

66348 - Projects of renewable energy plants

Información del Plan Docente

Academic Year	2017/18
Faculty / School	110 - Escuela de Ingeniería y Arquitectura
Degree	535 - Master's in Renewable Energies and Energy Efficiency
ECTS	5.0
Year	1
Semester	Second semester
Subject Type	Optional
Module	---

1.General information

1.1.Introduction

1.2.Recommendations to take this course

1.3.Context and importance of this course in the degree

1.4.Activities and key dates

2.Learning goals

2.1.Learning goals

2.2.Importance of learning goals

3.Aims of the course and competences

3.1.Aims of the course

3.2.Competences

4.Assessment (1st and 2nd call)

4.1.Assessment tasks (description of tasks, marking system and assessment criteria)

5.Methodology, learning tasks, syllabus and resources

5.1.Methodological overview

The methodology followed in this course is oriented towards achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as lectures, the searching and selection of information, interaction with other colleagues. The student decides the approach, technology to develop, and planning to elaborate their project during the course.

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5.2.Learning tasks

The course includes the following learning tasks:

- A01 Lectures (25 hours). Presentation of theoretical contents by a faculty or by external experts to all students enrolled in the course. Although it is not a mandatory activity, regular attendance is highly recommended.
- A02 Problem and case solving (13 hours). Solve practical problems and exercises with all the students. Although it is not a mandatory activity, regular attendance is highly recommended.
- A03 Laboratory sessions (12 hours). Students will work actively in groups to solve practical exercises.
- A06 Guided assignments (20 hours). Students will complete assignments, problems and exercises related to concepts seen in laboratory sessions and lectures.
- A07 Autonomous work (50 hours). Students are expected to spend about 50 hours to study theory, solve problems and prepare lab sessions.
- A08 Assessment (5 hours).

The indicated hours are for guidance and will be adjusted depending on the academic calendar.

At the beginning of the course, lecturers will communicate the schedule of practice sessions, which will be set according to the syllabus and the availability of laboratories and computer rooms.

5.3.Syllabus

The course will address the following topics:

1. Stages in the development of renewable energy projects
2. Current scenario and legal framework
3. Analysis of the energy resource
4. Financial analysis and risks
5. Environmental and social issues
6. Building: possibilities and budgets
7. Hiring and budget of Operation & Maintenance
8. Performance of the Electrical Net
9. Permitting
10. Urban development

5.4.Course planning and calendar

Further information concerning the timetable, classroom, assessment dates and other details regarding this course, will be provided on the first day of class or please refer to the EINA webpage.

5.5.Bibliography and recommended resources

Recommended bibliography:

- Santiago García Garrido: *Permitting y Gestión Financiera de Proyectos Energéticos*, Ed. Renovetec, Madrid (España), 2011.
- Santiago García Garrido: *Diseño de Centrales Termosolares*, Ed. Renovetec, Madrid (España), 2010.
- Nigel J. Smith: *Engineering Project Management*, 2nd Ed, Blackweel Science, Oxford (UK), 2002.
- Stefano Gatti: *Project Finance in Theory and Practice. Designing, Structuring, and Financing Private and Public Projects*, Ed. Elsevier, San Diego (USA), 2008.
- Corrado Clini, Ignazio Musu, María Lodovica Gullino: *Sustainable Development and Environmental Management. Experiences and Case Studies*, Ed. Springer, AA Dordrecht (The Netherlands), 2008.
- Proyecto ARECA: *Acelerando las inversiones en Energías Renovables en Centroamérica y Panamá*, <http://www.proyectoareca.org/?lang=es>
- RETScreen, Natural Resources Canada: <http://www.retscreen.net/es/home.php>