30037 - Thermal Generation Systems

Información del Plan Docente

Academic Year	2017/18
Faculty / School	110 - Escuela de Ingeniería y Arquitectura
Degree	436 - Bachelor's Degree in Industrial Engineering Technology
ECTS	6.0
Year	4
Semester	First 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

5.2.Learning tasks

5.3.Syllabus

Introduction
Types of power plants

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Conventional
Atmospheric Fluidized bed
Nuclear
Combined Cycles
Pressurized fluidized bed
Integrated Gasification Combined Cycle
Organic Rankine Cycle
Steam generator
Air-gas system
Water-steam system
Auxiliary equipment
Control and regulation of power plants
Biomass and co-firing
Energy analysis of power plants
Environmental analysis of power plants
Analysis of industrial and aircraft gas turbines. Combustion chambers of gas turbines.
Characterization of the passages of rotor blades: ratio between the fluid and passages geometry.
Characterization of stators.
Design of action and reaction blades of axial turbines. Optimum operating conditions.
Blade design of axial compressors. Limiting factors.
Features of radial thermal turbomachinery.
Performance off-design.
Regulation of thermal turbomachinery.

5.4.Course planning and calendar

5.5.Bibliography and recommended resources