboratory classes: 1h

Structures and relationships in the IT governance

Description:
IT governance is an important part of the corporate governance framework of any organization and is, in
Once, a business system shall be such that its structure, processes, roles and technology that have
to be implemented at the strategic, tactical and operational. A specific combination of these elements is called
IT Governance Model.

Specific objectives:
1, 3

Related competencies :
CB7. Ability to integrate knowledges and handle the complexity of making judgments based on information which, being incomplete or limited, includes considerations on social and ethical responsibilities linked to the application of their knowledge and judgments.
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Full-or-part-time: 10h
Self study: 6h
Theory classes: 1h
Laboratory classes: 3h

IT-related decisions: what to decide? Who decides?

Description:
The design and analysis of IT governance, requires departing from day to day, to identify what are the key decisions to be taken and who is best positioned to take them. This chapter deals with two questions major addresses to which the IT governance:
· What decisions should be made?
· Who should make those decisions?

Specific objectives:
3

Related competencies :
CDG3. Capability to manage research, development and innovation projects in companies and technology centers, guaranteeing the safety of people and assets, the final quality of products and their homologation.
CG10. Capacity to apply economics, human resources and projects management principles, as well as legislation, regulation and standardization of Informatics.
CG3. Capability to lead, plan and supervise multidisciplinary teams.

Full-or-part-time: 10h
Self study: 6h
Theory classes: 1h
Laboratory classes: 3h

Processes for IT governance

Description:
In this chapter we will focus on the processes that are related to the strategic decision-making, planning
strategic information systems, services management, and monitoring tools,
control and process definition (COBIT, ITIL, IT CMI, etc.)

Specific objectives:
1, 2

Related competencies :
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CB6. Ability to apply the acquired knowledge and capacity for solving problems in new or unknown environments within broader (or multidisciplinary) contexts related to their area of study.
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Full-or-part-time: 10h
Self study: 6h
Theory classes: 1h
Laboratory classes: 3h

Tools for the implementation of IT governance: ISO 38500

Description:
The purpose of this standard is to promote the efficient, effective and acceptable
IT across the organization:
· Ensuring stakeholders (including investors, customers and employees)
that, if you follow the standard, you can trust in corporate governance
IT.
· Informing and guiding managers in government IT in your organization.
· Providing the basis for an objective assessment of the state of
Government IT in the organization.

Specific objectives:
2, 3

Related competencies :
CDG1. Capability to integrate technologies, applications, services and systems of Informatics Engineering, in general and in broader and multicisciplinary contexts.
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Full-or-part-time: 10h
Self study: 6h
Theory classes: 1h
Laboratory classes: 3h

COBIT

Description:
COBIT ayuda las save brechas between Risks of business, needs
Technical Control and traits. Provides "healthy Practices" through
a frame of reference and processes your domain and presents activities in a
manageable and logical structure. Practice the finest of the COBIT representan
Experts Consenso of them, Helping you optimize the investment in information,
Still but more important, it representan that you will be evaluated on whether
salted the things worse.

Specific objectives:
2, 3

Related competencies :
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Full-or-part-time: 10h
Self study: 6h
Theory classes: 1h
Laboratory classes: 3h

Model of Government IT to universities (GTI4U)

Description:
It is designed and validated a framework of IT Governance for Universities (GTI4U). This framework
is based and fully respects the IT governance model proposed by ISO 38500. Yet provides
a number of tools to be easily deployed in a university setting.

Specific objectives:
2

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Full-or-part-time: 10h 30m
Self study: 6h 30m
Theory classes: 1h
Laboratory classes: 3h

Self-assessment of the maturity of IT governance by GTI4U

Description:
This chapter will present a case study that will serve as a guide to the assessment process of IT governance maturity in our university, modeled GTI4U

Specific objectives:
2

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Full-or-part-time: 10h 30m
Self study: 6h 30m
Theory classes: 1h
Laboratory classes: 3h

How to implement IT governance in a public or private?

Description:
This chapter will try to establish what is the process to be followed by a university or company to implement a system government of its Information Technology (IT).

