

330522 - TPTM - Process Technologies and Materials Transformation

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 AUTOMOTIVE ENGINEERING (Syllabus 2017). (Teaching unit Compulsory)
ECTS credits: 6 Teaching languages: Catalan, Spanish

Teaching staff

Coordinator: Riera Colom, Maria Dolores
Others: Soler Conde, Marc Antoni

Degree competences to which the subject contributes

Basic:

CB3. That students have the ability to gather and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical issues.

CB5. Students have developed those learning skills necessary to undertake further studies with a high degree of autonomy.

Specific:

CE13. Knowledge and application of production and manufacturing systems.

Generical:

CG3. Knowledge in basic and technological subjects that will enable them to learn new methods and theories and give them the versatility to adapt to new situations.

CG4. Ability to solve problems with initiative, decision-making, creativity, critical reasoning and to communicate and transmit knowledge, skills and skills in the field of automotive engineering.

Transversal:

1. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 2. Using strategies for preparing and giving oral presentations. Writing texts and documents whose content is coherent, well structured and free of spelling and grammatical errors.
2. TEAMWORK - Level 2. Contributing to the consolidation of a team by planning targets and working efficiently to favor communication, task assignment and cohesion.
3. EFFECTIVE USE OF INFORMATION RESOURCES - Level 2. Designing and executing a good strategy for advanced searches using specialized information resources, once the various parts of an academic document have been identified and bibliographical references provided. Choosing suitable information based on its relevance and quality.
4. SELF-DIRECTED LEARNING - Level 2: Completing set tasks based on the guidelines set by lecturers. Devoting the time needed to complete each task, including personal contributions and expanding on the recommended information sources.
5. SUSTAINABILITY AND SOCIAL COMMITMENT - Level 2. Applying sustainability criteria and professional codes of conduct in the design and assessment of technological solutions.

Learning objectives of the subject



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Study load

| | | | |
|---------------------------|---------------------|-----|--------|
| Total learning time: 150h | Hours large group: | 30h | 20.00% |
| | Hours medium group: | 0h | 0.00% |
| | Hours small group: | 30h | 20.00% |
| | Guided activities: | 0h | 0.00% |
| | Self study: | 90h | 60.00% |

330522 - TPTM - Process Technologies and Materials Transformation

Content

| | |
|---------------------------------|---|
| title english | Learning time: 10h Theory classes: 2h Laboratory classes: 4h Self study : 4h |
| Description: content english | |
| title english | Learning time: 14h Theory classes: 4h Laboratory classes: 6h Self study : 4h |
| Description: content english | |
| title english | Learning time: 48h Theory classes: 8h Laboratory classes: 10h Self study : 30h |
| Description: content english | |
| title english | Learning time: 18h Theory classes: 4h Laboratory classes: 4h Self study : 10h |
| Description: content english | |
| title english | Learning time: 12h Theory classes: 2h Self study : 10h |
| Description: content english | |



330522 - TPTM - Process Technologies and Materials Transformation

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|---------------------------------|--|
| title english | Learning time: 14h Theory classes: 4h Self study : 10h |
| Description: content english | |

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|---------------------------------|--|
| title english | Learning time: 34h Theory classes: 6h Laboratory classes: 6h Self study : 22h |
| Description: content english | |

330522 - TPTM - Process Technologies and Materials Transformation

Planning of activities

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|--------------|--|
| name english | Hours: 8h Laboratory classes: 4h Self study: 4h |
| name english | Hours: 10h Self study: 4h Laboratory classes: 6h |
| name english | Hours: 20h Laboratory classes: 10h Self study: 10h |
| name english | Hours: 14h Laboratory classes: 4h Self study: 10h |
| name english | Hours: 10h Self study: 10h |
| name english | Hours: 10h Self study: 10h |
| name english | Hours: 8h Self study: 2h Laboratory classes: 6h |
| name english | Hours: 22h Theory classes: 2h Self study: 20h |
| name english | Hours: 22h Theory classes: 2h Self study: 20h |

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Bibliography

Basic:

Dieter, G. E.; Bacon, D. Mechanical metallurgy. SI metric ed. London: McGraw-Hill Book Company, 1988. ISBN 9780071004060.

Hosford, W. F.; Caddell, R. M. Metal forming: mechanics and metallurgy. 4th ed. Cambridge: Cambridge University, 2011. ISBN 9781107004528.

Black, J. T.; Kohser, R. A. DeGarmo's materials and processes in manufacturing. 11th ed. Hoboken: Wiley, 2013. ISBN 9780470873755.

Complementary:

Mangonon, P. L. Ciencia de materiales: selección y diseño. México: Prentice Hall, 2001. ISBN 9702600278.

Brydson, J. A. Plastics materials. 6th ed. Oxford: Butterworth-Heinemann, 1995. ISBN 0750618647.

Ashby, M. F.; Jones, D. R. H. Materiales para ingeniería. Vol. 1, Introducción a las propiedades, las aplicaciones y el diseño. Barcelona: Reverté, 2008-2009. ISBN 9788429172553.

Ashby, M. F.; Jones, D. R. H. Materiales para ingeniería. Vol. 2, Introducción a la microestructura, el procesamiento y el diseño. Barcelona: Reverté, 2008-2009. ISBN 9788429172560.

Woishnis, W., ed. Engineering plastics and composites. 2nd ed. Materials Park, Ohio: ASM International, 1993. ISBN 087170483 .

ASM International. Ceramics and glasses. Ohio: ASM International, 1991. ISBN 0871702827.

Kobayashi, S.; Oh, Soo-Ik; Altan, T. Metal forming and the finite-element method. New York: Oxford University Press, 1989. ISBN 0195044029.

Others resources: