Course guides
820426 - FAB - Manufacturing

Unit in charge: Barcelona East School of Engineering
Teaching unit: 712 - EM - Department of Mechanical Engineering.

Degree: BACHELOR’S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Compulsory subject).

Academic year: 2021 ECTS Credits: 6.0 Languages: Catalan, Spanish

LECTURER

Coordinating lecturer: JOSE ANTONIO TRAVIESO RODRIGUEZ

Others: Primer quadrimestre:
JUAN VICENTE RODRIGUEZ REDONDO - M11, M12, M13, M14
DANIEL ROMANILLOS DELGADO - T11, T12, T13
ORIOL TRAVER RAMOS - T11, T12, T13
JOSE ANTONIO TRAVIESO RODRIGUEZ - M11, M12, M13, M14

Segon quadrimestre:
SERGIO CALLES VICO - M13
JUAN VICENTE RODRIGUEZ REDONDO - M11, M12, M15, M16
DANIEL ROMANILLOS DELGADO - M14, T11, T12, T13, T14
DOMINGO SANTOS ESPADA - T11, T12, T13, T14
JOSE ANTONIO TRAVIESO RODRIGUEZ - M11, M12, M13, M14, M15, M16

REQUIREMENTS

AMPLIACIÓ D’EXPRESSIÓ GRÀFICA. DISSENY MECÀNIC - Prerequisit
CIÈNCIA I ENGINYERIA DE MATERIALS - Precorequisit

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
CEMEC-19. Understand and apply graphic engineering techniques.

Transversal:
1. 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

In the theory and problems classes we will present the items listed in this subject guide, and we’ll propose issues and little exercises to do in the classroom and as homework.

For explanations will be used: the blackboard, transparencies, PowerPoint, CD-ROM, Flash Drive, Video and Multimedia Systems. Also in class we will show samples of parts, components and small tools related to the subject matter.

The students will have notes and documentation in virtual space ATENEA UPC Campus.
LEARNING OBJECTIVES OF THE SUBJECT

General Objectives
1. Knowledge of parts manufacturing.
2. Create the ability to control and verify products.
3. Develop the ability to solve problems of metrology and manufacturing processes.
4. To know the rules to make the parts.
5. Ability to select the optimal manufacturing process of a piece.

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 large group</td>
<td>45,0</td>
<td>30.00</td>
</tr>
<tr>
<td>Hours small group</td>
<td>15,0</td>
<td>10.00</td>
</tr>
</tbody>
</table>

Total learning time: 150 h

CONTENTS

(ENG) 1. Metrologia i Qualitat

Description:

Specific objectives:
· Know and identify the instruments and measuring machines used to do the metrology of the pieces.
· Know the most important regulations to take into account in order to make measurements in mechanics.
· Apply to the design of a piece everything related to dimensional and geometric adjustments and tolerances, and to relate these concepts to the processes and operations necessary to manufacture a piece.

Full-or-part-time: 30h 30m
Theory classes: 7h 30m
Laboratory classes: 6h
Self study: 17h

(ENG) 2. Fabricació de peces per Formació

Full-or-part-time: 21h 30m
Theory classes: 7h 30m
Self study: 14h

(ENG) 3. Fabricació de peces per arrancament de Ferritja

Full-or-part-time: 40h 30m
Theory classes: 10h 30m
Laboratory classes: 4h
Self study: 26h
# ENG 4. Máquines de Control Numèric i Fabricació Flexible

**Full-or-part-time:** 17h  
Theory classes: 6h  
Laboratory classes: 2h  
Self study: 9h

# ENG 5. Fabricació de peces per Deformació Plàstica

**Full-or-part-time:** 21h  
Theory classes: 6h  
Laboratory classes: 2h  
Self study: 13h

# ENG 6. Processos de fabricació de materials plàstics

**Full-or-part-time:** 7h  
Theory classes: 3h  
Self study: 4h

# ENG 7. Soldadura i Tall de peces

**Full-or-part-time:** 12h 30m  
Theory classes: 4h 30m  
Self study: 8h

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**GRADING SYSTEM**

Parcial tests 35 % / Generic proficiency (Assessed through final test): 10 % / Laboratories: 20 % / Final Test: 35 %  
This subject does not have re-evaluation test

**EXAMINATION RULES.**

There are two parcial test. Each one of them is to evaluate topics 1 and 2 (1s test) and 3 and 4 (2d test). They will be develope in 1:30 hour. There are also a final test to evaluate the other topics, and at the same time you will do the Laboratories test. In this subject there are not re-evaluation exam

**BIBLIOGRAPHY**

**Basic:**

**Complementary:**
RESOURCES

Hyperlink: