

820126 - IEBAT2EE - Low and High Voltage Electrical Installations II

Coordinating unit: 295 - EEBE - Barcelona East School of Engineering
Teaching unit: 709 - EE - Department of Electrical Engineering
Academic year: 2017
Degree: BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Teaching unit Compulsory)
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ECTS credits: 6 Teaching languages: Spanish

Teaching staff

Coordinator: JUAN MORÓN ROMERA
Others: JUAN MORÓN ROMERA

Opening hours

Timetable: Hours published on the bulletin board.
Make an interview by e-mail

Degree competences to which the subject contributes

Specific:

1. Carry out calculations for the design of high voltage electrical installations.
2. Carry out calculations for the design of low and medium voltage electrical installations.

Transversal:

4. SELF-DIRECTED LEARNING - Level 3. Applying the knowledge gained in completing a task according to its relevance and importance. Deciding how to carry out a task, the amount of time to be devoted to it and the most suitable information sources.

Teaching methodology

Magistral classes for theory sessions, individual and group work, and project based learning.

Learning objectives of the subject

- To show how design high voltage electrical installations.
- To show the use of Standards and Regulations for electrical installations.
- To show the main elements of an installation (functionality, characteristics of operation, main applications)
- To show how draw an electrical diagram and its symbols.
- To analyze the causes of faults, its effects and protection methods.
- To show methodology for design, sizing and optimization the elements for a high voltage electrical installation.



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Study load

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|---------------------------|---------------------|-----|--------|
| Total learning time: 150h | Hours large group: | 45h | 30.00% |
| | Hours medium group: | 0h | 0.00% |
| | Hours small group: | 15h | 10.00% |
| | Guided activities: | 0h | 0.00% |
| | Self study: | 90h | 60.00% |

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Content

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| Unit 1. Electrical Installation for High Voltage: Generalities. | Learning time: 12h Theory classes: 3h Self study : 9h |
| Unit 2. Electrical Calculations Techniques. | Learning time: 35h Theory classes: 12h Laboratory classes: 4h Self study : 19h |
| Unit 3. Main elements for HV installations | Learning time: 21h Theory classes: 9h Self study : 12h |
| Unit 4. Protective Relays | Learning time: 15h Theory classes: 6h Self study : 9h |
| Unit 5. Ground installation | Learning time: 19h Theory classes: 4h 30m Laboratory classes: 4h Self study : 10h 30m |
| Unit 6. Distribution Installation | Learning time: 25h Theory classes: 4h 30m Laboratory classes: 3h Self study : 17h 30m |



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| Unit 7. Substation Installation | Learning time: 23h Theory classes: 6h Laboratory classes: 4h Self study : 13h |
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Qualification system

Middle term exam: 20%
Class exercises:10%
Homework:10%
Laboratory work:20%
Self Study:10%
Final test: 30%
No proof of reassessment.

Regulations for carrying out activities

Timetable established by school

Bibliography

Basic:

Enríquez Harper, Gilberto. Elementos de diseño de subestaciones eléctricas. 2a ed. México [etc.]: Limusa, cop. 2004. ISBN 9789681862220.

Others resources: