240408 - History of Invention and Technological Innovation

Coordinating unit: 240 - ETSEIB - Barcelona School of Industrial Engineering
Teaching unit: 749 - MAT - Department of Mathematics
Academic year: 2017
Degree: BACHELOR’S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2010). (Teaching unit Optional)
BACHELOR’S DEGREE IN INDUSTRIAL TECHNOLOGY ENGINEERING (Syllabus 2010). (Teaching unit Optional)
BACHELOR’S DEGREE IN MATERIALS ENGINEERING (Syllabus 2010). (Teaching unit Optional)
ECTS credits: 3
Teaching languages: Catalan

Teaching staff
Coordinator: CARLES PUIG PLA

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>Total learning time: 75h</th>
<th>Hours medium group:</th>
<th>30h</th>
<th>40.00%</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Self study:</td>
<td>45h</td>
<td>60.00%</td>
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</table>

Last update: 01-06-2017
### Content

<table>
<thead>
<tr>
<th>Item</th>
<th>Learning time: 20h</th>
<th>Learning time: 35h</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Item 1 Technological achievements in the ancient world</strong></td>
<td>Theory classes: 8h</td>
<td>Theory classes: 14h</td>
</tr>
<tr>
<td><strong>Item 2 From Medieval Technology to Modern Age</strong></td>
<td>Self study: 12h</td>
<td>Self study: 21h</td>
</tr>
<tr>
<td><strong>Item 3 From Steam Power to the Industrial Revolution and Internet</strong></td>
<td><strong>Learning time:</strong> 20h</td>
<td><strong>Learning time:</strong> 35h</td>
</tr>
</tbody>
</table>

#### Description:

**Item 1 Technological achievements in the ancient world**

**Item 2 From Medieval Technology to Modern Age**

**Item 3 From Steam Power to the Industrial Revolution and Internet**
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%)

### Regulations for carrying out activities

Compulsory oral presentation in classroom

### Bibliography

#### Basic:


#### Complementary:


#### Others resources:

Papers and documents on the history of invention and technological innovation that will be available to students

ICT resources with audiovisual information