60424 - Basics of remote sensing

Información del Plan Docente

Academic Year	2016/17
Academic center	103 - Facultad de Filosofía y Letras
Degree	352 - Master's in Geographical Information Technology for Territorial Development: Geographical Informations Systems and Teledetection
ECTS	2.0
Course	1
Period	Annual
Subject Type	Optional
Module	---

1.Basic info

1.1.Recommendations to take this course

1.2.Activities and key dates for the course

2.Initiation

2.1.Learning outcomes that define the subject

2.2.Introduction

3.Context and competences

3.1.Goals

3.2.Context and meaning of the subject in the degree

3.3.Competences

3.4.Importance of learning outcomes

4.Evaluation

5.Activities and resources

5.1.General methodological presentation

The course has basically a theoretical and theoretical-practical orientation, so the learning activities are based on the lecture sessions. With teacher support, the analysis and practical discussion of satellite images is addressed, but without involving the use of specific software by the student. In this context they are of great significance both autonomous student work (reading comprehension and study of the literature, visualization and interpretation of satellite images...) and collaborative attitude in practical sessions, and the effectiveness of tutoring, as a tool for autonomous learning.

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5.2.Learning activities

- Theoretical and theoretical-practical sessions (16 hours): lecture sessions (12 hours), interactive-practical activities (4 hours).
- Directed activities for strengthening the critical learning of the competencies (4 hours).
- Private study (29 hours).
- Assessment, written exam (1 hour).

5.3.Program

1. General presentation (objectives, program and agenda, assessment).
2. General literature and Internet resources in remote sensing.
3. Conceptual framework of remote sensing.
4. Physical principles of remote sensing.
5. Remote sensing systems, resolution of a sensor system.
6. Visual enhancements and interpretation of mono- and multi- band (RGB composites).
7. Spectral signatures (introduction).
8. Remote sensing applications (introduction).

5.4.Planning and scheduling

This course (20 hours) is taught during the first month of the academic year, prior to "Introduction to geographic information technologies", where the use of dedicated software for remote sensing image processing is introduced.

In this course the student does not submit any work for assessment, which is based only on a written exam, conducted in the first period of evaluation of the three that occur throughout the academic year.

5.5.Bibliography and recomended resources

BB	Campbell, James B. Introduction to remote sensing / James B. Campbell. 3rd ed London [etc.] : Taylor & Francis, 2002
BB	Chuvieco Salinero, Emilio. Fundamentals of satellite remote sensing / Emilio Chuvieco. 2ª ed. Boca Raton: CRC, 2015
BB	Chuvieco Salinero, Emilio. Teledetección ambiental : la observación de la Tierra desde el espacio / Emilio Chuvieco. 1ª ed. act. Barcelona: Ariel, 2010
BB	Gibson, Paul J. Introductory remote sensing: digital image processing and applications / Paul J. Gibson and Clare H. Power. London: Routledge, 2000
BB	Gibson, Paul. Introductory remote sensing, principles and concepts / Paul J. Gibson; with contributions to the text by Clare H. Power and Website development by John Keating. [London]: Routledge, 2000
BB	Lillesand, Thomas M. Remote sensing and image interpretation / Thomas M. Lillesand, Ralph W. Kiefer, Jonathan W. Chipman. 6th ed. Hoboken, NJ: John Wiley, cop. 2008
BB	Sabins, Floyd F. Remote sensing : principles and interpretation / Floyd F. Sabins. 3rd ed. New York: W.H. Freeman and Co, cop. 1997

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BC	Chuvieco Salinero, Emilio. Fundamentos de teledetección espacial / Emilio Chuvieco. 3a. ed. rev. Madrid: Rialp, D.L. 1996.
BC	Curran, Paul J. Principles of remote sensing / Paul J. Curran. London: Longman, 1985
BC	Girard, Michel C. Télédétection appliquée: zones tempérées et intertropicales / Michel C. Girard, Collete M. Giarard; préface de Gerard Brachet . Paris [etc.]: Manson, 1989
BC	Jensen, J.R. Introductory digital image processing: a remote sensing perspective / J. R. Jensen. 3th. ed. Englewood Cliffs (N.J.): Prentice Hall, 2004
BC	People and pixels: linking remote sensing and social science / D. Liverman, E.F. Moran, P.C. Stern (eds.). Washington: National Research Council; National Academy Press, 1998. [(PDF disponible en http://nap.edu).]
BC	Pinilla Ruiz, Carlos. Elementos de teledetección / Carlos Pinilla Ruiz. Madrid: RA-MA, D.L. 1995.
BC	Remote sensing. Course book. [1] / Courseteam J.J.M. Leinders... [et al.]. Heerlen: Open Universiteit, 1989
BC	Scanvic, Jean-Yves. Teledetección aplicada: cartografía, geología estructural, exploración minera, medio ambiente, etc. / Jean-Yves Scanvic; [traducido por Gregorio Ochoa y Angel Valverde]. Madrid: Paraninfo, 1989.
BC	Sobrino, José A. Teledetección / José A. Sobrino (ed.). Valencia: AECI, D.L.2000.