

220281 - Refrigeration and Air Conditioning

Coordinating unit: 205 - ESEIAAT - Terrassa School of Industrial, Aerospace and Audiovisual Engineering
 Teaching unit: 724 - MMT - Department of Heat Engines
 Academic year: 2019
 Degree: MASTER'S DEGREE IN INDUSTRIAL ENGINEERING (Syllabus 2013). (Teaching unit Optional)
 ECTS credits: 5 Teaching languages: Catalan

Teaching staff

Coordinator: MANUEL QUERA MIRO
 Others: OSCAR RIBE TORIJANO

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.
2. Knowledge and capability to design and calculate equipment and refrigeration facilities (refrigeration and air conditioning).
3. Knowledge and ability to analyze, design, calculation and application of power cycles and alternative heat engines.
4. Knowledge about technology and applications of unconventional alternatives energy (geothermal energy, solar energy and fuel cells).

Learning objectives of the subject

1

Study load

Total learning time: 125h	Hours large group:	30h	24.00%
	Hours small group:	15h	12.00%
	Self study:	80h	64.00%

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Content

Item 1: Refrigeration	Learning time: 62h 30m Theory classes: 15h Laboratory classes: 7h 30m Self study : 40h
Description: 1.-	
Item 2: Air Conditioning	Learning time: 62h 30m Theory classes: 15h Laboratory classes: 7h 30m Self study : 40h
Description: 1.-	

Bibliography

Basic:

Çencel, Yunus A.; Boles, Michael A. Termodinámica [on line]. 7ª ed. México: McGraw-Hill, 2009 [Consultation: 22/05/2014]. Available on: <<http://site.ebrary.com/lib/upcatalunya/docDetail.action?docID=10747893&p00=9781456213381>>. ISBN 9786071507433.

Stoecker, Wilbert F. Industrial refrigeration handbook. New York [etc.]: McGraw-Hill, cop. 1998. ISBN 007061623X.

ASHRAE handbook: fundamentals. Atlanta: American Society of Heating, Refrigerating and Air-Conditioning Engineers, 2013. ISBN 9781936504473.

ASHRAE handbook: refrigeration. Atlanta: American Society of Heating, Refrigerating and Air-Conditioning Engineers, 2010. ISBN 9781936504732.

Wang, Shan K. Handbook of air conditioning and refrigeration. New York: McGraw-Hill, cop. 1993. ISBN 0070681384.

ASHRAE handbook: HVAC systems and equipment. Atlanta: American Society of Heating, Ventilating and Air-Conditioning Engineers, 2012. ISBN 9781933742342.

ASHRAE handbook: HVAC applications. Atlanta: American Society of Heating, Ventialting and Air-Conditioning Engineers, 2011. ISBN 9781936504084.