205112 - Advanced Project Management

Coordinating unit: 205 - ESEIAAT - Terrassa School of Industrial, Aerospace and Audiovisual Engineering
Teaching unit: 758 - EPC - Department of Project and Construction Engineering
Academic year: 2018
Degree: MASTER'S DEGREE IN TECHNOLOGY AND ENGINEERING MANAGEMENT (Syllabus 2016). (Teaching unit Optional)
ECTS credits: 7,5

Teaching languages: English

Coordinator: María Gonçalves Ageitos
Others: Arcal Cunillera, Jordina

Degree competences to which the subject contributes

Basic:
CB6. Knowledge and understanding that provides a basis or opportunity for originality in the development and/or application of ideas, often in a research context.
CB7. METMF_ The ability to apply the knowledge and problem-solving skills acquired in new or unfamiliar environments within wider (or multidisciplinary) contexts related to the area of study.
CB8. METMF_ The ability to integrate knowledge and deal with the complexity of making judgements on the basis of information that, albeit incomplete or limited, includes thoughts on the role played by social and ethical responsibility in the application of knowledge and judgement.
CB9. METMF_ The ability to communicate conclusions, and the knowledge and reasons that ultimately sustain these conclusions, to specialised and lay audiences in a clear and unambiguous way.
CB10-METP. Learning abilities that will enable students to keep studying in a largely self-directed or independent manner.

Specific:
CE06-MEM. The ability to optimally assign physical and financial resources in process and project management in technological settings.
CE07-MEM. The ability to manage processes and projects in technological settings subject to levels of uncertainty.
CE08-MEM. The ability to evaluate the results of process and project development in technological settings subject to levels of process uncertainty.

Transversal:
CT1a. ENTREPRENEURSHIP AND INNOVATION: Being aware of and understanding how companies are organised and the principles that govern their activity, and being able to understand employment regulations and the relationships between planning, industrial and commercial strategies, quality and profit.
CT2. SUSTAINABILITY AND SOCIAL COMMITMENT: Being aware of and understanding the complexity of the economic and social phenomena typical of a welfare society, and being able to relate social welfare to globalisation and sustainability and to use technique, technology, economics and sustainability in a balanced and compatible manner.
CT3. TEAMWORK: Being able to work in an interdisciplinary team, whether as a member or as a leader, with the aim of contributing to projects pragmatically and responsibly and making commitments in view of the resources that are available.
The course Advanced Project Management aims to introduce students to planning, organizing, securing and managing resources efficiently for the successful completion of specific project goals and objectives. Students will learn to design, manage and monitor international technology and engineering projects.

**Teaching methodology**

Lecture: Lecturers present concepts, principles and techniques, with the active participation of students.

Problem Based Learning: Lecturers and students resolve exercises and case studies through specific techniques related to the theoretical contents and principles of the course.

Project Based learning: Teams of students apply agile project management methodologies to define the project concept, from there they develop a project management plan, solving complex problems through specific techniques related to the theoretical contents and principles of the course.

Self-study: Students diagnose their learning needs, in collaboration with the lecturers, and plan their own learning process.

**Learning objectives of the subject**

The course Advanced Project Management aims to introduce students to planning, organizing, securing and managing resources efficiently for the successful completion of specific project goals and objectives. Students will learn to design, manage and monitor international technology and engineering projects.

**Study load**

<table>
<thead>
<tr>
<th>Total learning time: 187h 30m</th>
<th>Hours large group: 30h</th>
<th>16.00%</th>
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</thead>
<tbody>
<tr>
<td>Hours medium group:</td>
<td>30h</td>
<td>16.00%</td>
</tr>
<tr>
<td>Self study:</td>
<td>127h 30m</td>
<td>68.00%</td>
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### Content

<table>
<thead>
<tr>
<th>Module 1. Project life cycle and organization</th>
<th>Learning time: 48h</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Theory classes: 9h</td>
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<td></td>
<td>Practical classes: 9h</td>
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<td>Self study: 30h</td>
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**Description:**
The goal of this module is to introduce the students to the project life cycle and organization, including the definition of different approaches for project management according to project characteristics.

**Related activities:**
- In-class activities
- Group project

**Specific objectives:**
- Life cycle of a project
- Organizational structures and project management environment
- Project Management approaches: from agile to traditional
- Traditional Project Management Standards: the PMI-PMBOK
- Introduction to Project Management processes
- Introduction to Project Management knowledge areas
### Module 2. Project management: scope, time, and cost

#### Learning time:
- Theory classes: 12h
- Practical classes: 12h
- Self study: 33h 20m

#### Description:
The goal of this module is to introduce the basic concepts required for the project scope, time and cost management. We will deal with the main concepts and apply the necessary methodologies to appropriately define the project scope, the project schedule, and the project budget. We will also work on defining the appropriate monitoring and control strategies for the project development.

#### Related activities:
- In-class activities
- Group project

#### Specific objectives:
- Requirements definition through traditional and agile methodologies
- Value proposition canvas
- Scope definition and Work Breakdown Structure
- Planning, defining and sequencing activities
- Estimating activity resources and durations
- Developing the project schedule
- Estimating costs within the project and determining the budget
- Defining control and monitoring methodologies for scope, time and cost
- Establishing change control and configuration control
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<table>
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<tr>
<th>Module 3: Stakeholders, communication, risks and integration management</th>
<th>Learning time: 47h</th>
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<tbody>
<tr>
<td></td>
<td>Theory classes: 9h</td>
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<tr>
<td></td>
<td>Practical classes: 9h</td>
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<td>Self study: 29h</td>
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**Description:**
The goal of this module is to introduce the basic concepts and tools required for the project stakeholder, communication, risks and integration management.

**Related activities:**
In-class activities
Group project

**Specific objectives:**
Identification and analysis of stakeholders
Communications plan
Planning, identifying, analyzing risks qualitatively and quantitatively and planning risks responses.
Project management integration, documentation and lessons learned.

**Qualification system**
The final grade depends on the following three elements:

* 30%, In-class activities: Case Studies
* 20%, In-class activities: Questionnaires and theory test
* 35%, Group project: Final report and dissertation
* 15%, Group project: Intermediate deliverables

**Bibliography**