



Course guides

820126 - IEBAT2EE - Low and High Voltage Electrical Installations II

Last modified: 19/06/2020

Unit in charge: Barcelona East School of Engineering
Teaching unit: 709 - DEE - Department of Electrical Engineering.
Degree: BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Compulsory subject).
Academic year: 2020 **ECTS Credits:** 6.0 **Languages:** Spanish

LECTURER

Coordinating lecturer: JUAN MORÓN ROMERA

Others:

Primer quadrimestre:
EDORTA LÓPEZ URZAINQUI - T11, T12, T13
JUAN MORÓN ROMERA - T11, T12, T13

Segon quadrimestre:
JUAN MORÓN ROMERA - M11, M12, M13

REQUIREMENTS

INSTAL·LACIONS ELÈCTRIQUES DE BAIXA I ALTA TENSIÓ I - Prerequisit

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.



STUDY LOAD

| Type | Hours | Percentage |
|-------------------|-------|------------|
| Hours small group | 15,0 | 10.00 |
| Hours large group | 45,0 | 30.00 |
| Self study | 90,0 | 60.00 |

Total learning time: 150 h

CONTENTS

Unit 1. Electrical Installation for High Voltage: Generalities.

Full-or-part-time: 12h

Theory classes: 3h

Self study : 9h

Unit 2. Electrical Calculations Techniques.

Full-or-part-time: 35h

Theory classes: 12h

Laboratory classes: 4h

Self study : 19h

Unit 3. Main elements for HV installations

Full-or-part-time: 21h

Theory classes: 9h

Self study : 12h

Unit 4. Protective Relays

Full-or-part-time: 15h

Theory classes: 6h

Self study : 9h

Unit 5. Ground installation

Full-or-part-time: 19h

Theory classes: 4h 30m

Laboratory classes: 4h

Self study : 10h 30m



Unit 6. Distribution Installation

Full-or-part-time: 25h
Theory classes: 4h 30m
Laboratory classes: 3h
Self study : 17h 30m

Unit 7. Substation Installation

Full-or-part-time: 23h
Theory classes: 6h
Laboratory classes: 4h
Self study : 13h

GRADING SYSTEM

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

EXAMINATION RULES.

Timetable established by school

BIBLIOGRAPHY

Basic:

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