

205400 - Environmental Management and Sustainability in the Textile Industry

Coordinating unit: 205 - ESEIAAT - Terrassa School of Industrial, Aerospace and Audiovisual Engineering
 Teaching unit: 702 - CMEM - Department of Materials Science and Metallurgy
 Academic year: 2019
 Degree: MASTER'S DEGREE IN INDUSTRIAL ENGINEERING (Syllabus 2013). (Teaching unit Optional)
 ECTS credits: 5 Teaching languages: Spanish

Teaching staff

Coordinator: Martí Crespi
 Others: Enric Carrera, Beatriz Escribano

Degree competences to which the subject contributes

Specific:

1. METMF_The ability to analyse the mechanisms of the main organic reactions of macromolecules and polymers, their synthesis and their industrial uses.
2. METMF_The ability to develop strategic plans and apply them to production, quality assurance and environmental management systems within the scope of Textile, Paper and Graphic, and Leather Engineering.
3. METMF_The ability to apply legislation in force as a Textile, Paper and Graphic or Leather engineer.
4. METMF_The ability to quantify colour and characterize dyes and pigments in order to select the most suitable detergents and ancillary products for a given textile process.
5. METMF_The ability to optimize and manage textile eco-finishing processes, bleaching production, dyeing, printing, finishes and textile wastewater processing and purification, as well as to understand and manage chemical safety in textile products.

Learning objectives of the subject

Study load

Total learning time: 125h	Hours large group:	30h	24.00%
	Hours medium group:	0h	0.00%
	Hours small group:	15h	12.00%
	Guided activities:	0h	0.00%
	Self study:	80h	64.00%

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Content

(ENG) Tema 1: El desenvolupament sostenible i les seves implicacions	Learning time: 12h 30m Theory classes: 4h 30m Self study : 8h
(ENG) Tema 2: Impacte de les tecnologies	Learning time: 11h Theory classes: 3h Self study : 8h
(ENG) Tema 3: Principis del disseny sostenibilista i el cicle de vida dels productes	Learning time: 22h Theory classes: 6h Self study : 16h
(ENG) Tema 4: Seguretat química d'articles tèxtils	Learning time: 12h 30m Theory classes: 4h 30m Self study : 8h
(ENG) Tema 5 : Normativa bàsica sobre aigües residuals	Learning time: 3h Theory classes: 1h Self study : 2h
(ENG) Tema 6: Principals contaminants relacionats amb la legislació i l'ús de l'aigua	Learning time: 5h 30m Theory classes: 2h Self study : 3h 30m
(ENG) Tema 7: Principals contaminants relacionats amb la legislació i l'ús de l'aigua	Learning time: 11h Theory classes: 4h Self study : 7h

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(ENG) Tema 8 : Efluents de l' indústria tèxtil	Learning time: 3h Theory classes: 1h Self study : 2h
(ENG) Tema 9: Principals processos de depuració	Learning time: 9h Theory classes: 3h Self study : 6h
(ENG) Tema 10: Processos fisicoquímics de depuració	Learning time: 5h 30m Theory classes: 2h Self study : 3h 30m
(ENG) Tema 11: Processos biològics de depuració	Learning time: 5h 30m Theory classes: 2h Self study : 3h 30m
(ENG) Tema 12: Gestió de los fangs d'una EDAR	Learning time: 3h Theory classes: 1h Self study : 2h
(ENG) Tema 13: Depuració dels efluents tèxtils	Learning time: 5h 30m Theory classes: 2h Self study : 3h 30m
(ENG) Tema 14: Sistemes de control de les EDARs	Learning time: 8h Theory classes: 3h Self study : 5h

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(ENG) Tema 15: Visita a diverses EDARs d'efluents tèxtils	Learning time: 13h Theory classes: 5h Self study : 8h
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Bibliography

Basic:

Senthilkannan, S. Handbook of life cycle assessment (LCA) of textiles and clothing [on line]. Cambridge: Woodhead Publishing, 2015 [Consultation: 24/07/2017]. Available on: <<http://www.sciencedirect.com/science/book/9780081001691>>. ISBN 9780081001875.

Tobler-Rohr, Marion I. Handbook of sustainable textile production. Cambridge: Woodhead Publishing, 2011. ISBN 9780857091369.

Others resources: