

[GAKK03] ENERGY EFFICIENCY IN BUILDINGS AND INDUSTRY

GENERAL INFORMATION

Studies	DEGREE IN ENERGY ENGINEERING		Subject	ENERGY AND SUSTAINABILITY	
Semester	1	Course	3	Mention / Field of specialisation	
Character	COMPULSORY		Language	ENGLISH	
Plan	2013		Total hours	28 class hours + 84.5 non-class hours = 112.5 total hours	
Credits	4,5	Hours/week	1.56		

FACULTY

GARRAMIOLA ALDAY, FERNANDO

REQUIRED PREVIOUS KNOWLEDGE

Subjects	Knowledge
(No specific previous subjects required)	(No previous knowledge required)

SKILLS

SKILLS	ECTS
G1A313 - To be able to work in multidisciplinary, multilingual environments, and to effectively communicate knowledge, procedures, results and ideas about energy both verbally and in writing.	0,36
G1A310 - To improve energy processes applied in the fields of construction, industrial and tertiary sector, to increase efficiency by applying knowledge of control, modelling and simulation of systems.	4,12
Total:	4,48

LEARNING RESULTS

RGA329 [!] *Mide onsumos eléctricos y térmicos, analiza e implementa las posibilidades de mejora de la eficiencia energética*

LEARNING ACTIVITIES

Individual study and work, tests and evaluations.

Classroom presentations of relevant concepts and procedures in participatory environments.

Individual and/or group project development, report writing and presentations.

CH	NCH	TH
	6 h.	6 h.
15 h.		15 h.
4 h.	20 h.	24 h.

EVALUATION SYSTEM

W

Individual written and oral tests to assess technical skills in the subject.

Exercises, case of study, simulation practices and practices in labs

Comments:

MAKE-UP MECHANISMS

Individual written test

Comments:

CH - Class hours: 19 h.

NCH - Non-class hours: 26 h.

TH - Total hours: 45 h.

RGA330 [!] *Gestiona la eficiencia energética en base a auditorías, implantación de energías renovables y normativa vigente.*

LEARNING ACTIVITIES

Classroom presentations of relevant concepts and procedures in participatory environments.

Individual and/or group project development, report writing and presentations.

Individual study and work, tests and evaluations.

CH	NCH	TH
7 h.		7 h.
	8,5 h.	8,5 h.
2 h.	5 h.	7 h.

EVALUATION SYSTEM

W

Individual written and oral tests to assess technical skills in the subject.

Exercises, case of study, simulation practices and practices in labs

Comments:

MAKE-UP MECHANISMS

Individual written test

Comments:

CH - Class hours: 9 h.

NCH - Non-class hours: 13,5 h.

TH - Total hours: 22,5 h.

RG331 [!] *Aplica conocimientos sobre eficiencia energética en edificación, industria y sector terciario en un entorno real o simulado*

LEARNING ACTIVITIES

CH

NCH

TH

Development, writing and presentation of group projects and/or POPBL.

36 h.

36 h.

EVALUATION SYSTEM

W

Project assessment. The following will be taken into account: 100%
(a) Throughout the project, continuous assessment of both the individual student and the team, regarding task performance; (b) On completion of the project, the solution provided by the team of students and the corresponding report; (c) Lastly, the oral defence of the project, taking into account both the knowledge acquired and the quality of the presentation, the reasoned justification of the principals and the ultimate reasons for proposing the chosen solution.

Comments:

MAKE-UP MECHANISMS

Continuos assessment

Comments:

CH - Class hours: 0 h.

NCH - Non-class hours: 36 h.

TH - Total hours: 36 h.

RG337 [!] *Define los objetivos, realiza la planificación para su consecución y su seguimiento sistemático coordinando su trabajo con los demás miembros del equipo.*

LEARNING ACTIVITIES

CH

NCH

TH

Development, writing and presentation of group projects and/or POPBL.

2 h.

2 h.

