



INTRODUCTION TO REMOTE SENSING

Enrollment year	2012/2013
Academic year	2014/2015
Regulations	DM270
Academic discipline	ING-INF/03 (TELECOMMUNICATIONS)
Department	DEPARTMENT OF ELECTRICAL, COMPUTER AND BIOMEDICAL ENGINEERING
Course	ELECTRONIC AND COMPUTER ENGINEERING
Curriculum	PERCORSO COMUNE
Year of study	3°
Period	2nd semester (02/03/2015 - 12/06/2015)
ECTS	6
Lesson hours	45 lesson hours
Language	ITALIAN
Activity type	WRITTEN AND ORAL TEST
Teacher	DELL'ACQUA FABIO (titolare) - 3 ECTS DELL'ACQUA FABIO (titolare) - 3 ECTS
Prerequisites	Knowledge of physics and mathematics at the undergraduate level.
Learning outcomes	Introductory course to remote sensing. Basic knowledge of remote sensing, of the essential sensor structure in ground-based, airborne or space-borne platforms; of data generated by different systems, and their usage. Basic familiarity with images generated by remote sensing systems and with their possible exploitation in environmental and other types of applications. Capability to evaluate the usefulness of the different types of remotely sensed images to a geointelligence problem. Basic skills in remote sensing data processing
Course contents	Physical grounds of remote sensing propagation, reflection, refraction of electromagnetic waves in Earth Observation

	spectral features Digital remotely sensed images spectral and spatial characteristics contrast, enhancement, visual interpretation Multispectral remote sensing photographic systems optical-mechanical scanning along-track and across-track scanning data correction Classification Image classification Main types of classification algorithms Multitemporal classification Accuracy estimation Microwave remote sensing Radar principles Basic elements of radar operation in its various types Basic interpretation techniques for radar data
Teaching methods	Lectures (hours/year in lecture theatre): 45 Practical class (hours/year in lecture theatre): 0 Practicals / Workshops (hours/year in lecture theatre): 0
Reccomended or required readings	Titolo del riferimento da modificare. * Thomas Lillesand, Ralph W. Kiefer, Jonathan Chipman. Remote Sensing and Image Interpretation. Wiley. ISBN-13: 978-0470052457. . Titolo del riferimento da modificare. * Mark A. Richards (Editor), James A. Scheer (Editor), William A. Holm (Editor). Principles of Modern Radar: Basic Principles. SciTech Publishing, Raleigh NC USA. ISBN: 978-1891121524. . Titolo del riferimento da modificare. * Course slides, available at http://tlclab.unipv.it/.
Assessment methods	Oral examination. At the end of the course it is usually organized a written test which, if successful, entitles to directly registering the mark.
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Sustainable development goals - Agenda 2030	\$lbl_legenda_sviluppo_sostenibile