

330410 - AM - Advanced Mathematics

Coordinating unit: 330 - EPSEM - Manresa School of Engineering
Teaching unit: 749 - MAT - Department of Mathematics
Academic year: 2019
Degree: BACHELOR'S DEGREE IN MINING ENGINEERING (Syllabus 2016). (Teaching unit Compulsory)
ECTS credits: 6 Teaching languages: Catalan, Spanish

Teaching staff

Coordinator: Puente Del Campo, M. Albina
Others: Alsina Aubach, Montserrat - Cors Iglesias, Josep M. - Domenech Blazquez, Margarita - Freixas Bosch, Josep - Gimenez Pradales, Jose Miguel - Palacios Quiñonero, Francisco - Pons Valles, Montserrat - Rossell Garriga, Josep Maria - Rubió Masegú, Josep - Ventura Capell, Enric

Degree competences to which the subject contributes

Specific:

1. (ENG) Capacitat per a la resolució dels problemes matemàtics que puguin sorgir en l'enginyeria. Aptitud per aplicar els coneixements sobre: àlgebra lineal, geometria, geometria diferencial, càlcul diferencial i integral, equacions diferencials ordinàries i en derivades parcials.
2. (ENG) Capacitat per a la resolució d'equacions diferencials ordinàries i en derivades parcials i la seva aplicació en problemes d'enginyeria.

Transversal:

3. 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.
4. TEAMWORK - Level 2. Contributing to the consolidation of a team by planning targets and working efficiently to favor communication, task assignment and cohesion.
5. 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.

Learning objectives of the subject

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Study load

Total learning time: 150h	Hours large group:	0h	0.00%
	Hours medium group:	60h	40.00%
	Hours small group:	0h	0.00%
	Guided activities:	0h	0.00%
	Self study:	90h	60.00%

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Content

title english	Learning time: 35h Theory classes: 7h Laboratory classes: 7h Self study : 21h
Description: content english	
title english	Learning time: 25h Theory classes: 5h Laboratory classes: 5h Self study : 15h
Description: content english	
title english	Learning time: 30h Theory classes: 6h Laboratory classes: 6h Self study : 18h
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Planning of activities

name english	Hours: 14h Theory classes: 2h Self study: 12h
name english	Hours: 14h Theory classes: 2h Self study: 12h
name english	Hours: 18h Theory classes: 3h Self study: 15h

Bibliography

Basic:

Blanchard, Paul; Devaney, Robert L.; Hall, Glen R.; Persaud, Brian. Differential equations. 4th ed., International ed. [S.l.]: Brooks/Cole, 2011. ISBN 9781133110590.

Harris, Kent. Discovering calculus with Maple. 2nd ed. New York: John Wiley & Sons, 1995. ISBN 0471009733.

Hsu, Hwei P.; Mehra, Raj. Análisis de Fourier. Argentina: Addison-Wesley Iberoamericana, 1987. ISBN 9684443560.

Zill, Dennis G. Ecuaciones diferenciales con aplicaciones de modelado. 8ª ed. México, D.F.: International Thomson, 2007. ISBN 9706864873.

Complementary:

Gabel, Robert A.; Roberts, Richard A. Señales y sistemas lineales. México: Limusa, 1975.