60424 - Basics of remote sensing

Información del Plan Docente

Academic Year	2017/18
Faculty / School	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
Year	1
Semester	Annual
Subject Type	Optional
Module	---

1.General information

1.1.Introduction

1.2.Recommendations to take this course

1.3.Context and importance of this course in the degree

1.4.Activities and key dates

2.Learning goals

2.1.Learning goals

2.2.Importance of learning goals

3.Aims of the course and competences

3.1.Aims of the course

3.2.Competences

4.Assessment (1st and 2nd call)

4.1.Assessment tasks (description of tasks, marking system and assessment criteria)

5.Methodology, learning tasks, syllabus and resources

5.1.Methodological overview

The course has a predominantly theoretical and theoretical-practical orientation, thus teaching and learning activities are developed using the lecture approach. With the teacher's 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 it is of great significance both autonomous work (reading comprehension and study of the literature, visualization and interpretation of satellite images...) and a collaborative attitude in practice sessions, as well as the effectiveness of tutorials as a tool for

autonomous learning.

5.2.Learning tasks

The course includes the following learning tasks:

- Lectures and practice sessions (16 hours): lecture (12 hours), interactive-practical activities (4 hours).
- Guided tasks to strengthen the critical learning of the competencies: 4 hours
- Study: 29 hours
- Assessment in the form of a written exam: 1 hour

5.3.Syllabus

The course will address the following topics:

1. General presentation (objectives, syllabus 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 enhancement and interpretation of mono- and multi- band (RGB composites).
7. Spectral signatures (introduction).
8. Remote sensing applications (introduction).

5.4.Course planning and calendar

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

For this course, the only assessment activity is a written exam, which takes places in the first exam period (February) of the three official periods.

5.5.Bibliography and recommended 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

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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
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.