COURSE DESCRIPTION

1. GENERAL

SCHOOL	ENVIRONMENT, GEOGRAPHY AND APPLIED ECONOMICS		
DEPARTMENT	GEOGRAPHY		
LEVEL OF COURSE	Postgraduate		
COURSE CODE		**SEMESTER**	2
COURSE TITLE	ADVANCED TOPICS OF APPLIED GEOINFORMATION FOR THE ENVIRONMENT		

STRUCTURE OF TEACHING ACTIVITIES	**TEACHING HOURS PER WEEK**	**NUMBER OF CREDITS ALLOCATED (ECTS)**
Lectures and laboratory Exercises	2	7.5

TYPE OF COURSE	Optional
PREREQUISITES	-
LANGUAGE OF INSTRUCTION	GREEK
COURSE OFFERED TO ERASMUS STUDENTS	YES, IN ENGLISH (if required)
(URL)	

2. EXPECTED LEARNING OUTCOMES

Learning Outcomes
The main aim of the course is to help graduate students acquire the required skills for using all the spectrum of geoinformation technologies and demonstrate their use in practice in selected environmental applications.

3. COURSE CONTENTS

Some of the key topics covered in the course include: geoinformation in atmospheric correction of geospatial data, advances methods for mapping the environment and their changes over time and space, programming skills in geospatial data analysis, synergistic use of geospatial data and simulation models, sensitivity analysis in geoinformation (principles, methods & tools), advanced topics of hyperspectral and thermal infrared remote sensing, LiDAR use in practice (collection, processing & applications), collection and processing of UAV data with practical applications, geospatial operational products. Apart of the module delivery additional seminars/lab courses are organized to cover some of the previously mentioned topics.

4. TEACHING AND ASSESSMENT METHODS

TYPE OF LECTURES	- In class lectures - Practical training in ICT laboratory
ICT USE	ICT use, Internet use and e-class Use of specialized software (open source & commercial) in geospatial data handling
TEACHING STRUCTURE	

Activity	*Hours per semester*
Lectures	26
Laboratory practice	55
Assignment	40
Individual study	64
TOTAL	***185***

ASSESSMENT METHODS	Assessment Language: Greek Assessment: • Written final exam: (70%) • Submission of group assignment and presentation: (30%) Assessment criteria are announced at the start of the semester.

5. RECOMMENDED READING

ΑΡΧΕΣ ΚΑΙ ΕΦΑΡΜΟΓΕΣ ΔΟΡΥΦΟΡΙΚΗΣ ΤΗΛΕΠΙΣΚΟΠΗΣΗΣ, Κ. ΚΑΡΤΑΛΗΣ & Χ. ΦΕΙΔΑΣ, ΕΚΔΟΣΕΙΣ ΤΖΙΟΛΑ, 2012

ΕΠΙΣΤΗΜΗ ΓΕΩΓΡΑΦΙΚΗΣ ΠΛΗΡΟΦΟΡΙΑΣ-ΟΛΟΚΛΗΡΩΜΕΝΗ ΠΡΟΣΕΓΓΙΣΗ ΚΑΙ ΕΙΔΙΚΑ ΘΕΜΑΤΑ, ΜΑΡΙΝΟΣ ΚΑΒΟΥΡΑΣ, ΚΑΛΛΙΠΟΣ, 2016

ΤΗΛΕΠΙΣΚΟΠΗΣΗ ΠΕΡΙΒΑΛΛΟΝΤΟΣ - Μια προοπτική για τα φυσικά διαθέσιμα, John Jensen, ΕΚΔΟΣΕΙΣ ΕΜΠ, 2015

Οδηγός του ArcGIS Pro, 3η Έκδοση, Shellito Bradley, Τσάτσαρης Ανδρέας (Επιστ. Επιμέλεια), ΕΚΔΟΣΕΙΣ ΤΖΙΟΛΑ, 2021

Επιπλέον Βιβλιογραφία

Pandey, P.C., P.K. Srivastava, B. Bhattacgarya & G.P. Petropoulos (2020): Hyperspectral Remote Sensing: Theory & Applications. Elsevier, ISBN: 978-0-08-102894-0 .

Petropoulos, G.P. & T. Islam (2017): Remote Sensing of Hydrometeorological Hazards, ISBN: 978-1-4987-7758-2, Taylor& Francis, ISBN: 978-01-4987-7758-2.

Petropoulos, G.P. & P.K. Srivastava (2017): Sensitivity Analysis in Earth Observation Modelling, Elsevier, 417pp, ISBN: 9780128030110.

Petropoulos G.P. (2013): "Remote Sensing of Energy Fluxes and Soil Moisture Content", 506 pp, Taylor and Francis. ISBN: 978-1-4665-0578-0