

Masters of Science in Geospatial Technologies



[International Erasmus Mundus]

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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), Instituto Superior de Estatística e Gestão de Informação (ISEGI), Lisboa, Portugal.

The Masters Program has been selected within the Erasmus Mundus Program of the European Commission (2007-0064/001 FRAME MUNB123).

Study program

The English-language three-semester Masters program enrolls 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 modelling, and GI basics.
- The second semester at WWU provides basic and advanced courses in Geoinformatics. In addition, courses in key competencies (project management, research methods) are provided. Summer or spring 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 award the joint degree "Master of Science" (M.Sc.) with the adjunct "in Geospatial Technologies".

Study program overview

Semester 1 - Option A	Semester 1 - Option B	Semester 2	Semester 3
UNL	UJI	WWU	UJI, UNL, WWU
Mathematics and Statistics	Informatics and Mathematics	Fundamentals of GI Science	Master thesis
Data modeling	New technologies	Advanced topics in GI Science	
GI basics	GI basics	Core competences	

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, geography, logistics, transportation, marketing, energy provision, computer science. 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 fields like geography, surveying, planning, local administration,, 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 major requirements for admission are:

- Adequate Bachelor degree (or Master degree)
- English language proof (TOEFL 500 paper-based, or equivalent)
- Strong 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: in order to start the Masters Program in September. This deadline only applies to self-paying students. However, an earlier application is recommended, i.e., for nationals of non-EU countries in order to have time for visa processes.

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

For 2010, the European Commission provides Erasmus Mundus grants, see page 3 of this flyer.

Further information,
<http://mastergeotech.info/>

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Geographic Information and career opportunities

GI is a rapidly growing economical sector: 80 % of all decisions in Economy and Politics have a spatial aspect. Therefore, GI has been introduced as a tool for many application areas, e.g., environmental planning, regional planning, traffic/logistics, telecommunication, energy provision, etc., and consequently has high potential. For example, Fornefeld et al. estimated in 2003 that the current turn-over of the German GI market is €1.2 billion, but the achievable potential is €8 billion.

However, there is a lack of qualified GI professionals in these areas. The journal Nature highlighted the job opportunities for students who can utilize geographic information and satellite data, e.g., "NASA says the National Imagery and Mapping Agency is expected to need 7.000 people trained in GIS in the next three years" (Richardsons, 2004: Mapping opportunities, Nature, Vol. 427, 22 January 2004, page 376). The career chances in the GI sector are very good, e.g., the United States Department of Labour identifies in its career portal two emerging industries: Geospatial technology and nanotechnology (<http://www.careervoyages.gov/emerging-main.cfm>).

A major challenge for making spatial information more usable for companies, 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.

Learning outcomes and professional qualification

Geospatial Technologies is an innovative professional area that bridges the gap between informatics and geosciences. Graduates of the International Masters Program apply and develop methods for computer-supported solutions for problems with a spatial component (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).

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 geo-scientific foundations of Geoinformatics at Munster, 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.



Further information

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CALL FOR SCHOLARSHIP APPLICATIONS EU STUDENTS

The International Masters Program (Master of Science, M.Sc.) in Geospatial Technologies is a cooperation of University of Münster (WWU), Institute for Geoinformatics (ifgi), Universitat Jaume I (UJI), Castellón, Spain, and, Universidade Nova de Lisboa (UNL), Instituto Superior de Estatística e Gestão de Informação (ISEGI), Lisboa, Portugal.

The Masters Program has been selected within the Erasmus Mundus Program of the European Commission (2007-0064/001 FRAME MUNB123). The European Commission provides grants for EU students, which are in this context nationals from EU Member States and EEA-EFTA countries (Iceland, Liechtenstein, Norway).

Grants are **8 financial contributions** to EU students. The financial contribution includes a support towards living costs of 500 € per month (9.000 € in total), coverage of tuition fees of 1.500 € per semester (4.500 € in total), and an insurance package.

Targeted students

The Masters program targets holders of a Bachelors degree with a qualification in application areas of Geographic Information (GI). Applicants with professional experience after their degree are very welcome. Degree holders already acquired similar qualification as offered in the Masters Program in Geospatial Technologies are discouraged from application. Applicants having fulfilled 150 credits of a Bachelor degree will be accepted provisionally, if they provide their (diploma) certificate until July 15, 2010.

Application deadline:

- EU students: April 30, 2010
- Start of the program: September 1, 2010 (UNL) or September 5, 2010 (UJI)

Further information and application:

<http://mastergeotech.info/>