EVALUATION SYSTEM

W

Project assessment. The following will be taken into account: 100%
(a) Throughout the project, continuous assessment of both the individual student and the team, regarding task performance; (b) On completion of the project, the solution provided by the team of students and the corresponding report; (c) Lastly, the oral defence of the project, taking into account both the knowledge acquired and the quality of the presentation, the reasoned justification of the principals and the ultimate reasons for proposing the chosen solution.

Comments:

MAKE-UP MECHANISMS

Continuos assessment

Comments:

CH - Class hours: 0 h.

NCH - Non-class hours: 2 h.

TH - Total hours: 2 h.

RG338 [!] *Argumenta la selección de las teorías, métodos y/o tecnologías más relevantes que permitan definir y/o solucionar un problema utilizando bibliografía de calidad*

LEARNING ACTIVITIES

CH

NCH

TH

Development, writing and presentation of group projects and/or POPBL.

2 h.

2 h.

EVALUATION SYSTEM

W

Project assessment. The following will be taken into account: 100%
(a) Throughout the project, continuous assessment of both the individual student and the team, regarding task performance; (b) On completion of the project, the solution provided by the team of students and the corresponding report; (c) Lastly, the oral defence of the project, taking into account both the knowledge acquired and the quality of the presentation, the reasoned justification of the principals and the ultimate reasons for proposing the chosen solution.

Comments:

MAKE-UP MECHANISMS

Continuos assessment

Comments:

CH - Class hours: 0 h.

NCH - Non-class hours: 2 h.

TH - Total hours: 2 h.

RG339 [!] *Redacta informes técnicos de forma clara, concisa y estructurada siguiendo las especificaciones establecidas haciendo énfasis en la coherencias entre los distintos apartados .*

LEARNING ACTIVITIES

CH

NCH

TH

Development, writing and presentation of group projects and/or POPBL.

3 h.

3 h.

EVALUATION SYSTEM

W

MAKE-UP MECHANISMS

Project assessment. The following will be taken into account: 100%
(a) Throughout the project, continuous assessment of both the individual student and the team, regarding task performance; (b) On completion of the project, the solution provided by the team of students and the corresponding report; (c) Lastly, the oral defence of the project, taking into account both the knowledge acquired and the quality of the presentation, the reasoned justification of the principals and the ultimate reasons for proposing the chosen solution.

Continuos assessment

Comments:

Comments:

CH - Class hours: 0 h.

NCH - Non-class hours: 3 h.

TH - Total hours: 3 h.

RG340 [!] *Presenta y defiende el trabajo en público de forma clara, concisa y estructurada mediante el uso apropiado de soporte visual según las especificaciones establecidas.*

LEARNING ACTIVITIES

CH

NCH

TH

Development, writing and presentation of group projects and/or POPBL.

2 h.

2 h.

EVALUATION SYSTEM

W

MAKE-UP MECHANISMS

Project assessment. The following will be taken into account: 100%
(a) Throughout the project, continuous assessment of both the individual student and the team, regarding task performance; (b) On completion of the project, the solution provided by the team of students and the corresponding report; (c) Lastly, the oral defence of the project, taking into account both the knowledge acquired and the quality of the presentation, the reasoned justification of the principals and the ultimate reasons for proposing the chosen solution.

Continuos assessment

Comments:

Comments:

CH - Class hours: 0 h.

NCH - Non-class hours: 2 h.

TH - Total hours: 2 h.

CONTENTS

Energy efficiency in building:

Methodology for doing a enery audit.

Equipment needed for a energy audit.

Software CE3X for a Energy building certification in existing building.

Energy efficiency in industry:

Energy management system UNE-ISO 50001:2011Improvement points identificationMeasurement instrumentation.
Automation for improving the energy efficiency.

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
Moodle Platform	<p>Eficiencia energética en los edificios Jose M^a Fernández Salgado Primera edición . Año 2011 AMV ediciones ISBN: 978-84-96709-71-3</p> <p>Gestión de la eficiencia energética: cálculo del consumo, indicadores y mejora. Antonio Carretero Peña y Juan Manuel García Sánchez. AENOR ediciones. ISBN: 978-84-8143-752-2</p>