

Heat Transmission and Thermotechnics

Code: 106047
ECTS Credits: 9

Degree	Type	Year	Semester
2500897 Chemical Engineering	OB	2	2

Contact

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Teaching groups languages

You can check it through this [link](#). To consult the language you will need to enter the CODE of the subject. Please note that this information is provisional until 30 November 2023.

Teachers

Catalina Canovas Bermejo

Prerequisites

Refer to the Guide in catalan for details

Objectives and Contextualisation

Refer to the Guide in catalan for details

Competences

- Communication
- Demonstrate knowledge of the different reaction, separation and processing operations for materials, and transport and circulation of fluids involved in the industrial processes of chemical engineering.
- Develop personal work habits.
- Display knowledge of the principles of machines and mechanisms.
- Objectively compare and select different technical options for chemical processes.
- Show an understanding of the role of chemical engineering in the prevention and resolution of environmental and energy problems, in accordance with the principles of sustainable development.
- Understand and apply the basic principles on which chemical engineering is founded, and more precisely: balances of matter, energy and thermodynamic momentum, phase equilibrium and kinetic chemical equilibrium of the physical processes of matter, energy and momentum transfer, and kinetics of chemical reactions

Learning Outcomes

1. Apply matter and energy balance to energy systems.
2. Apply the principles of machines and mechanisms in power plants.
3. Communicate efficiently, orally and in writing, knowledge, results and skills, both professionally and to non-expert audiences.
4. Enumerate, describe and compare the different options for applications used in energy systems.
5. Evaluate the energy consumption of systems.
6. Identify and evaluate energy systems and their energetic efficiency.
7. Identify the fluid circulation operations involved in the design of heat transmission systems.
8. Objectively compare and select the different technical options for heat transmission systems.
9. Work autonomously.

Content

Refer to the Guide in catalan for details

Methodology

Refer to the Guide in catalan for details

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Practical lectures	23	0.92	1, 2, 5, 8, 3, 4, 6, 7, 9
Seminars	7	0.28	1, 2, 5, 8, 3, 4, 6, 7, 9
Theoretical lectures	45	1.8	1, 2, 5, 8, 4, 6, 7
Type: Autonomous			
Homework	25	1	1, 2, 5, 8, 3, 4, 6, 7, 9
Solving practical exercises	65	2.6	1, 2, 5, 8, 3, 4, 6, 7, 9
Study	50	2	1, 2, 5, 8, 4, 6, 7, 9

Assessment

Refer to the Guide in catalan for details

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
HEAT TRANSFER: Homework	15	0	0	8, 3, 7, 9
HEAT TRANSFER: Short exams	10	1	0.04	8, 3, 7, 9
HEAT TRANSFER: Test 1	37,5	2	0.08	8, 3, 7, 9
HEAT TRANSFER: Test 2	37,5	2	0.08	1, 8, 3, 4, 9
THERMOTECNIA: Activity A	40	2	0.08	1, 2, 5, 3, 4, 6, 9
THERMOTECNIA: Activity B	35	2	0.08	1, 2, 5, 3, 4, 6, 9
THERMOTECNIA: Activity C	15	0	0	1, 2, 5, 3, 4, 6, 9
THERMOTECNIA: Activity D	10	1	0.04	1, 2, 5, 3, 4, 6, 9

Bibliography

Refer to the Guide in catalan for details

Software

Refer to the Guide in catalan for details