

Information Sheet

Course of Study

Geoinformatics and Land Management

General Information

The degree programme *Geoinformatics and Land Management* provides comprehensive training in natural and engineering sciences, including surveying and geodesy, computer science, geographic information systems, as well as urban and regional planning.

Graduates will be able to deal with coordinate and reference systems, data models, data bases and geoinformation systems and acquire the know-how of modelling geospatial data and processes – in short, they will be specialists in the digital representation of the real world.

The aim of the programme is to prepare budding engineers for an employment in the areas of geodesy, surveying, geoinformatics, geomeia and information technology as well as in regional and urban management. It also provides the groundwork for those students wishing to study for a master's degree in this field.

The programme covers two areas of specialisation:

- Geodesy & Land Management
- Geoinformatics

Course Structure

The programme takes seven semesters to complete and leads to the degree Bachelor of Engineering (B. Eng.) It is divided into three stages:

The **first stage (semester 1 and 2)** provides the basic skills and involves the following modules:

- Basics of Digital Systems
- English
- Mathematical Geography
- Geodesy and Surveying
- (Geo)-Programming
- Geodetic Calculations
- Cartography (Basics)
- Cartography (GIS)
- Data Base Systems

Additional Modules for Geodesy and Land Management:

- Surveying and Sensor Technology
- Adjustment Computations

Additional Modules for Geoinformatics:

- Theoretical Computer Science
- Geo Programming

During the **second stage (semester 3 and 4)** students will deepen the knowledge acquired during the first stage. This stage involves the following lectures:

- Fundamentals of Spatial Planning and Development
- Stochastics and Statistics
- Computer Networks
- Geovisualisation, Printing and Digital Processes
- CAD Systems
- Surveying and Satellite Geodesy

Additional Modules for Geodesy and Land Management

- Physics
- Land Development and Land Readjustment
- Civil Engineering
- Fundamentals of Photogrammetry and Remote Sensing
- Land Registry, Real Property and Property Law
- Project Management

Additional Modules for Geoinformatics:

- Algorithms and Data Structures
- Software Engineering 1
- Virtual/Augmented Reality
- Web-Client Technologies
- Project Management and Agile Engineering Practices

The **third stage (semester 5 to 7)** includes a practical placement in semester 5 as well as the following modules:

- Geodata Management
- Information Security
- Final Project and Dissertation

Additional Modules for Geodesy and Land Management

- Rhetoric and Presentation
- Land Management Project
- Nature and Environment
- Regional Management

Additional Modules for Geoinformatics:

Software Engineering 2, Software Project
Geodata Processing
Computer Vision
App Programming

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