Course guides
240408 - 240408 - History of Invention and Technological Innovation

Unit in charge: Barcelona School of Industrial Engineering
Teaching unit: 749 - MAT - Department of Mathematics.
Degree: BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2010). (Optional subject).
BACHELOR'S DEGREE IN MATERIALS ENGINEERING (Syllabus 2010). (Optional subject).
BACHELOR'S DEGREE IN INDUSTRIAL TECHNOLOGY ENGINEERING (Syllabus 2010). (Optional subject).

Academic year: 2020  ECTS Credits: 3.0  Languages: Catalan

LECTURER

Coordinating lecturer: CARLES PUIG PLA

Others:

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Transversal:
07 AAT. SELF-DIRECTED LEARNING. Detecting gaps in one's knowledge and overcoming them through critical self-appraisal. Choosing the best path for broadening one's knowledge.
04 COE. EFFICIENT ORAL AND WRITTEN COMMUNICATION. Communicating verbally and in writing about learning outcomes, thought-building and decision-making. Taking part in debates about issues related to the own field of specialization.
05 TEQ. TEAMWORK. Being able to work as a team player, either as a member or as a leader. Contributing to projects pragmatically and responsibly, by reaching commitments in accordance to the resources that are available.

TEACHING METHODOLOGY

Presentation sessions of different topics, supplemented by the use of ICT and audiovisual resources.
Cooperative learning based on case studies; oral presentations and delivering papers by students.
Case studies preparation, based on library resources and web resources.

LEARNING OBJECTIVES OF THE SUBJECT

General purpose
To assess the history of invention and technological innovation

Specific objectives:
At the end of the course the student should be able to:

1. Explain, in its historical context, major technological achievements of the ancient world.
2. Recognize the technological contributions of medieval times.
3. Describe and evaluate fundamental inventions associated with Industrial Revolution.
4. Identify technological innovations that have characterized the twentieth century.
5.-Explain the theory of technological evolution of Georges Basalla.
6.-Know how to use library resources and the Internet to find learning materials related to the history of invention and technological innovation.
STUDY LOAD

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Self study</td>
<td>45,0</td>
<td>60.00</td>
</tr>
<tr>
<td>Hours medium group</td>
<td>30,0</td>
<td>40.00</td>
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</tbody>
</table>

Total learning time: 75 h

CONTENTS

Item 1 Technological achievements in the ancient world

Description:

Full-or-part-time: 20h
Theory classes: 8h
Self study: 12h

Item 2 From Medieval Technology to Modern Age

Description:
Wind energy and hydropower. Craftsmanship. Windmills; waterwheels and forging hammers. Machines for grinding grain, wood cutting machines.

Full-or-part-time: 20h
Theory classes: 8h
Self study: 12h

Item 3 From Steam Power ton the Industrial Revolution and Internet

Description:

Full-or-part-time: 35h
Theory classes: 14h
Self study: 21h
GRADING SYSTEM

The final mark will be the result of four tests or evaluations. Their respective weightings are:
Issues 1 and 2 (40%)
Issues 3 (30%)
Oral presentation and written work group (30%)

EXAMINATION RULES.

Compulsory oral presentation in classroom

BIBLIOGRAPHY

Basic:

Complementary:

RESOURCES

Other resources:
Papers and documents on the history of invention and technological innovation that will be available to students
ICT resources with audiovisual information