



Department Environment & Natural Resources Engineering



Technological Educational Institute of Crete
School of Applied Sciences

MSc Course

"Geoenvironmental Resources and Risks"

<http://georr.chania.teicrete.gr>

Dr. Filippos Vallianatos

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UNESCO Chair holder on Solid Earth Physics & Geohazards Risk Reduction

Head Laboratory of Geophysics & Seismology

Technological Educational Institute of Crete



- The Master of Science Program
**Geoenvironmental Resources & Risks –
GEORR**

- *aims to provide extensive knowledge & expertise
in the fields of*


- **Earth & Environmental Sciences**


Aim

- The purpose of the program is the education and training of high level graduates in the field of geoenvironmental natural resources and natural disasters.
- Through the M.Sc. program, students acquire modern interdisciplinary background and expertise in Geoenvironmental Sciences, cutting edge technology, powerful skills for successful academic and professional carrier, in today's competitive international environment.



MOTIVATION

- The identification, availability, management and protection of georesources is a top priority issue for today society and a major topic for environmental planning and protection.
 - The sustainable use of georesources and the relief of problems associated with their exploitation, such as the effects of pollution, are issues of fundamental importance for global Earth's environment and sustainability.
 - *The study and monitoring of geoenvironmental hazards is of fundamental importance for the society, mainly for the effects on people and the ecosystems, but also for the damage caused on the infrastructures.*
 - The geoenvironmental evaluation of localization of high risk industrial sites, of major public works, and the georisk safe selection of waste disposal sites, will be issues of increasing importance towards the protection of human lives and environment, mainly due to the effects on people and the ecosystems, but also due to the potential damage caused on the infrastructures.
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- **Program Structure**
 - The M.Sc. program consists of one and a half years of study (90 credits).
 - The curriculum focuses on the study of natural resources and geoenvironmental hazards.
 - **The program is taught in English**, stimulating students to open to the professional world **outside Greece** and, on the other hand **allowing foreign students and high academic-level instructors to participate**. This international atmosphere creates a constructive exchange of experiences and cultures, making the students ready for the international job market. **This curriculum also allows the participation of incoming ERASMUS students.**
 - **“Block structure” to support the organization of IPs from invited lecturers**
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- **Duration**
- The duration for the award of the M.Sc. degree is **three semesters (90 ECTS** . full time), of which the **third is for the preparation of the thesis** in collaboration with National and European research laboratories.
- *Two supervisors – One of them from other University/Research Center*



Program modules

1st Semester

Course title	T	ECTS
1st semester		
Environmental Chemistry & Contamination	C	7.5
Applied Geology & Geoenergy Resources	C	7.5
GIS & Remote Sensing	C	7.5
Geophysical Prospecting – Methods & Environmental Applications	C	7.5

2nd Semester

Course title	T	ECTS
2st semester		
Water Resources & Hydrogeological Hazards	C	6
Advanced Geophysics & Seismology	C	6
Advanced Geochemistry	C	6
Environmental Physics & Geomaterials	C	6

2nd semester - optional courses		
Numerical Modeling of Environmental Problems & Structures	0	6
Remote Sensing in Georesources & Natural Hazards	0	6
Coastal systems	0	6
Advanced Topics in Georesources & Natural Hazards	0	6

3rd semester

3rdth semester

Dissertation - Thesis	C	30
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Notes:

1. Students choose one of the optional courses of the 3rd semester.

2. Symbols:

C=Compulsory Core Taught module

O=Optional Taught module

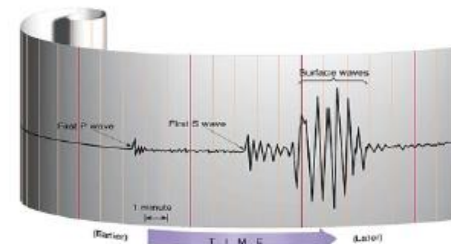
ECTS=European Credit Transfer & Accumulation System

GR, IT,
UK, FR,
PK



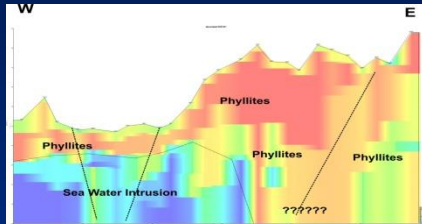
Scholarships

Top level students enrolled at GEORR are eligible to apply for scholarships provided by research funds or teaching assistanceship.

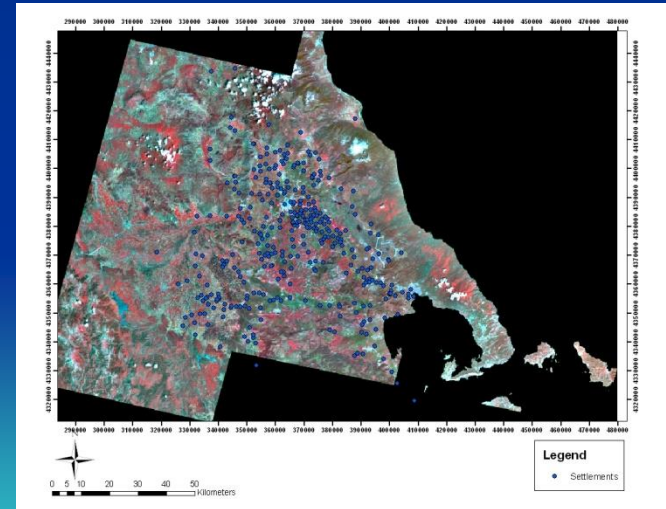
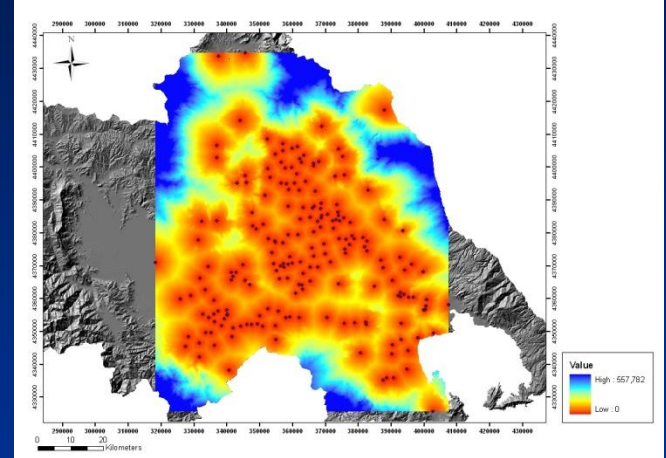
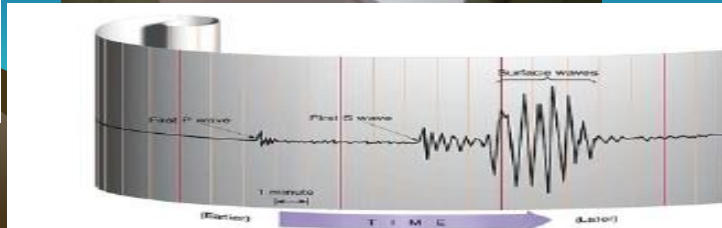
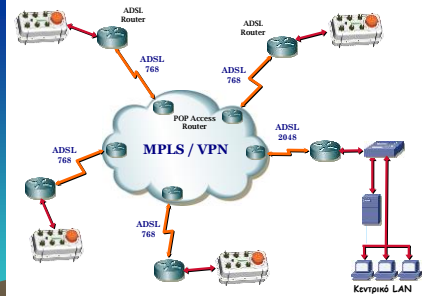
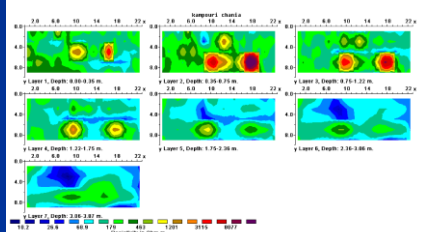
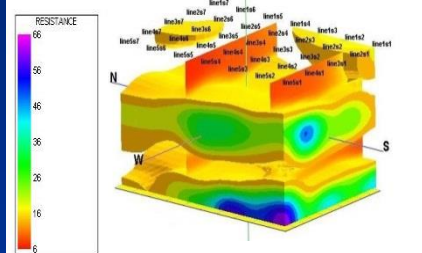


- **Research Fields**
 - *Indicative scientific fields of expertise offered by the*
 - *M.Sc. programme are:*
 - **Environmental geophysics**
 - **Geodynamics, Georisks and Seismic hazard .**
 - Groundwater Resources & Hydrogeological Hazards
 - Geographic Information Systems & Remote Sensing.
 - **Contamination hazard, territorial planning and**
 - **coastal Systems.**
 - **Geochemistry & Geomaterials**
 - **Environmental Hazard, Disaster Management & Civil**
 - **protection.**
 - **Geoenergy Resources.**
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Labs Involved



Phyllites (phyllites-quartzites) - middle-upper Triassic



- **Employability - Career**

- The MSc program in "Geoenvironmental Resources and Risks" will provide essential training for **careers in Georesources evaluation and Geohazard assessment** which include those in georesources & environmental industry, engineering, international insurance, and reinsurance industry, academic research, civil and environmental protection agencies and organizations on Emergency Planning and Environmental Management, related to aid and development.

- Graduates may further continue to Ph.D. studies.
- Top career destinations include the global job market on :
- **water resources and hazards,** ←
- → **GIS and Remote sensing,**
- **Global Georisks and georesources,**
- **Contamination and Urban Planing,**
- **Environmental Geophysics,** ←
- → **Geochemistry and**
- **Geoinformatics.**



- **International collaborations**
- The MSc program is supported by Academic/Research staff from Greek and Foreign Universities and Research Centers of the highest level:
 - *University College London, & UCL Institute for Risk & Disaster Reduction, UK*
 - *University of Portsmouth, UK - Brunel University, UK*
 - *Istituto Nazionale di Geofisica e Vulcanologia, Italy*
 - *University of Bonn, Germany*
 - *Istituto di Metodologie Avanzate di Analisi Ambientale/CNR, Italy*
 - *University of Basilicata, Italy*
 - *University of Camerino, Italy*
 - *University of Ankara, Turkey*
 - *Rutgers University, USA*
 - *University of Lisbon, Portugal*
 - *University of Avignon, France*
 - *University of Koln, Germany*
 - *Politecnico di Bari. Italy*
 - *OGS & University of Trieste , Italy*

A network of UNESCO Chairs all over the UNESCO member states

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UNESCO Chair *SOLID EARTH PHYSICS and GEOHAZARDS RISK REDUCTION*

Head of the Chair: Professor Filippas Vallianatos



United Nations
Educational, Scientific and
Cultural Organization



UNESCO Chair on Solid Earth Physics
and Geohazards Risk Reduction,
Technological Educational Institute of Crete,
Greece



**Anganta 2030, SDG,
Geneva Milestones (07/2017),
Networking**

**AXA Funds, Japan Ministry of
Infrastructure/UNESCO**

UNESCO Chair

SOLID EARTH PHYSICS and GEOHAZARDS RISK REDUCTION

Thank you for your
kind interest on our

MSc
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