

Innovative Postgraduate Education in The Field of Environment Protection: Methods and Tools



Modernized courses from
Georgian curricula:
University of Georgia

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BIO Presenter



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APPLIED REMOTE SENSING FOR THE ENVIRONMENT

Objectives and Tasks

- To study the principles of remote sensing, with reference to a range of examples ;
- To study methods for processing remotely sensed data to derive environmental information;
- To understand the sources of error in remote sensing data;
- To perform use of remote sensing data to detect and quantify environmental change;
- To understand how remote sensing data can be integrated with other data sources;
- To discuss the limitations of using remotely sensed data for detecting environmental change;

Course Prerequisites

No Prerequisites for this course

Course Comparative Analysis

[The University of Padua](#)

Remote sensing for geology

[https://en.didattica.unipd.it/off/2020/LM/SC/SC1180/000ZZ/S
CO2045745/N0](https://en.didattica.unipd.it/off/2020/LM/SC/SC1180/000ZZ/S
CO2045745/N0)

KTH Royal Institute of Technology

Advanced Remote Sensing

<https://www.kth.se/student/kurser/kurs/FAG3106?l=en>

University of Leeds

Remote Sensing for Earth Observation

[http://webprod3.leeds.ac.uk/catalogue/dynmodules.asp?Y=20
1718&M=JUSO-5261M](http://webprod3.leeds.ac.uk/catalogue/dynmodules.asp?Y=20
1718&M=JUSO-5261M)

Course Outcomes

(according to the course curricula)

As a result of learning course modules, the students will be able to

- design a small research project, outlining the problem, hypothesis, objectives, and methods (based primarily on the use of remote sensing data sets).
- search, order/retrieve and, import remote sensing data relevant to their project.
- process the available remote sensing data using simple and advanced digital image processing techniques to extract relevant thematic information.
- analyze and interpret the spectral signatures in the remote sensing images.
- generate meaningful image map products of a quality that meets the publishing standards of peer reviewed journals or of presentations at scientific meetings.
- apply the acquired theoretical and practical knowledge in remote sensing to complete an independent term project on a topic of their choice.

Geographic Information Systems

Objectives and Tasks

- To explore mapped data;
- To relate GIS with remote sensing technologies;
- To analyze spatial data, using GIS analysis tools;
- To develop and manage geodatabases;
- To apply Python as a GIS computer language;
- To create maps, images and apps to communicate spatial data in a meaningful way to others.

Course Prerequisites

Operational Systems (MS Windows)

Course Comparative Analysis

The University of Padua

Land Surveying and Geographical Information System (Gis)

<https://En.Didattica.Unipd.it/Off/2020/Lm/In/In1825/001pd/Inp9087738/N0>

KTH Royal Institute of Technology

Graphic Information Systems

<https://www.kth.se/student/kurser/kurs/AG1311?l=en>

University of Leeds

GIS and Environment

<http://webprod3.leeds.ac.uk/catalogue/dynmodules.asp?Y=201718&F=P&M=GEOG-5060M>

Course Outcomes

(according to the course curricula)

As a result of learning course modules, the students will be able to

- manage GIS projects.
- prepare and present GIS reports.
- know geo-data bases and spatial data using the Geoinformation System ArcGIS, QGIS, SAGA-GIS .
- know creation of classes of spatial objects and changes in their structures (add fields, delete fields, change of field type, etc.)
- know of the relational connection of geographical objects by attributable data and location.
- know location selection and spatial objects analysis according to location.
- know data analysis on vector and raster map.
- analyze and graphical performance of system performance.
- build a situational scenario of various characteristics (reliability, security) of the system.

Environmental radiation protection

Objectives and Tasks

- To introduce to nucleus and atom structure;
- To get basis of different kinds of radioactive transformations, interactions of radiation with matter and its effects on living cells
- To understand principles of detection of different kind of radiation, procedures of handling with radiation sources and applying radiation protection,
- To acquaint main national and international legislation and recommendations in radiation protection.

Course Prerequisites

No Prerequisites for this course

Course Comparative Analysis

ULISBOA (Portugal)

<https://fenix.tecnico.ulisboa.pt/cursos/mpsr/disciplina-syllabir/283003985068208>)

University of Oslo, Norway

<https://www.uio.no/studier/emner/matnat/fys/nedlagte-emner/FYS-KJM9570/index.html>

Course Outcomes

(according to the course curricula)

As a result of learning course modules, the students will be able

- to use new knowledge in recognising risks of radiation in their living and working environment;
- in the case of exposure to take protection measures based on the kind and characteristics of a particular radionuclide they will be skilled;
- to protect themselves against natural and artificial radiation sources;
- with the basic dosimetry knowledge to critically evaluate any information on dose levels;
- to classify and characterize radionuclides present in our homes and at workplaces, in nuclear industry, and medical diagnostic and therapy.

THANK YOU !

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