

Geodesy and Geoinformation

Master of Science

Dr.-Ing. Felix Müller (Academic Program Coordination and Study Advice)

Program Coordination/Study Advice

Felix Müller, Dr.-Ing.

<https://www.dgfi.tum.de/en/staff/mueller-felix/>

Email:

info.gg@ed.tum.de

Visiting address:

Deutsches Geodätisches Forschungsinstitut (DGFI-TUM)

Entrance Residenzstrasse 1 (Odeonsplatz)

Please notify in advance by mail!



DGFI-TUM

Type of Study

Full Time

Standard Duration of Studies

4 (fulltime)

Credits

120 ECTS

Main Location

Munich + Ottobrunn

Application Period

Winter semester 01.04 – 31.05

Admission Category

Aptitude Assessment of Master

Start of Degree Program

Winter Semester

Costs

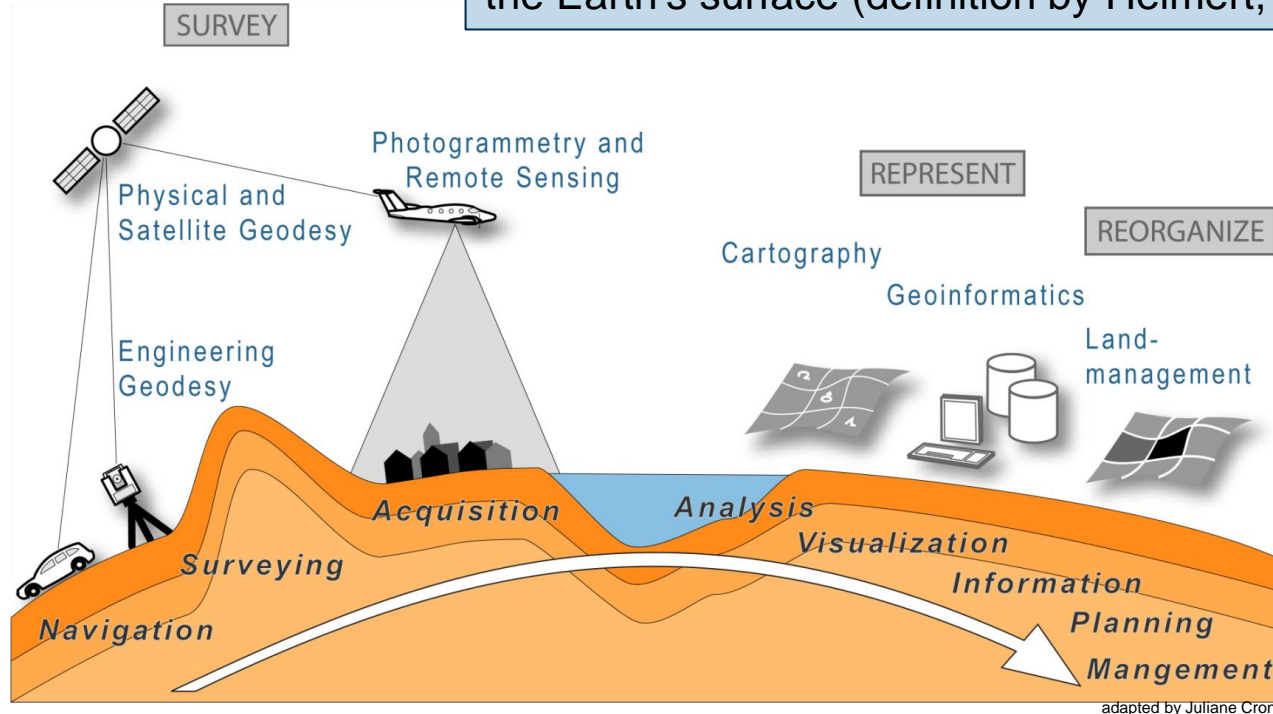
Student Fees: 85,00€

Required Language Proficiency

English

What are the tasks of Geodesy?

Geodesy is the science of surveying and mapping the Earth's surface (definition by Helmert, 1880).



Our chairs and teaching units



G&G M.Sc. Curriculum

1st Semester (Winter)		2nd Semester (Summer)		3rd Semester (Winter)		4th Semester (Summer)	
ECTS		ECTS		ECTS		ECTS	
Computer Vision and Machine Learning - Basics (PF+LMF)	5	Study Line 1 (required)	5	Study Line 1	5	Master's Thesis	30
Geodetic Engineering and Consulting (LEW, GDS)	5	Study Line 1	5	Study Line 2	5		
Satellite geodesy for Earth System applications (APG, SAT, DGFI)	5	Study Line 2 (required)	5	Study Line 3	5		
Spatial Data Management and Geovisualization (LfK, GIS)	5	Study Line 2	5	Study Line 3	5		
Geodetic Seminar (all chairs)	5	Study Line 3 (required)	5	Elective	5		
Elective	5	Elective	5	Free Elective (Languages, Soft Skills, Transfer Credits etc.)	5		

Sum of Credits (semester)	30	Sum of Credits (semester)	30	Sum of Credits (semester)	30	Sum of Credits (semester)	30
Examinations	6	Examinations	6	Examinations	6	Examinations	6

Study Lines
Navigation and GNSS
Engineering Geodesy
Cartography and Visual Analytics
Physical Geodesy and Earth System
Land Management
Photogrammetry
Space Geodetic Techniques
Geoinformatics
Remote Sensing

Discipline-specific elective module catalog

Winter term

Module no.	Module name	Credits	SWS	Language	Module coordinator
ED110089	Causal Inference in the Climate and Earth System	3	2	English	Niklas Boers
ED110087	Data Science in Earth Observation	5	5	English	Xiaoxiang Zhu
ED110064	Earth System Dynamics in Models and Observations	3	2	English	Niklas Boers
BGU31005T2	Image Understanding – Recent Trends in Machine Learning	3	2	English	Marco Körner
BV450022	Interdisciplinary Project	5	6	English / German	Roland Pail
BV450023	Interdisciplinary Project	3	3	English / German	Roland Pail
BGU40067	International land rights	5	4	English	Walter de Vries
LRG5400	Inverse Problems in Radiative Transfer Theory	3	2	English	Marco Körner
ED110065	Machine Learning in Earth System Modelling	3	2	English	Niklas Boers
BV300012	Map Projections	3	2	English / German	Liqiu Meng
ED110088	Mathematics of Climate and Earth System Science	6	6	English	Niklas Boers
ED110063	Practical Course in Laser Scanning	3	3	English	Christoph Holst
ED110050	Precise GNSS Satellite Orbit Determination and Time Synchronization	3	2	English	Bingbing Duan
BGU46038	Principles and Applications of Land Management	6	4	English	Walter de Vries
ED110040	Principles of Programming	5	5	English	Martin Werner
LRG1500	Principles of Spatial Data Mining and Machine Learning	3	3	English	Martin Werner
ED110048	Professional Internship - M.Sc. Geodesy and Geoinformation	5	-	English / German	Christoph Holst
BGU40059	Real estate economics	5	4	English	Gero Suhner
BV610013	Receiver Technology	4	2	English	Urs Hugentobler
BGU40064	Scientific Paper Writing - Theory and Practice	5	4	English	Walter de Vries
ED110068	Scientific Programming and Dynamical Modelling in Julia	5	3	English	Niklas Boers
LRG1501	Selected Topics in Big Geospatial Data	3	3	English	Martin Werner
BV570009	Seminar Earth System Dynamics	2	1	English	Florian Seitz
BV450015	Solid Earth Processes	2	2	English	Roland Pail
ED110066	Tipping Points in Earth System Dynamics	3	2	English	Niklas Boers
BV120005	Unterirdisches Bauen / Tunnelbau II	3	2	German	Jochen Fillibeck
BGU61024	Language Course for Geodesists	3	2	Language taught	

Recommended



Free selection of discipline-specific elective modules

You can find the table in the TUM-Wiki → M.Sc. Geodesy and Geoinformation

- **1. semester**
 - 4 required basic modules + interdisciplinary compulsory module + elective modules (25 Credits)
- **2. to 3. semester**
 - Selection of 3 out of 9 possible study lines
 - Completion of main module and elective modules from the study line (45 Credits)
- **During first three semesters**
 - Selection and completion of elective modules from all study lines (15 Credits)
 - Free selection of modules from large elective catalog (5 Credits)
 - Study progress control → verification of 30 credits from 3rd semester
- **4. semester**
 - Master's thesis 6 months (30 Credits)
- **Mobility window:**
 - Best possible in the 3rd semester

G&G M.Sc. Requirement Modules Aptitude Assessment



- Only relevant for students with requirements (fundamental) modules:
 1. Please contact relevant professors for content of your requirement module
 2. Register for requirement module examination (e.g. ED110075 → ED110085)
 3. Do the examination
- There exist no specific requirement module lectures or courses!
- Must be successfully completed in the **first year** of study!

In case of doubt about the examination formalities, please contact the Examination Office!
examination.asg@ed.tum.de

Timetable

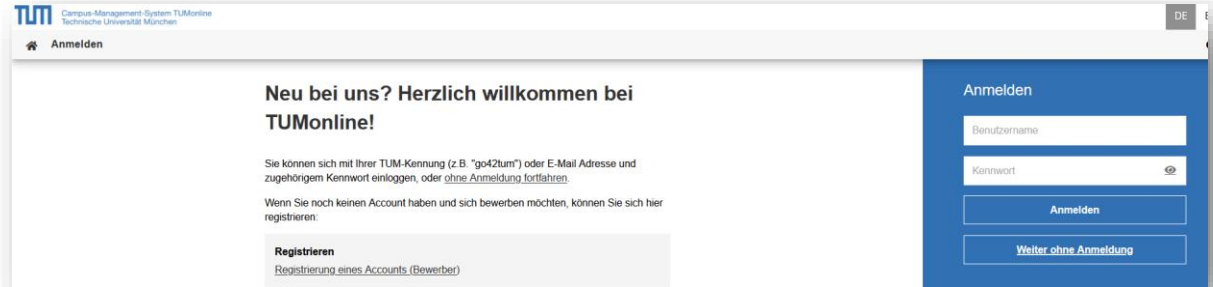
Geodesy and Geoinformation M.Sc. 1. Semester

	Monday	Tuesday (Ottobrunn)	Wednesday	Thursday	Friday
08:00			8:00 - 9:30 Basics of Engineering Geodesy (ED110002) Raum: 0790	08:00 - 09:30 Advanced Methods of Geovisualization (ED110004) Raum: 0790	
09:00		08:30 - 11:15 Principles of Programming (ED110040) 00.012 Seminarraum			
10:00	9:45 - 11:15 Computer Vision 1 (ED110001) Raum: 1778		9:45 - 11:15 Satellite Geodesy for Earth System Applications (ED110003) Raum: 0790	9:45 - 11:15 Satellite Geodesy for Earth System Applications (ED110003) Raum: 2601	09:30 - 12:00 Fundamentals of Spatial Data Management (ED110004) Raum: 3209
11:00					
12:00		12:00 - 14:30 Principles of Programming – Tutorial (ED110040) 01.126 CIP Pool		11:30 - 13:00 Land Tenure and Land Readjustment (ED110002) Raum: 0602	
13:00	13:15 - 14:45 Introduction to Machine Learning (ED110001) Raum: 1778		13:15 - 14:45 Exercise Computer Vision 1 Machine Learning (ED110001) Raum: 1778		
14:00					
15:00	15:00 - 16:30 Distributed Geographic Information Systems and Cloud Computing (ED110004) Raum: 3209, 2805	15:00 - 18:00 Geodetic Seminar (BGU45030) 9377.EG.020 (Magistrale) by appointment	15:00 - 16:30 Advanced Methods of Geovisualization (ED110004) Raum: 0360	15:00 - 18:00 Geodetic Seminar (BGU45030) Raum: 0120	
16:00					
17:00					
18:00					
	Satellite Geodesy Land Management	Engineering Geodesy Photogrammetry and Remote Sensing	Geoinformatic Cartography	Elective Module Geodetic Seminar	

Important websites/portals

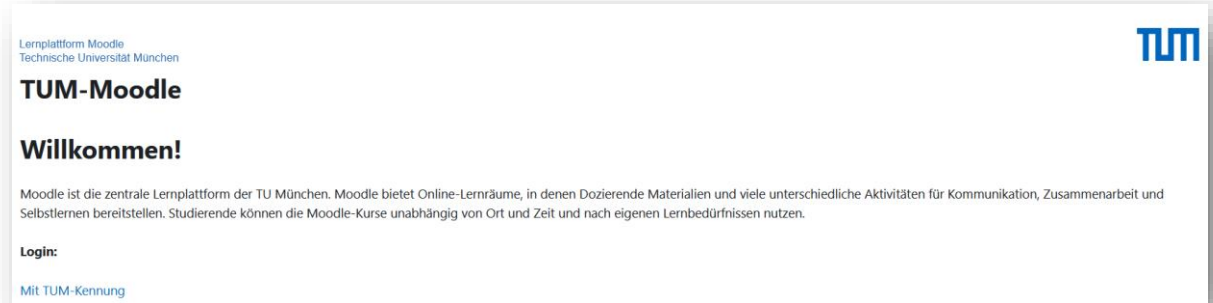
TUMonline:

- LV Registration
- Appointments + timetables
- Grades



TUM-Moodle:

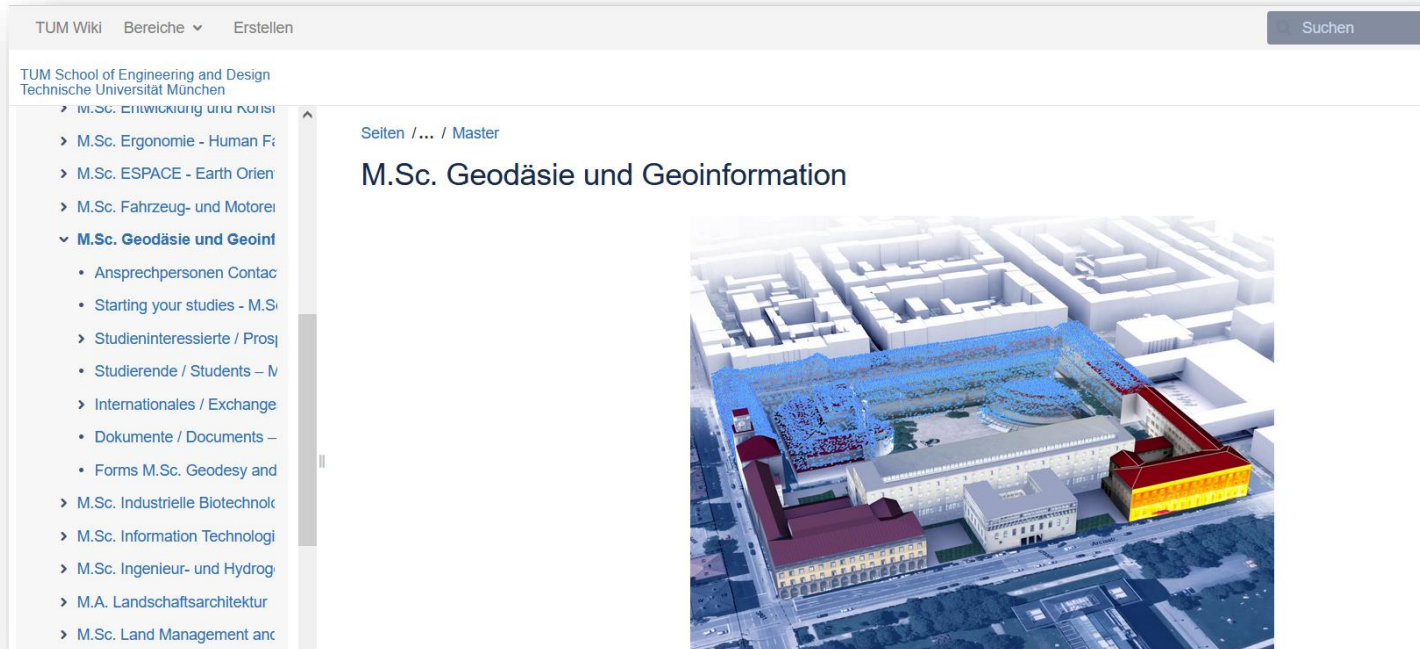
- Connected with TUMonline
- Learning platform (materials, exercises etc.)
- Course registration via TUMonline



Important websites/portals

TUM-Wiki

- Availability of all timetables and important documents (FPSO)
- Availability of forms (bachelor thesis, recognition of achievements, etc.)



The screenshot shows the TUM Wiki interface. At the top, there is a navigation bar with 'TUM Wiki', a dropdown menu for 'Bereiche', and an 'Erstellen' button. A search bar with the text 'Suchen' is located on the right. The main content area displays the page title 'M.Sc. Geodäsie und Geoinformation' and a breadcrumb trail 'Seiten / ... / Master'. Below the title is a 3D architectural rendering of a university campus with various buildings highlighted in different colors (red, yellow, blue). On the left side, there is a sidebar menu with a tree structure of categories, including 'M.Sc. Geodäsie und Geoinformation' which is currently expanded to show sub-items like 'Ansprechpersonen Contact', 'Starting your studies - M.Sc.', 'Studieninteressierte / Pros', 'Studierende / Students - M.Sc.', 'Internationales / Exchange', 'Dokumente / Documents - M.Sc.', 'Forms M.Sc. Geodesy and', 'M.Sc. Industrielle Biotechnologie', 'M.Sc. Information Technologie', 'M.Sc. Ingenieur- und Hydrogeodäsie', 'M.A. Landschaftsarchitektur', and 'M.Sc. Land Management and Geoinformation'.