Course guides
820029 - SHB - Safety in Hospitals

Unit in charge: Barcelona East School of Engineering
Teaching unit: 710 - EEL - Department of Electronic Engineering.
460 - INTE - Institute of Energy Technologies.
Degree: BACHELOR’S DEGREE IN BIOMEDICAL ENGINEERING (Syllabus 2009). (Compulsory subject).
Academic year: 2020 ECTS Credits: 6.0 Languages: Catalan, Spanish

LECTURER
Coordinating lecturer: PERE JOAN RIU COSTA
Others: Segon quadrimestre:
FRANCISCO BOGONEZ FRANCO - M12, M14
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REQUIREMENTS
EQUIPS DE MONITORATGE, DIAGNÒSTIC I TERÀPIA i ENGINYERIA CLÍNICA - Irequisits

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES
Specific:
2. Manage health and safety in hospitals.

Transversal:
1. EFFECTIVE USE OF INFORMATION RESOURCES - Level 3. Planning and using the information necessary for an academic assignment (a final thesis, for example) based on a critical appraisal of the information resources used.

TEACHING METHODOLOGY
Expositive Classes, cooperative learning and project based learning

LEARNING OBJECTIVES OF THE SUBJECT
Understand the concept of risk and acquire knowledge of the methodologies used to assess risk. Understand the origin of dangers in hospital environments. Understand the relationship between safety and functionality in a medical device. Apply the concept of safety to medical devices and facilities. Identify the applicable standards and legislation. Understand the responsibility of the manufacturer, the installer and the end user with respect to safety in a hospital environment.

STUDY LOAD

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self study</td>
<td>90,0</td>
<td>60.00</td>
</tr>
<tr>
<td>Hours small group</td>
<td>15,0</td>
<td>10.00</td>
</tr>
<tr>
<td>Hours large group</td>
<td>45,0</td>
<td>30.00</td>
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</tbody>
</table>
**Total learning time:** 150 h

## CONTENTS

### Risk Assessment

**Description:**

**Specific objectives:**
Understand the concept of risk and the methodologies used to assess it.

**Full-or-part-time:** 10h
- Theory classes: 4h
- Self study: 6h

### Sources of risk in hospital environments

**Description:**

**Specific objectives:**
Understand the relationship between safety and functionality in medical devices. Gain knowledge of the biological basis associated to dangers in hospitals and the different sources of risk.

**Full-or-part-time:** 28h
- Theory classes: 12h
- Self study: 16h

### Safety of medical devices

**Description:**

**Specific objectives:**
Apply the risk concepts to different medical devices

**Full-or-part-time:** 26h
- Theory classes: 8h
- Laboratory classes: 6h
- Self study: 12h
Safety of installations

**Description:**

**Specific objectives:**
Apply the concept of risk to different medical facilities

**Full-or-part-time:** 30h  
Theory classes: 10h  
Laboratory classes: 4h  
Self study : 16h

Safety Standards

**Description:**

**Specific objectives:**
Be able to identify the relevant standards related to safety of medical devices and facilities.

**Full-or-part-time:** 10h  
Theory classes: 4h  
Self study : 6h

Project on risk analysis and safety design of a medical device/facility

**Description:**
Project based learning activity on the analysis of the risk associated with a particular medical device or facility, the design of the safety aspects and the identification of the applicable safety standards.

**Specific objectives:**
To be able to synthesize all the aspects related to safety of a medical device or facility

**Related activities:**
Public presentation of the work performed

**Full-or-part-time:** 46h  
Theory classes: 7h  
Laboratory classes: 5h  
Self study : 34h

**GRADING SYSTEM**

Individual and group work will be assessed by means of tests, assignments and work presentations.  
Final exam: 35%  
Project: 25%  
Lab activities/reports: 20%  
Half-term test: 20%

There is NO re-testing in this subject
BIBLIOGRAPHY

Basic: