GEOPHYSICS AND GEODATA
An International Master Program @ University of Trieste
GEOPHYSICS: THE ONLY TOOL WE HAVE TO EXPLORE THE EARTH'S INTERIOR
GEOPHYSICS: THE ONLY TOOL WE HAVE TO EXPLORE THE EARTH’S INTERIOR

..as in non-invasive diagnostics and biomedical imaging
A Geophysicist must be able to:

- Design and perform data acquisition with different instruments and techniques
- Analyze and process data
- Perform numerical modeling and inversion
- Interpret the data
GEOPHYSICS: THE ONLY TOOL WE HAVE TO EXPLORE THE EARTH’S INTERIOR

...understand structure, physical properties and evolution of the Earth’s interior and to solve challenging scientific and technological problems.
GEOPHYSICS AND GEODATA

The degree is offered by the following Departments of University of Trieste:
Mathematics and Geosciences
Physics
Engineering & Architecture

in cooperation with
https://www.inogs.it/
https://www.ictp.it/
https://www.eni.com

with the support of national and international research institutions and companies of the geophysical sector (such as Eni, Shearwater, Halliburton)
INTERNATIONAL MASTER PROGRAM IN GEOPHYSICS AND GEODATA

Language: English  Duration: 2 years

Possible specializations in:

- Solid Earth Geophysics, Geodynamics, Potential methods
- Seismology
- Exploration Geophysics
- Fluid Mechanics
- Computational geophysics
INTERNATIONAL MASTER PROGRAM IN GEOPHYSICS AND GEODATA

Course structure

**CORE COURSES:**
- Exploration seismology
- Potential methods
- Seismology
- Introduction to machine learning
- Fluid dynamics

**COMPLEMENTS:**
- Essential mathematics
- Essential Physics
- Essential Geology

} for Geophysicists
INTERNAL MASTER PROGRAM IN GEOPHYSICS AND GEODATA

Course structure

CHOICE OF SPECIALIZATIONS AMONG COURSES OF THE FOLLOWING SECTORS:

GEOPHYSICS (13)
GEOLOGY (9)
PHYSICS (5)
ENGINEERING/FLUID MECHANICS (4)
MATHEMATICAL METHODS/SCIENTIFIC COMPUTING/GEODATA SCIENCES (9)
INTERNATIONAL MASTER PROGRAM IN GEOPHYSICS AND GEODATA

WHO CAN ENROLL?
Students with a science-technology degree, preferably but not limited to Geology, Physics, Engineering. Admission based on titles and interview.

SCHOLARSHIPS
Available through the Collegio Fonda.

LECTURES, INTERNSHIPS, THESIS WORK
Lessons will be held in Trieste, internships and thesis work can be organized on a vast network of research institutions and companies. Lectures and seminars held by internationally renowned experts are regularly organized as part of the activities of the local Student Chapter of the Society of Exploration Geophysicists.
INTERNATIONAL MASTER PROGRAM IN GEOPHYSICS AND GEODATA

TUTORING AND ASSISTANCE FOR WORK PLACEMENTS

Each student will have a personal tutor from enrollment who will help in the design of the training path, in the choice of available courses, internship opportunities, thesis topics and international mobility programs.

Recruitment events are periodically organized in Trieste with the major companies in the geophysical sector. Internships are foreseen in national and foreign companies and institutions also with the support of the University or European mobility programs.
INTERNATIONAL MASTER PROGRAM IN GEOPHYSICS AND GEODATA

JOBS FOR GEOPHYSICISTS

INDUSTRY
ENERGY AND NATURAL RESOURCES
ENVIRONMENT, CLIMATE CHANGE

PROFESSIONAL ACTIVITY
GREEN DEAL

RESEARCH CAREER
SCIENTIFIC EXPLORATION OF THE EARTH’S INTERIOR
NATURAL AND ANTHROPIC HAZARDS

PUBLIC AUTHORITIES
GEODATA SCIENCE AND SCIENTIFIC COMPUTING

TEACHING
FLUID MECHANICS AND RELATED TOPICS

….AND MUCH MORE…. 
INTERNATIONAL MASTER PROGRAM IN GEOPHYSICS AND GEODATA
FIELDS OF APPLICATION AND SPECIALIZATION

ENERGY AND NATURAL RESOURCES such as

WATER
GEOTHERMAL HEAT
MINERALS AND FOSSIL FUELS
INTERNATIONAL MASTER PROGRAM IN GEOPHYSICS AND GEODATA

FIELDS OF APPLICATION AND SPECIALIZATION

ENVIRONMENT, CLIMATE CHANGE and GREEN DEAL

GLACIOLOGY & EFFECTS OF CLIMATE CHANGE

SOIL AND WATER CONTAMINATION

CARBON CAPTURE AND STORAGE

MITIGATION OF THE EFFECTS OF HUMAN ACTIVITIES
INTERNATIONAL MASTER PROGRAM IN GEOPHYSICS AND GEODATA
FIELDS OF APPLICATION AND SPECIALIZATION

PLANET’S INTERIOR AND NATURAL HAZARDS

EARTHQUAKES

GEODYNAMICS

DEEP PLANETARY EXPLORATION
FLUID MECHANICS AND RELATED TOPICS

- Environmental sciences (dispersion of pollutants in water and air)
- Ecology (fluid biological species interaction)
- Physical oceanography
- Physical of the atmosphere
- Turbulence in geophysics
- Transport of liquid in porous media
INTERNATIONAL MASTER PROGRAM IN GEOPHYSICS AND GEODATA

FIELDS OF APPLICATION AND SPECIALIZATION

**SCIENTIFIC EXPLORATION**

STUDY OF STRUCTURE, PHYSICAL PROPERTIES AND EVOLUTION OF THE EARTH’S CRUST WITH A WIDE RANGE OF POSSIBLE APPLICATIONS (such as e.g. geology, engineering, archaeology, forensic science, glaciology...)

[Image of a 3D geological model]
INTERNATIONAL MASTER PROGRAM IN GEOPHYSICS AND GEODATA
FIELDS OF APPLICATION AND SPECIALIZATION

GEODATA SCIENCE AND SCIENTIFIC COMPUTING

PROCESSING, MODELING, INVERSION AND INTERPRETATION OF GEOPHYSICAL DATA
INTERNATIONAL MASTER PROGRAM IN GEOPHYSICS AND GEODATA

FIELDS OF APPLICATION AND SPECIALIZATION

... AND MUCH MORE !!

SOUND AND IMAGE PROCESSING

NON-DESTRUCTIVE TESTING

FORENSIC AND CULTURAL HERITAGE SCIENCE

BIO-MEDICAL IMAGING
@University of Trieste we have a decades-long tradition of high-level research and training in Geophysics and a large community of Alumni working in Geophysics worldwide.
Un mare di ragioni per studiare a Trieste