Geodesy and Geoinformation at TU Wien

**Contemporary Education and Quality Assurance**

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**Agenda**

- Contemporary Education
- Quality Assurance
- Implications

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**Contemporary Education**

**Overall Aims** of the Vienna University of Technology:

- research orientation
- scientific excellence
- research driven education programs
- comprehensive competence

**General Implications** of the overall Aims

1. cultivation of competitive profiles
2. enhancement of study conditions
3. efficiency assurance
4. strengthening of internationalization
Contemporary Education

1) Cultivating competitive profiles

- Reassessment of university structure
- Homogenization of study programs
- Strong personal connection between research and education
- Intensification of research-dependent classes

Contemporary Education

Cultivating competitive profiles - Structure

- 8 Faculties
  - Mathematics and Geoinformation
- 56 Institutes and Departments
  - Institute of Geodesy and Geophysics
  - Institute of Photogrammetry and Remote Sensing
  - Institute of Geoinformation and Cartography

Contemporary Education

Cultivating competitive profiles – Study Programs

- Bachelor in Geodesy and Geoinformation
- Master in Surveying and Cadastre
- Master in Geodesy and Geophysics
- Master in Geoinformation and Cartography
Bachelor in Geodesy and Geoinformation

- Duration: 6 Semester
- Structure: joined intro, 2 mods of specialization
- Content: broad fundamental basics in maths, geometry, physics; dedicated theoretical and practical training in all seven subjects of geodesy and geoinformation

Bachelor in Geodesy and Geoinformation

- Specialization: Geodesy or Geoinformation
- Students: ~ approx. 35-50/semester; often technical background; predominantly male
- Degree: Bachelor of technical Sciences

Master in Surveying and Cadastre

- Duration: 4 Semester
- Admission: due to comparable key competences
- Content: dedicated theoretical and practical training in surveying and cadastre

Master in Surveying and Cadastre

Key Competences: Monitoring Constructions, Positioning, Cadastre, Photogrammetry
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Master in Surveying and Cadastre

- **Specialization:** Applied Geodesy and Cadastre
- **Students:** ~ approx. 10-20/year; aiming for career as civil engineer, public administration, private industry; research
- **Degree:** Master of technical Sciences as „Diplomingenieur“

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Master in Geodesy and Geophysics

- **Duration:** 4 Semester
- **Admission:** due to comparable key competences
- **Content:** dedicated theoretical and practical training in Satellite Geodesy and Geophysics

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Master in Geodesy and Geophysics

Key Competences: Satellite Geodesy, GPS, Geophysics, Remote Sensing, Gravity Field

- **Specialization:** Satellite Geodesy and Geophysics
- **Students:** ~ approx. 10-20/year; aiming for career in private industry; research
- **Degree:** Master of technical Sciences as „Diplomingenieur“
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Master in Geoinformation and Cartography

- **Duration:** 4 Semester
- **Admission:** due to comparable key competences
- **Content:** dedicated theoretical and practical training in Geoinformation and Cartography

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Master in Geoinformation and Cartography

Key Competences: Geoinformation Science, Cartography, WebMapping, LBS, Visualization

Contemporary Education

Master in Geoinformation and Cartography

- **Specialization:** Geoinformation and Cartography
- **Students:** ~ approx. 10-20/year; aiming for career in public administration; private industry; research
- **Degree:** Master of technical Sciences as „Diplomingenieur“

Contemporary Education

General **Implications** of the overall Aims

1. cultivating competitive profiles
2. enhancement of study conditions
3. increase of efficiency
4. strengthening of internationalization
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ad 2) Enhancement of study conditions

- student advisory programs
- mentoring programs
- dedicated courses for overcoming gaps
- strengthening the intro phases
- applying new forms of teaching (eLearning)

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ad 3) Increasing efficiency

- synergetic classes
- characterization of programs by key competences and requirements
- improved information- and communication systems

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ad 4) Increased Internationalization

- enlarging exchange capacities
- stimulate strategic cooperations
- establish international programs

Quality Assurance

Overall Goal is assuring high-level education by means of applying various methods

1. monitoring
2. incentives
3. offers
4. further measures
Quality Assurance

1. Monitoring and Evaluation
   - anonymous evaluation of classes by students
   - comparison of programs with international examples
   - alumni questionnaires
   - transparent communication of results

2. Incentives and Awards
   - Best-Teacher Awards as a result of quantitative and qualitative measures

3. Offers and Skill Enhancement Training
   - Teaching Skills Enhancement Trainings
   - Workshops on didactical methods
   - Workshops on applying eLearning methods

4. Further Measures
   - Faculty Advisory Board
   - International Examiners
   - Tutoring and Mentor programs
   - further cultivating of profiles and strengths
Implications

- TU Vienna has established successful programs on Geodesy and Geoinformation
- Overall strategic goals are implemented in order to keep the overall aim of high-level education
- Methods of Quality Assurance are applied and further developed