Specific objectives:
1, 2, 3

Related competencies :
CB6. Ability to apply the acquired knowledge and capacity for solving problems in new or unknown environments within broader (or multidisciplinary) contexts related to their area of study.
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CTR5. APPROPIATE ATTITUDE TOWARDS WORK: Capability to be motivated by professional achievement and to face new challenges, to have a broad vision of the possibilities of a career in the field of informatics engineering. Capability to be motivated by quality and continuous improvement, and to act strictly on professional development. Capability to adapt to technological or organizational changes. Capacity for working in absence of information and/or with time and/or resources constraints.
CTR4. INFORMATION LITERACY: Capability to manage the acquisition, structuring, analysis and visualization of data and information in the area of informatics engineering, and critically assess the results of this effort.
CTR3. TEAMWORK: Capacity of being able to work as a team member, either as a regular member or performing directive activities, in order to help the development of projects in a pragmatic manner and with sense of responsibility; capability to take into account the available resources.
CTR1. ENTREPRENEURSHIP AND INNOVATION: Capacity for knowing and understanding a business organization and the science that rules its activity, capability to understand the labour rules and the relationships between planning, industrial and commercial strategies, quality and profit. Capacity for developping creativity, entrepreneurship and innovation trend.
CTR6. REASONING: Capacity for critical, logical and mathematical reasoning. Capability to solve problems in their area of study. Capacity for abstraction: the capability to create and use models that reflect real situations. Capability to design and implement simple experiments, and analyze and interpret their results. Capacity for analysis, synthesis and evaluation.

Full-or-part-time: 7h 30m
Self study: 5h
Theory classes: 0h 30m
Laboratory classes: 2h

The Government IT Strategy Management System. Examples

Description:
The government IT strategy management system of the Universitat Jaume I

Specific objectives:
1, 2, 3

Related competencies :
CB7. Ability to integrate knowledges and handle the complexity of making judgments based on information which, being incomplete or limited, includes considerations on social and ethical responsibilities linked to the application of their knowledge and judgments.
CB6. Ability to apply the acquired knowledge and capacity for solving problems in new or unknown environments within broader (or multidisciplinary) contexts related to their area of study.
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.
CB9. Possession of the learning skills that enable the students to continue studying in a way that will be mainly self-directed or autonomous.
CDG2. Capacity for strategic planning, development, direction, coordination, and technical and economic management in the areas of Informatics Engineering related to: systems, applications, services, networks, infrastructure or computer facilities and software development centers or factories, respecting the implementation of quality and environmental criteria in multidisciplinary working environments .
CDG1. Capability to integrate technologies, applications, services and systems of Informatics Engineering, in general and in broader and multicisciplinary contexts.
CDG3. Capability to manage research, development and innovation projects in companies and technology centers, guaranteeing the safety of people and assets, the final quality of products and their homologation.
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.
CG10. Capacity to apply economics, human resources and projects management principles, as well as legislation, regulation and standardization of Informatics.
CG3. Capability to lead, plan and supervise multidisciplinary teams.
CG5. Capacity for the development, strategic planning, leadership, coordination and technical and financial management of projects in all areas of Informatics Engineering, keeping up with quality and environmental criteria.
CTR4. INFORMATION LITERACY: Capability to manage the acquisition, structuring, analysis and visualization of data and information in the area of informatics engineering, and critically assess the results of this effort.
CTR3. TEAMWORK: Capacity of being able to work as a team member, either as a regular member or performing directive activities, in order to help the development of projects in a pragmatic manner and with sense of responsibility; capability to take into account the available resources.
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Full-or-part-time: 7h 30m
Self study: 5h
Theory classes: 0h 30m
Laboratory classes: 2h

Prova Final

Description:
Prova Final

Specific objectives:
1, 2, 3

Related competencies :
CB7. Ability to integrate knowledges and handle the complexity of making judgments based on information which, being incomplete or limited, includes considerations on social and ethical responsibilities linked to the application of their knowledge and judgments.
CB6. Ability to apply the acquired knowledge and capacity for solving problems in new or unknown environments within broader (or multidisciplinary) contexts related to their area of study.
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.
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Full-or-part-time: 17h 18m
Self study: 15h 30m
Guided activities: 1h 48m

GRADING SYSTEM

The assessment will be based on the following items:
- A part exam - P1
- A part exam - P2
- Participation in and solution of class exercises - E
- Final exam (F)

P=P1*30%+P2*50%

The grade will be calculated as follows:

N=MAX(P,F)*80%+E*20%.

BIBLIOGRAPHY

Basic:
- De Haes, S.; Van Grembergen, W. Enterprise governance of information technology: achieving alignment and value, featuring COBIT 5. 2nd ed. Springer, 2015. ISBN 9783319374475.