Course guide
220255 - 220255 - Control, Management and Monitoring of Processes

Unit in charge: Terrassa School of Industrial, Aerospace and Audiovisual Engineering
Teaching unit: 707 - ESAII - Department of Automatic Control.
Degree: MASTER'S DEGREE IN INDUSTRIAL ENGINEERING (Syllabus 2013). (Optional subject).
Academic year: 2023  ECTS Credits: 2.5  Languages: Catalan

LECTURER
Coordinating lecturer: RAMON SARRATE ESTRUCH
Others: RAMON SARRATE ESTRUCH

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES
Specific:
1. Capability for modeling, analysis, calculation and design of electrical power systems.
2. Ability to calculate and design electrical machines and actuators, with knowledge of efficient electrical systems and efficient control of electrical drives.
3. Ability to project conventional and non-conventional power facilities.
4. Knowledge to data integration and industrial communications.
5. Knowledge to the management and monitoring of automated information processes energy.
6. Ability to model and solve problems associated with the operation of electric power systems by integrating information technologies and communication: protection, network operation, and electricity market stability.

TEACHING METHODOLOGY

LEARNING OBJECTIVES OF THE SUBJECT

STUDY LOAD

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self study</td>
<td>40.0</td>
<td>64.00</td>
</tr>
<tr>
<td>Hours small group</td>
<td>7.5</td>
<td>12.00</td>
</tr>
<tr>
<td>Hours large group</td>
<td>15.0</td>
<td>24.00</td>
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</tbody>
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Total learning time: 62.5 h
CONTENTS

**(ENG) - MODULO 1: Los PLC y PACs en el Control Industrial.**

**Description:**
(ENG) Control de processos Industrials mitjançant PLC/PAC
- Targetes conversores AD y DA
- Estudi del bloc de funció i targetes específiques de PID
- Introducció a les sistemes SCADA
- Factores ergonòmics a tindrà en conta en el disseny de interfícies gràfiques

**Full-or-part-time:** 31h 30m
- Theory classes: 7h 30m
- Laboratory classes: 4h
- Self study: 20h

**(ENG) - MODULO 2: Estructures de Control de Processos.**

**Description:**
(ENG) Control multivariable, sistemes acoblats y desacoblats.
- Estructures de Control: Control Cascada, Control Ratio, Control Selectiu, Control Override, Control Rango Partido

**Full-or-part-time:** 31h
- Theory classes: 7h 30m
- Practical classes: 3h 30m
- Self study: 20h

**GRADING SYSTEM**