

330340 - TEL - Remote Sensing

Coordinating unit: 330 - EPSEM - Manresa School of Engineering
 Teaching unit: 750 - EMIT - Department of Mining, Industrial and ICT Engineering
 Academic year: 2019
 Degree: MASTER'S DEGREE IN MINING ENGINEERING (Syllabus 2013). (Teaching unit Optional)
 ECTS credits: 5 Teaching languages: Catalan, Spanish

Teaching staff

Coordinator: Oliveras Mejías, Jordi

Degree competences to which the subject contributes

Specific:

4. (ENG) Explorar i investigar jaciments de recursos geològics.
5. (ENG) Realitzar estudis de gestió del territori.
6. (ENG) Avaluar ambientalment projectes.

Transversal:

1. SUSTAINABILITY AND SOCIAL COMMITMENT: Being aware of and understanding the complexity of the economic and social phenomena typical of a welfare society, and being able to relate social welfare to globalisation and sustainability and to use technique, technology, economics and sustainability in a balanced and compatible manner.
2. TEAMWORK: Being able to work in an interdisciplinary team, whether as a member or as a leader, with the aim of contributing to projects pragmatically and responsibly and making commitments in view of the resources that are available.
3. EFFECTIVE USE OF INFORMATION RESOURCES: Managing the acquisition, structuring, analysis and display of data and information in the chosen area of specialisation and critically assessing the results obtained.

Learning objectives of the subject

Study load

Total learning time: 125h	Hours large group:	0h	0.00%
	Hours medium group:	45h	36.00%
	Hours small group:	0h	0.00%
	Guided activities:	0h	0.00%
	Self study:	80h	64.00%

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Content

(ENG) INTRODUCCIÓ	
Degree competences to which the content contributes:	
(ENG) Títol del contingut 1: Aspectes generals de la Teledetecció	Learning time: 8h Practical classes: 3h Self study : 5h
(ENG) Títol del contingut 2: Base Física de la Teledetecció	Learning time: 16h Practical classes: 6h Self study : 10h
(ENG) Títol del contingut 3: Adquisició de dades: sensors i plataformes	Learning time: 8h Practical classes: 3h Self study : 5h
(ENG) Títol del contingut 4: Tractament digital d'imatges	Learning time: 32h Practical classes: 12h Self study : 20h
(ENG) Títol del contingut 5: Aplicacions de la Teledetecció en Minería	Learning time: 21h Practical classes: 6h Self study : 15h
Description:	

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Planning of activities

(ENG) INTRODUCCIÓ	
(ENG)	Hours: 8h Laboratory classes: 3h Self study: 5h
(ENG) TÍTOL DE L'ACTIVITAT 2: CORRECCIÓ GEOMÈTRICA I RADIOMÈTRICA D'UNA IMATGE MULTIESPECTRAL	Hours: 8h Laboratory classes: 3h Self study: 5h
(ENG)	Hours: 8h Laboratory classes: 3h Self study: 5h
(ENG) TÍTOL DE L'ACTIVITAT 4: TRANSFORMACIONS NUMÈRIQUES DE LA IMATGE: ÍNDEXS O RATIOS DE BANDES, ACP, IHS, TASSELED CAP, ETC.	Hours: 8h Laboratory classes: 3h Self study: 5h
(ENG) TÍTOL DE L'ACTIVITAT 5: OBTENCIÓ DE COBERTES TEMÀTIQUES MITJANÇANT CLASSIFICACIÓ DIGITAL SUPERVISADA I NO SUPERVISADA	Hours: 8h Laboratory classes: 3h Self study: 5h

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Bibliography

Basic:

Chuvieco Salinero, Emilio. Teledetección y medio ambiente: la observación de la tierra desde el espacio. Madrid: UNED, 2006. ISBN 8436252330.

Düzgün, H. Sebnem; Demirel, Nuray. Remote sensing of the mine environment. Boca Raton: CRC Press, 2011. ISBN 9780415878791.

Gupta, R. P. Remote sensing geology. 2nd ed. Berlin: Springer, 2003. ISBN 3540431853.

Sabins, Floyd F. Remote sensing: principles and interpretation. 3rd ed. New York: Freeman, 1997. ISBN 9781577665076.

Vincent, Robert K. Fundamentals of geological and environmental remote sensing. Upper Saddle River: Prentice Hall, 1997. ISBN 0133487806.

Complementary:

Jensen, J. R. Introductory digital image processing: a remote sensing perspective. Upper Saddle River: Prentice Hall, 2005. ISBN 0131453610.

Latifovic, Rasim. Mining and the environment: satellite remote sensing in assessing the environmental impact of large-scale surface mining operations. Saarbrücken: VDM Verlag Dr. Müller, 2009. ISBN 9783639135121.

Borengasser, Marcus; Hungate, W.S.; Watkins, Russell. Hyperspectral remote sensing: principles and applications. London: CRC Press, 2008. ISBN 9781566706544.

Others resources: