

## Study program overview

### Semester 1 - Option A

UNL  
Mathematics and Statistics  
Data modeling  
GI basics

### Semester 1 - Option B

UJI  
Informatics and Mathematics  
New technologies  
GI basics

### Semester 2

WWU  
Fundamentals of GI Science  
Advanced topics in GI Science  
Core competences

### Semester 3

UJI, UNL, WWU  
Master thesis

The International Masters Program (Master of Science, M.Sc.) in Geospatial Technologies is a cooperation of

- University of Münster (WWU), Institute for Geoinformatics (ifgi), Germany,
- Universitat Jaume I (UJI), Castellón, Spain, and,
- Universidade Nova de Lisboa (UNL), NOVA – Information Management School (NOVA-IMS), Lisboa, Portugal.

The Masters Program has been selected within the Erasmus+/Erasmus Mundus Program of the European Commission.

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# Master of Science in Geospatial Technologies

International Erasmus Mundus

## Study program

The English-language three-semester Masters program will enroll up to 32 students per year.

- The first semester offers different learning paths, addressing the previous know-how and requirements of the students. The courses at UJI focus on the provision of know-how in informatics, new media, and GI basics. UNL provides modules in mathematics, data modeling, and GI basics.
- The second semester at the WWU provides basic and advanced courses in GIScience. In addition, courses in additional key competencies (project management, research methods) are provided. Summer school participation may be substituted for some courses.
- The Master thesis in the third semester is closely linked to ongoing research projects of one of the partners.

Based on the successful Master examination, the three universities will award the joint degree "Master of Science" (M.Sc.) with the adjunct "in Geospatial Technologies".

## Targeted audience

The Masters program targets holders of a Bachelors degree with a qualification in application areas of Geographic Information (GI), e.g., environmental planning, regional planning, logistics/traffic, marketing, energy provision. GI is a rapidly growing market, lacking qualified GI personnel and offering excellent career chances. Therefore, the Masters Program targets life-long learning for graduates and professionals in the fields of geography, surveying, planning, local administration, etc., who are willing to acquire additional GI skills for applying them in their respective GI application area. Candidates who have already studied GI degrees will be given lower priority in admissions evaluation.

## Admission Criteria

The Master's Program in Geospatial Technologies is directed towards students with relevant degrees in the area of Geographic Information applications.

Some of the major requirements for admission are:

- Adequate Bachelor degree (or Master degree)
- English language proof (TOEFL 500 points)
- Basic skills in GI and/or IT
- High motivation
- High-level achievements in previous academic and professional careers.

## Application

The deadline for students applying for the Masters Program is July 31st of each year. This deadline only applies to self-paying students. As for Erasmus Mundus scholarships, please see separate announcement.

Tuition fees to the consortium are 1.500 € per semester for students with nationalities from the EU Member States and EEA-EFTA States (Iceland, Liechtenstein, Norway) and 3.500 € per semester for students with other nationalities.

## Further information

<http://mastergeotech.info/>

## Geographic Information and career opportunities

GI is a rapidly growing economical sector: 80 % of all decisions in Economy and Politics have a spatial relation. Therefore, GI has been introduced as a tool for many application areas, e.g., environmental planning, regional planning, traffic/logistics, telecommunication, energy provision, etc.

The career chances in the Geospatial Technologies sector can be considered as globally excellent. For example, the United States Department of Labour identifies the sector as an emerging industry (2015: [High Growth Industry Profile – Geospatial Technology](https://www.doleta.gov.brq/indprof/geospatial_profile.cfm), [https://www.doleta.gov.brq/indprof/geospatial\\_profile.cfm](https://www.doleta.gov.brq/indprof/geospatial_profile.cfm): "Because the uses for geospatial technology are so widespread and diverse, the market is growing at an annual rate of almost 35 per cent, with the commercial subsection of the market expanding at the rate of 100 per cent each year.". For 2012-2022, 40.600 job openings for Geospatial Scientists and Technologists are projected just for the USA (O Net online, 2010: Summary report Geospatial Scientists and Technologists, <http://www.onetonline.org/link/summary/15-1199.04?redir=15-1199.04>). According to the **US Bureau of Labour Statistics**, "employment of surveyors, cartographers, photogrammetrists, and surveying and mapping technicians is expected to grow 19 per cent from 2008 to 2018, which is faster than the average for all occupations. Increasing demand for fast, accurate, and complete geographic information will be the main source of job growth" (<http://www.urisa.org/main/gis-as-your-career/>).

A major challenge for making spatial information more usable for economy, administrations, and citizens is the integration of geospatial information across regions, countries, communities, and technologies - addressed e.g. by INSPIRE and many other Spatial Data Infrastructure initiative on regional, national and international level.

## Departments Involved

"Geospatial Information Technologies" have their roots primarily in three distinct areas: geosciences, computational technologies, and information science. The three Universities represent centers of excellence in these areas, recognized at the European and global levels. The geoscientific foundations of Geoinformatics at Münster, the computer science and technology skills taught at Castellón, and the mathematical, statistical and geospatial modeling methodologies emphasized in Lisbon complement each other in an ideal way to provide a rounded, but compact education in this interdisciplinary technological field.

## Learning outcomes and professional qualification

Geospatial Technologies is an innovative professional area that interdisciplinary bridges the gap between informatics and geosciences. Graduates of the International Masters Program apply and develop methods for computer-supported solutions for spatially related problems (global, regional, local). Therefore, graduates receive the following specialized knowledge in:

- Geospatial Technologies and Geographic Information;
- Informatics and Data Analysis.

**The Master of Science in Geospatial Technologies qualifies for a professional career in the following domains:**

- **Private sector:** GI applications and consulting in the domains of regional planning, landscape planning, financial services industry, energy providing industry, transportation, agriculture and forestry, and retailing/marketing;
- **Research:** Applied sciences at universities and other research institutions;
- **Public sector:** GI applications and consulting in local and regional administrations, especially in cadastre and different types of planning (e.g., regional, traffic, ecology).

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