

## DADES GENERALS

## Curs acadèmic

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|--------------------------|----------------------------------|
| <b>Tipus de curs</b>     | Màster de Formació Permanent     |
| <b>Nombre de crèdits</b> | 60,00 Crèdits ECTS               |
| <b>Matrícula</b>         | 3.000 euros (import preu públic) |

## Requisits d'accés

|                          |         |
|--------------------------|---------|
| <b>Modalitat</b>         | On-line |
| <b>Lloc d'impartició</b> | Online  |

## Horari

## Direcció

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|---------------------|---|
| <b>Organitzador</b> | Escola Tècnica Superior d'Enginyeria (ETSE-UV)  |
| <b>Direcció</b>     | José Gabriel Torres País<br>Profesor/a Titular de Universidad. Departament d'Enginyeria Electrònica. Universitat de València<br>María Teresa Gil Agustí<br>Responsable del área de Química Aplicada, Biotecnología y Nuevos Materiales. Instituto Tecnológico de la Energía<br>Consuelo Gómez-Zarzuela Quel<br>Technical training team leader. Power Electronics S.L. |

## Terminis

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|------------------------------|-------------------|
| <b>Preinscripció al curs</b> | Fins a 01/11/2024 |
| <b>Data inici</b>            | Novembre 2024     |
| <b>Data fi</b>               | Juliol 2025       |

## Més informació

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|----------------|--|
| <b>Telèfon</b> | 961 603 000  |
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## PROGRAMA

- 1.1 The energy system: present and future.
- 1.2 Importance of energy storage - flexibility needs and the role of battery storage.
- 1.3 Introduction to batteries.
- 1.4 Battery storage: potential and applications and challenges.
- 1.5 Battery Energy Storage: Grid-Scale.
- 1.6 Battery Energy Storage: Behind the meter.
- 1.7 Battery Energy Storage: Electrical Mobility.
- 1.8 Battery Energy Storage: Industrial Applications.

- 2.1 Electrochemical concepts behind batteries.

- 3.1 Current Battery Technologies.
- 3.2 Emerging battery Technologies.
- 3.3 Raw materials.

- 4.1 Production and manufacturing.

- 5.1 Introduction to Power Electronic Converters.
- 5.2 Power conversion and efficiency in battery system.

- 6.1 Power electronics and grid connection.
- 6.2 Battery management systems.

- 7.1 Battery testing.
- 7.2 Modeling, control and simulation of batteries.

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8.1 Batteries end of life: Reuse and recycling.

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- 9.1 Business Modeling.
  - 9.2 Investment scenarios and business models for battery energy storage systems.
  - 9.3 European Legislation and Policy.
  - 9.4 Cost assessment of battery-based storage solutions.
  - 9.5 Business Models and Business examples.

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The contents of the Master's Thesis will be different depending on the specific objectives of the project to be carried out. The subject of the Master's thesis can be all those that are specific to the Master's studies. In particular, all kinds of systems and devices may be designed, using any procedure as current engineering allows. The Master's Thesis may also include research and development work, as well as and the theoretical or numerical modeling of systems and their components. It may also be considered as subjects of the Master's Thesis may also include studies related to the contents of the Degree and related to equipment, factories, installations, services, planning, management or operation. Therefore, the contents of the the subject will be different depending on the specific Master's thesis selected by the student.

## PROFESSORAT

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### Rocío Cano Jiménez

Battery Technician

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### Daniel Valero Beltrá

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### Leire Zubizarreta Saenz De Zaitegui

Doctora en Química. Área de Química Aplicada, Biotecnología y Nuevos Materiales del Instituto Tecnológico de la Energía (ITE)