Course guide
220280 - 220280 - Heat and Mass Transfer

Unit in charge: Terrassa School of Industrial, Aerospace and Audiovisual Engineering
Teaching unit: 724 - MMT - Department of Heat Engines.

Degree: MASTER'S DEGREE IN INDUSTRIAL ENGINEERING (Syllabus 2013). (Optional subject).
MASTER'S DEGREE IN RESEARCH IN MECHANICAL ENGINEERING (Syllabus 2021). (Compulsory subject).

Academic year: 2022  ECTS Credits: 5.0  Languages: Catalan, Spanish

LECTURER

Coordinating lecturer: Oliva Llena, Asensio

Others: Perez Segarra, Carlos David
Castro Gonzalez, Jesus
Trias Miquel, Francesc Xavier

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
1. Knowledge and ability to analyze the processes of heat transfer that allows the design and calculation of equipment and thermal applications.

Transversal:
2. EFFECTIVE USE OF INFORMATION RESOURCES: Managing the acquisition, structuring, analysis and display of data and information in the chosen area of specialisation and critically assessing the results obtained.

TEACHING METHODOLOGY

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LEARNING OBJECTIVES OF THE SUBJECT

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STUDY LOAD

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self study</td>
<td>80,0</td>
<td>64.00</td>
</tr>
<tr>
<td>Hours small group</td>
<td>15,0</td>
<td>12.00</td>
</tr>
<tr>
<td>Hours large group</td>
<td>30,0</td>
<td>24.00</td>
</tr>
</tbody>
</table>

Total learning time: 125 h
## CONTENTS

### (ENG) Mòdul 1: Introducció. Transferència de calor per conducció

**Related competencies:**
CEETERM1. Knowledge and ability to analyze the processes of heat transfer that allows the design and calculation of equipment and thermal applications.
CT4. EFFECTIVE USE OF INFORMATION RESOURCES: Managing the acquisition, structuring, analysis and display of data and information in the chosen area of specialisation and critically assessing the results obtained.

**Full-or-part-time:** 40h  
Theory classes: 10h  
Laboratory classes: 5h  
Self study : 25h

### (ENG) Mòdul 2: Transferència de calor per radiació

**Related competencies:**
CEETERM1. Knowledge and ability to analyze the processes of heat transfer that allows the design and calculation of equipment and thermal applications.
CT4. EFFECTIVE USE OF INFORMATION RESOURCES: Managing the acquisition, structuring, analysis and display of data and information in the chosen area of specialisation and critically assessing the results obtained.

**Full-or-part-time:** 40h  
Theory classes: 10h  
Laboratory classes: 5h  
Self study : 25h

### (ENG) Mòdul 3: Transferència de calor per convecció

**Related competencies:**
CEETERM1. Knowledge and ability to analyze the processes of heat transfer that allows the design and calculation of equipment and thermal applications.
CT4. EFFECTIVE USE OF INFORMATION RESOURCES: Managing the acquisition, structuring, analysis and display of data and information in the chosen area of specialisation and critically assessing the results obtained.

**Full-or-part-time:** 45h  
Theory classes: 10h  
Laboratory classes: 5h  
Self study : 30h
**ACTIVITIES**

**(ENG) Classes de Teoria**

**Related competencies:**
CEETERM1. Knowledge and ability to analyze the processes of heat transfer that allows the design and calculation of equipment and thermal applications.
CT4. EFFECTIVE USE OF INFORMATION RESOURCES: Managing the acquisition, structuring, analysis and display of data and information in the chosen area of specialisation and critically assessing the results obtained.

**Full-or-part-time:** 37h
Theory classes: 20h
Laboratory classes: 2h
Self study: 15h

**(ENG) Classes de problemes**

**Related competencies:**
CEETERM1. Knowledge and ability to analyze the processes of heat transfer that allows the design and calculation of equipment and thermal applications.
CT4. EFFECTIVE USE OF INFORMATION RESOURCES: Managing the acquisition, structuring, analysis and display of data and information in the chosen area of specialisation and critically assessing the results obtained.

**Full-or-part-time:** 53h
Theory classes: 10h
Laboratory classes: 13h
Self study: 30h

**(ENG) Treball de curs**

**Related competencies:**
CEETERM1. Knowledge and ability to analyze the processes of heat transfer that allows the design and calculation of equipment and thermal applications.
CT4. EFFECTIVE USE OF INFORMATION RESOURCES: Managing the acquisition, structuring, analysis and display of data and information in the chosen area of specialisation and critically assessing the results obtained.

**Full-or-part-time:** 30h
Self study: 30h

**(ENG) Examen primer parcial**

**Related competencies:**
CEETERM1. Knowledge and ability to analyze the processes of heat transfer that allows the design and calculation of equipment and thermal applications.
CT4. EFFECTIVE USE OF INFORMATION RESOURCES: Managing the acquisition, structuring, analysis and display of data and information in the chosen area of specialisation and critically assessing the results obtained.

**Full-or-part-time:** 2h
Theory classes: 2h
Related competencies:
CEETERM1. Knowledge and ability to analyze the processes of heat transfer that allows the design and calculation of equipment and thermal applications.
CT4. EFFECTIVE USE OF INFORMATION RESOURCES: Managing the acquisition, structuring, analysis and display of data and information in the chosen area of specialisation and critically assessing the results obtained.

Full-or-part-time: 3h
Theory classes: 3h

GRADING SYSTEM

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BIBLIOGRAPHY

Basic:

Complementary:

RESOURCES

Audiovisual material:
- Apunts fets pel professorat de l'assignatura. Resource