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330055 - TMS - Environmental Technologies and Sustainability

Coordinating unit: 330 - EPSEM - Manresa School of Engineering

Teaching unit: 750 - EMIT - Department of Mining, Industrial and ICT Engineering

Academic year: 2019

Degree: BACHELOR'S DEGREE IN ENERGY AND MINING RESOURCE ENGINEERING (Syllabus 2012). (Teaching unit Compulsory)
BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2016). (Teaching unit Compulsory)
BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2016). (Teaching unit Compulsory)
BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2016). (Teaching unit Compulsory)
BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Teaching unit Compulsory)
BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Teaching unit Compulsory)
BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Teaching unit Compulsory)
BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2009). (Teaching unit Compulsory)

ECTS credits: 6 Teaching languages: Catalan

Teaching staff

Coordinator: PERE BUSQUETS RUBIO

Others: CONCEPCION LAO LUQUE - JOSE FONT SOLDEVILA - MARIA PURA ALFONSO ABELLA - FRANCESC XAVIER DE LAS HERAS CISA

Degree competences to which the subject contributes

Specific:

1. (ENG) Coneixements bàsics i aplicació de tecnologies mediambientals i sostenibilitat.

Transversal:

2. SUSTAINABILITY AND SOCIAL COMMITMENT - Level 1. Analyzing the world¿s situation critically and systemically, while taking an interdisciplinary approach to sustainability and adhering to the principles of sustainable human development. Recognizing the social and environmental implications of a particular professional activity.
3. SUSTAINABILITY AND SOCIAL COMMITMENT - Level 2. Applying sustainability criteria and professional codes of conduct in the design and assessment of technological solutions.
4. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 1. Planning oral communication, answering questions properly and writing straightforward texts that are spelt correctly and are grammatically coherent.
5. TEAMWORK - Level 1. Working in a team and making positive contributions once the aims and group and individual responsibilities have been defined. Reaching joint decisions on the strategy to be followed.
6. SELF-DIRECTED LEARNING - Level 1. Completing set tasks within established deadlines. Working with recommended information sources according to the guidelines set by lecturers.
7. EFFECTIVE USE OF INFORMATION RESOURCES - Level 1. Identifying information needs. Using collections, premises and services that are available for designing and executing simple searches that are suited to the topic.

Learning objectives of the subject

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Study load

Total learning time: 150h	Hours large group:	45h	30.00%
	Hours medium group:	0h	0.00%
	Hours small group:	15h	10.00%
	Guided activities:	0h	0.00%
	Self study:	90h	60.00%

Content

(ENG) 1. SOSTENIBILITAT	Learning time: 50h Theory classes: 15h Laboratory classes: 5h Self study : 30h
(ENG) 2. TECNOLOGIES AMBIENTALS	Learning time: 50h Theory classes: 15h Laboratory classes: 5h Self study : 30h
(ENG) 3. GESTIÓ AMBIENTAL	Learning time: 50h Theory classes: 15h Laboratory classes: 5h Self study : 30h

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Planning of activities

(ENG) SOSTENIBILITAT: ACTIVITATS 1, 2, 3, 4 I 5 (CONTINGUT 1)	Hours: 15h Laboratory classes: 5h Self study: 10h

(ENG) TECNOLOGIES AMBIENTALS: ACTIVITATS 6, 7, 8, 9 I 10 (CONTINGUT 2)	Hours: 15h Laboratory classes: 5h Self study: 10h

(ENG) GESTIÓ AMBIENTAL: ACTIVITATS 11, 12, 13 I 14	Hours: 15h Laboratory classes: 5h Self study: 10h

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Bibliography

Basic:

Mulder, K., ed. Desarrollo sostenible para ingenieros [on line]. Barcelona: Edicions UPC, 2007 [Consultation: 05/03/2018]. Available on: <http://hdl.handle.net/2099.3/36831>. ISBN 9788483018927.

Masters, Gilbert M.; Ela, Wendell P. Introducción a la ingenieria medioambiental. 3ª ed. Madrid: Prentice Hall, 2008. ISBN 9788483224441.

Xercavins, J., i altres. Desarrollo sostenible [on line]. Barcelona: Edicions UPC, 2005 [Consultation: 05/03/2018]. Available on: <http://hdl.handle.net/2099.3/36752>. ISBN 8483018055.

Maymó, Jaume, coord. Ecoproducte, ecodisseny. Barcelona: Museu de les Arts Decoratives, 2005. ISBN 8476091664.

Guía para el desarrollo de la norma de ecodiseño UNE 150301:2003, base de ISO 14006: evaluación de aspectos ambientales de producto [on line]. 3ª ed. Bilbao: IHOBE, 2011 [Consultation: 14/06/2019]. Available on: <http://www.euskadi.eus/contenidos/documentacion/une150301/es_def/adjuntos/PUB-2004-038-f-C-001_UNE%20CAST.pdf>.

Fiksel, Joseph, ed. Ingeniería de diseño medioambiental: DFE :desarrollo integral de productos y procesos ecoeficientes. Madrid: McGraw-Hill, 1997. ISBN 8448107527.

Mackenzie, Dorothy. Green design: design for the environment. London: Laurence King, 1991. ISBN 1856690962.

Tchobanoglous, G.; Theisen, H.; Vigil, S. Gestión integral de residuos sólidos. Madrid: McGraw-Hill, 1994. ISBN 8448118308.

Ayres, Robert U.; Ayres, Leslie W. Industrial ecology: towards closing the materials cycle. Cheltenham: Edward Elgar, 1996. ISBN 1858983975.

Sadgrove, Kit. La ecología aplicada a la empresa. Madrid: Deusto, 1993. ISBN 8423412164.

Bringezu, S.; Moriguchi, Y. "Material flow analysis". Ayres, R. U.; Ayres, L. W. A handbook of industrial ecology. Nothampton: Edward Elgar, 2001. p. 79-90.

Clemente, G.; Sanjuán, N.; Vivancos, J. L., eds. Análisis de ciclo de vida: aspectos metodológicos y casos prácticos. Valencia: Universidad Politécnica de Valencia, 2005. ISBN 8497058526.

Complementary:

ISO. UNE-EN ISO 14001:2015: Sistemas de gestión ambiental [on line]. Géneve: ISO, 2015 [Consultation: 14/06/2019]. Available on: <https://discovery.upc.edu/iii/encore/record/C__Rb1374799?lang=cat>.

ISO. UNE-EN ISO 14040:2006: Gestión ambiental. Análisis del ciclo de vida. Principios y marco de referencia [on line]. Géneve: ISO, 2006 [Consultation: 14/06/2019]. Available on: <https://discovery.upc.edu/iii/encore/record/C__Rb1374799?lang=cat>.

Others resources: