The Master’s Programme in Software Engineering

The University of Innsbruck was founded in 1669 and is one of Austria’s oldest universities. Today, with over 28,000 students and 5,000 staff, it is western Austria’s largest institution of higher education and research. For further information visit: www.uibk.ac.at.
Institut für Informatik

- 25 Professors
- 136 Employees
- 1337 Students
- 2.81 Mio. Third-party funding/year
Options for Master-level Studies in Innsbruck

A Master’s Program in Computer Science

A Master’s Program in Software Engineering
Positioning of the Two Programs

Master Computer Science

- A modern curriculum covering a variety of specializations in computer science, with a focus on individual choice
- Taking into account feedback from students, a growing number of lecturers, and industry

✓ research-oriented
✓ lots of choice

Master Software Engineering

- Attract a broad target group of young professionals seeking to improve their software engineering skills
- Offers a curated set of modules serving the needs of digital transformation

✓ broad appeal
✓ streamlined study program
The Master Program
Software Engineering
Admission Profile

**Sarah, 24**

Bachelor Biology with Supplementary Program Computer Science at the University of Innsbruck

Wants to analyze data and develop software to make rural areas greener and smarter
Admission Profile

*Sven, 30*

Bachelor Computer Science
TU Hamburg

Seven years full-time working experience in two IT companies

Wants to deepen his knowledge on software engineering to advance his career and live in the Alps
Curriculum Master Software Engineering

**Semester 1**
- Software Engineering
- Research Methods of Software Engineering

**Semester 2**
- Advanced Software Engineering
- Advanced Software Security Engineering
- Advanced Data Engineering and Analytics
- Software Engineering Project

**Semester 3**
- Individual Choice of Specialisation & Current Topics in Software Engineering
- Master Seminar Software Engineering
- Preparation of Master Thesis

**Semester 4**
- Interdisciplinary Skills
- Master Thesis
- Defense of Master Thesis
Software Engineering

- Software architectures and technology stacks
- Advanced programming concepts
- Agile and continuous software engineering
- Usability engineering and interaction design
- Requirements engineering
- Software quality assurance methods
- Conducting and evaluating projects
Specialization: Software Security Engineering

- Basic concepts of information security and privacy
- Design and development of secure software systems
- Maintenance of secure software systems
- Secure coding techniques
Specialization: Data Engineering and Analytics

- Data processing and visualization
- Selected data analytics and machine learning techniques
- Engineering data products
- Advanced database concepts
### Recommended Elective Modules (with ECTS)

#### Software Engineering
- Data Intensive Applications (5)
- Serverless Cloud Applications Automation (5)
- Distributed Applications in the Edge-Cloud Continuum (5)

#### Computer Science
- Advanced C++ (5)
- Datawarehouse Systems (5)
- Recommender Systems (5)

#### Civil Engineering
- Energy-Efficient Buildings 1-1 (5)
- Energy-Efficient Buildings 2-2 (5)
- Building Services Engineering, Ecology and Construction Management (7.5)

#### Entrepreneurship
- Entrepreneurship 1 (5)
- Product & Service Development (7.5)

#### Scientific Computing (1st semester courses)

#### Information Systems
- Digital Markets (7.5)
- Digital Organizations (10)
- Digital Society (10)
- Operations Management I: Production and Supply Chain Management (10)
- Operations Management II: Optimization, Simulation and Analytics (10)

#### Digital Science Center
- Action, Ethics and Knowledge in a Digitalized World (4)
- Digital Business (7.5)
- Digital Harms, Prevention and Response (5)
- Law and Governance of Digital Technology (5)

#### Biomedical Technology (UMIT)
- Technologies for personalized medicine (7.5)
- Biomedical modeling and regulation (7.5)
- Innovation in biomedical engineering (5)
- Sensor technology, electronics and signal processing (10)
Software Engineering Project

Project Definition & Ownership
- Software Development Project
- Data Project
- Evaluation Project

Concept - Implementation - Acceptance

Mentoring & Controlling
- Supervisors
- Student Team
- External Partner

March - June
Next Steps

1. Admission to Program
   Admission period for the winter semester 2024/25: **July 8 to October 31**
   Detailed information available online at
   [https://www.uibk.ac.at/studium/organisation/termine-und-fristen.html.en](https://www.uibk.ac.at/studium/organisation/termine-und-fristen.html.en)

2. Registration to Courses
   Registration period: **September 1 to September 21**
   Registration via [https://lfuonline.uibk.ac.at/](https://lfuonline.uibk.ac.at/)
Contacts

StV Informatik
Contact: stv-informatik@oeh.cc

Associate Dean of Studies
Univ.-Prof. Dr. Aart Middeldorp,
lehre-informatik@uibk.ac.at
Consultation hour: Wednesday, 11:30 to 13:00

Contact Person Master Software Engineering
Assoz.-Prof. Philipp Zech, PhD,
master-se@uibk.ac.at
Consultation hour: by arrangement

Associate Dean of Studies
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Thank you for your attention

Questions?

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www.uibk.ac.at