

MÓDULO	MATERIA	CURSO	SEMESTRE	CRÉDITOS	TIPO
	Remote Sensing and Image Processing		2º	5	Optional
PROFESORES*			DIRECCIÓN COMPLETA DE CONTACTO PARA TUTORÍAS (Dirección postal, teléfono, correo electrónico, etc.)		
Lucas Alados-Arboledas , Francisco José Olmo Reyes (University of Granada)			http://directorio.ugr.es/static/Personal/*/alados_at_ugr.es http://directorio.ugr.es/static/Personal/*/fjolmo_at_ugr.es		
			HORARIO DE TUTORÍAS*		
			http://directorio.ugr.es/static/Personal/*/alados_at_ugr.es http://directorio.ugr.es/static/Personal/*/fjolmo_at_ugr.es		
MASTER EN EL QUE SE IMPARTE					
Máster EM Color in Informatics and Media Technology CIMET					
PRERREQUISITOS Y/O RECOMENDACIONES (si procede)					
Optics and photonics fundamentals					
BREVE DESCRIPCIÓN DE CONTENIDOS (SEGÚN MEMORIA DE VERIFICACIÓN DEL GRADO)					
This course develops the fundamentals of remote sensing techniques. The course covers the basic principles of remote sensing, a revision of the electromagnetic radiation and its interaction with matter, some basics ideas about the atmosphere both as a transfer medium and as an observational object, advanced topics in surface and atmosphere remote sensing. Different platforms and sensors used in remote sensing will be presented including imaging systems. Pre-processing aspects of remotely sensed data will be addressed paying special attention to atmospheric and radiometric corrections.					

* Consulte posible actualización en Acceso Identificado > Aplicaciones > Ordenación Docente.



COMPETENCIAS GENERALES Y ESPECÍFICAS

OBJETIVOS (EXPRESADOS COMO RESULTADOS ESPERABLES DE LA ENSEÑANZA)

On completion of this course the students will be able to:

- Understand the bases of the remote sensing process.
- Approach to the remote sensing procedures applied to the surface and atmosphere.
- Distinguish the different kind of sensors and platforms used in remote sensing.
- Understand the need of atmospheric correction of surface remote sensing data.
- Apply atmospheric correction to real remote sensing data.
- Extract geophysical variables from remote sensing data.

TEMARIO DETALLADO DE LA ASIGNATURA

Topics to be taught (may be modified):

- Remote sensing: basic principles
- Electromagnetic radiation and its interaction with matter.
- Basics principles of atmospheric remote sensing and radiative transfer: atmosphere, radiative transfer.
- Remote sensing platforms and sensors: airborne and surface systems, optical, infrared and microwave sensors, imaging and non-imaging systems.
- Pre-processing of remotely sensed-data: geometric correction, atmospheric correction, calibration.
- Extraction of geophysical variables from remote sensing data.

Practical Laboratory Sessions:

- Design of look up tables for atmospheric correction.
- Atmospheric correction of remote sensing images.
- Extraction of geophysical variables from remote sensing data.

BIBLIOGRAFÍA

Basic textbook: to be done

Additional books: to be done



CAMPBELL, J.B., Introduction to remote sensing, The Guildford Press, New York, 1987.
 CURRAN, P., Principles of remote sensing. Longman Scientific & Technical, New York, 1985.
 ELACHI, C., Introduction to the physics and techniques of remote sensing. John Willey & Sons, New York, 1987.
 LENOBLE, J., Atmospheric radiative transfer. A. Deepak Publishing, Virginia, 1993.
 LIOU, K.N., An introduction to atmospheric radiation. Academic Press, New York, 2002.
 MATHER, P.M., Computer processing of remotely-sensed images. An introduction. John Willey & Sons, Chichester, England, 1999.
 SLATER, P.N., Remote sensing. Optics and optical systems. Addison-Wesley Publishing Company, Reading, Massachusetts, 1980.

ENLACES RECOMENDADOS

METODOLOGÍA DOCENTE

Teaching methods: Lectures and lab classes, and homework exercises.

EVALUACIÓN (INSTRUMENTOS DE EVALUACIÓN, CRITERIOS DE EVALUACIÓN Y PORCENTAJE SOBRE LA CALIFICACIÓN FINAL, ETC.)

Written exam (50%), Practical work (50%)

INFORMACIÓN ADICIONAL

