

#cartographymaster

CARTOGRAPHY MSC MAPPING FOR A SUSTAINABLE WORLD

Mapping for a sustainable world

Cartography is key for providing science and data for action and decision-making in moments that matter most. Is our interdisciplinary programme a good fit for you?

FIND OUT MORE

www.cartographymaster.eu

info@cartographymaster.eu

WHAT IS IT ABOUT?

Educating global talents and young scientists to...

- promote data-driven communication with maps,
- demonstrate challenges related to UN SDGs,
- preserve world cultural heritage,
- promote undistorted world views,
- make contributions to citizen science

CARTOGRAPHY

International Joint Program of four universities focussing on a broad education in cartography and geoinformatics.

Europe's first and only international Master in Cartography Joint degree of four European universities and four closely collaborating European teams with international staff for knowledge transfer (TUM, TUW, TUD, UT)



Chair of Cartography and Visual Analytics, TUM



Research Unit Cartography, Vienna University of Technology



Institute of Cartography, TU Dresden



Department of Geo-information Processing (ITC), University of Twente

Co-Funded by the Erasmus+ programme of the European Union, Erasmus Mundus Joint Masters 2014-2019, 2017-2022 and 2022-2027



ASSOCIATED PARTNERS







Landesamt für Digitalisierung, Breitband und Vermessung



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Geospatial













Technische Universität München

During the first semester at Technische Universität München, students are provided with the foundations of cartography and geovisualization. In the second semester at Technische Universität Wien, students get knowledge in multimedia cartography, especially web mapping, mobile internet and location-based services.

Students are taught in mobile and 3D cartography during the third semester at TU Dresden. The Alpine Cartography Field School is part of this semester. Online modules prepared by the University of Twente (ITC) are incorporated into the curriculum during the first and third semester. Additionally, ITC is responsible for the organization of the fourth semester.

MODULES AND COURSES

- Each semester: ≈ 4 to 6 modules
 (30 ECTS/semester ≈ 30 x 25-30 work hours)
- 120 ECTS, 30 ECTS per semester, 14 lecture weeks per semester
- Exams in the lecture-free period
- 1 module can contain one or more courses



The program structure spanning four semesters in four module categories

	1st Semester 30 ECTS	2nd Semester 30 ECTS	3rd Semester 30 ECTS	4th Semester 30 ECT
Fundamental	Cartographic Foundations	Cartographic Theo- ries and Applications		
	Compulsory 5 ECTS	Compulsory 9 ECTS		
	Geo-Information			
	Compulsory 6 ECTS			
	Geovisualization and Geostatistics	Compulsory E		sory Elective modules TUM sory modules TUW
	Compulsory 5 ECTS		Elective	modules TUD
	Image Analysis			
	Compulsory 6 ECTS			
Advanced	Engineering Databases	LBS and Multimedia Cartography	Georelief and Cartography	
	Elective 3 ECTS	Compulsory 10 ECTS	Elective 10 ECTS	
	Geo-Health	Cartographic Publishing	Geo-Health	
	Elective 5 ECTS	Compulsory 5 ECTS	Elective 5 ECTS	
	Principles of Spatial Data Mining and Machine Learning		Mobile Cartography	
	Elective 3 ECTS		Elective 10 ECTS	
			Subject-specific GIS Applications and Case Studies Elective 10 ECTS	
			Geodata Infrastructures	
			Elective 5 ECTS	



INTENDED LEARNING OUTCOMES

Complementarity: Learning contents are embedded in modules that span two or more participating universities

 \rightarrow Broad perspective on domain knowledge, theories and methods, different case studies, alternative solutions to the same problem.

Uniqueness: Learning contents are embedded in modules that highlight the research expertise of one partner university

 \rightarrow In-depth view at selected research topics, development of methods, prototypical implementations and evaluation of scientific results.

Interdisciplinarity: Learning contents are embedded in modules that are build upon each other and involve all four partner universities

→ Transferable skills to work in cross-cultural and interdisciplinary settings, scientific integrity, awareness of ethical issues, communication skills.

1ST SEMSTER AT TUM

The 1st semester at TUM aims to harmonise students' knowledge in cartography and geoinformatics. It offers different learning paths based on the previous knowledge profile and the learning requirements of the new intake.

Additionally, soft skill competencies, such as study and research skills, mapping project, English presentation and academic writing skills are provided as elective modules.

Basic Modules Foundations in Cartography and Geovisualization

Compulsory modules

- Cartographic Foundations
- Geo-Information
- Geovisualization and Geostatistics
- Image Analysis for Mapping

Elective modules

- Geo-Health (UT/ITC online module)
- Spatial Decision Support Systems (UT/ITC online module)
- Mapping Project
- Scientific Visualization
- Principles of Spatial Data Mining and Machine Learning
- Selected Topics in Big Geospatial Data
- Engineering Databases
- English Scientific Presentation and Writing

2ND SEMSTER AT TUW

The 2nd semester at TUW contains advanced courses in cartography and geoinformatics with focus on web mapping, location-based services and spatial data infrastructures. Theoretical foundations are combination with practical applications such as webmapping-relevant programming technologies, cartographic interfaces and publishing. Project management and presentation skills are trained in an integrated manner. The respective emphasis on teamwork and independent projects aims to enhance students' social skills.

Advanced Modules Multimedia Cartography, Web Mapping and LBS

Compulsory modules

- Theoretical Cartography
- LBS and Multimedia Cartography
- Cartographic Publishing
- Applied Cartographic Research and Development

SUMMER BREAK

Internship Travel Relax Re-exams

ALPINE CARTOGRAPHY FIELD SCHOOL

10 days Summer School

Landscape models, mental maps, laser scanning, glaciology etc.

Project Day: Panoramic landscape depiction starting from data collection all the way to the final product



3RD SEMSTER AT TUD

The teaching staff at TUD is responsible for thematic specializations in the 3rd semester. Students have the opportunity to specialize in mobile cartography, generalization of geodata, remote sensing cartography, GIS applications or 3D/4D- visualization. A 10day Alpine Cartography Field School demonstrates the irreplaceability of a direct sensual contact with the landscape and its importance for a professional understanding of the geo-scientific and cartographic work.

In-depth Modules Mobile- and 3D Cartography

Elective modules

- Georelief and Cartography (incl. 10 days Alpine Cartography Field School)
- Mobile Cartography
- Subject-specific GIS Applications and Case Studies
- Remote-Sensing-based Environmental Mapping
- Laser Scanning and Digital Terrain Model Generation
- Geodata Infrastructures
- 3D Virtual Landscapes
- Geo-Health (UT/ITC online module)
- Spatial Decision Support Systems (UT/ITC online module)

MAPPING



https://cartographymaster.eu/student-work/























4TH SEMSTER

UT contributes to the programme with its unique experience in international and blended learning. During the 1st and 3rd semester, UT is involved in teaching one or two distance education modules on database theories, GIS data quality issues and spatial decision support systems. All materials including software are provided online already before the Covid-19 outbreak. Thus, the subject-related expertise of the ITC at UT which is not covered by the other universities is integrated in the programme and students have the option to experience virtual mobility and learn remote working and online communication skills.

Master's Thesis Either at TUM, TUW, TUD or UT







MASTER THESES





https://cartographymaster.eu/theses/

























CARTO IN NUMBERS

2011 - 2024

4 universities 14 intakes 308 students 74 countries 218 alumni

26 years old (avg.) 55% Female, 45% Male



WHAT BACKGROUND DO THEY HAVE?



HOW TO APPLY?

https://cartographymaster.eu/how-to-apply/





Deadline for Erasmus Mundus scholarship applications: March 15, 2024

Deadline for non-scholarship applications: May 31, 2024

APTITUDE ASSESSMENT PROCEDURE

Coordination and formal check of application documents: TUM

Selection of students: Selection committee composed of members of all partners (2 TUM, 2 TUW, 2 TUD, 2 UT)

Ranking list

Admission requirements

- Above-average Bachelor degree or its equivalent in science or engineering, e.g. cartography, geography, geodesy or computer science
- TOEFL, IELTS or certificate of Cambridge Main Suite for non-native speakers of English

Application deadlines

- 15.03. for scholarship candidates from non-EU countries
- 31.05. for all other students

CURRICULAR ANALYSIS

1st step

Academic qualification and academic potential

- Knowledge in cartography, informatics, mathematics, geodesy, other geo, natural and environmental sciences
- Final grade
- Motivation
- 2 Letters of recommendation
- Optional: Portfolio

2nd step Interview

ERASMUS MUNDUS SCHOLARSHIP

The program was selected for funding by the Education, Audiovisual and Culture Executive Agency EACEA of the European Union in 2014, 2017 and 2022 (Key Action 1: Learning Mobility for Individuals)

Funding period: 2022-2027

Who benefits from the funding?

- Master students from all over the world
- Academics/scientists as scholars or visiting scientists
- Consortium of the cooperating universities

What kind of support is available?

- Student scholarships: monthly allowance, tuition fee, insurance, etc.
- Institutional contribution
- Contribution to students with special needs



Study Cartography – make maps that matter

CARTOGRAPHYMASTER.EU



THANK YOU FOR YOUR INTEREST.

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