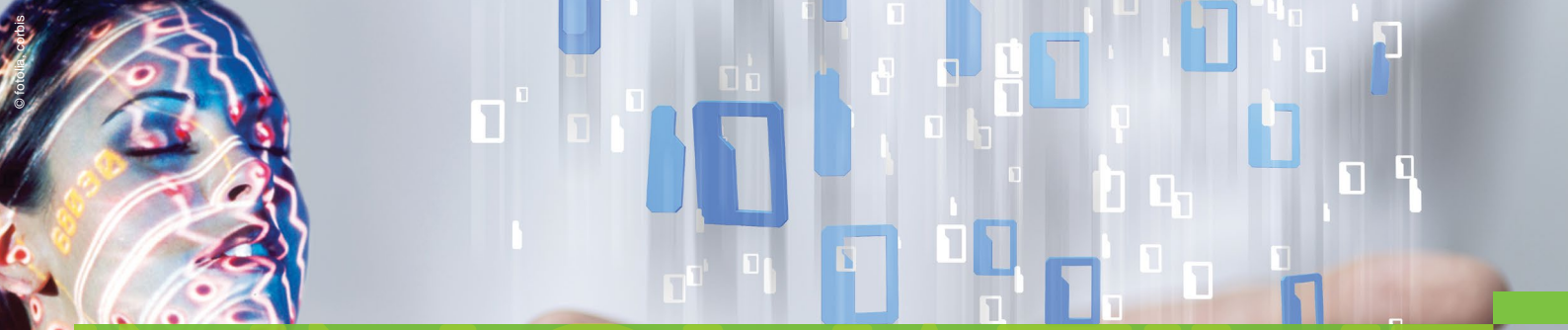

SOFTWARE ENGINEERING

MSc
Full-time

Campus
HAGENBERG

Know-how for Leading Technically Demanding Software Development and Architecture Projects

Software is everywhere, invisibly shaping our daily lives. It is the pulsating heart of data processors of all sizes, from smartphones to supercomputers, coffee machines to cars. Of course, creating high-performance software demands a higher-level skillset.

Our Master's degree in Software Engineering is specifically designed to expand your knowledge and take you to the next level of expertise. The creation of high-end software is like building a house: you need the skills of a craftsperson and the inspiration of an architect. This symbiotic combination is what defines the software architect. Our study programme will empower you to become exactly that.

Career Profile

Graduates of our study programme are among the most sought-after IT specialists in the industry, because they have the expertise to create software for all areas of application and to use the most modern methods and tools.
Your enhanced skillset will also enable you to take a leadership role in technically and organisationally demanding projects that involve the creation of new software or the customisation and development of existing software. Moreover, your know-how will qualify you to work as a consultant in the evaluation of software systems, or even to head the marketing of software products.

You will also have the confidence to consider setting up your own IT company. Alternatively, your command of advanced techniques can open the door to a career with research-oriented companies, or allow you to move on to doctorate studies. In the commercial sector, your ability to carry out application-oriented research and work effectively with research institutes makes you a valuable asset, in particular to small and medium-sized companies.

Focus of Studies

- **Technology:** You will deal with complex heterogeneous, distributed, and mobile software systems as well as the relevant aspects of these systems with respect to architecture, security, and fault tolerance. You will also learn how to identify and solve problems in these areas.
- **Organisation:** You will acquire the necessary expertise, in particular social skills and methodological know-how, to carry out software projects successfully and head up a team of developers.
- **Applied and Theoretical Know-How:** You will develop your knowledge in topical areas of applied and theoretical informatics, including artificial intelligence, modelling, optimisation, and intelligent data analysis.

Essential Information

Degree:
Master of Science in Engineering (MSc)

Duration:
4 semesters (120 ECTS)

Annual Intake:
39

Admission Requirements:
Completed Bachelor's or equivalent degree focusing on areas in practical and applied informatics.

Application:
Online by 30th June at the latest.
Non-EU applicants: send your application by 31st March at the latest – the visa process can take up to 3 months.
www.fh-ooe.at/application

Admission Procedure:
By interview.

Double Degree:
Special agreement with Università della Calabria in Italy (annual intake: 4).

Language of Instruction:
German/English

Semester Abroad:
Flexible curriculum allows out-of-country studies.

Tuition Fees:
EU/EEA citizens: 363.36 EUR per semester (plus Austrian Student Union fee).
Citizens from non-EU/EEA countries: 726.72 EUR per semester (plus Austrian Student Union fee). Scholarships available.

Demands on software are growing and projects have become more challenging, not just technically but also in organisational terms. Today software architects are the most sought-after experts in the IT sector.

Prof. DI Dr. Stefan Wagner, *Head of Studies*

Individual Focus

A broad range of elective modules allows a high degree of specialisation in the Software Engineering Master's programme. For example, students can choose to study more than 60 ECTS in the field of artificial intelligence.

Projects and Research

From the first semester on, students apply acquired skills in projects with external partners from industry, such as voestalpine, BMW, TGW or Red Bull.

Our focus areas in research are machine learning, heuristic methodology, algorithms, cloud computing, etc. Our research group Heuristic and Evolutionary Algorithms Laboratory (HEAL) developed an award-winning framework called HeuristicLab, which is used and further developed in our R&D projects.

Study Abroad

We have a double degree agreement with Università della Calabria in Italy. This agreement allows students to acquire two Master's degrees on the condition that they also attend lectures and seminars in relevant subjects at Università della Calabria and complete a Master's thesis under the supervision of both Università della Calabria and the University of Applied Sciences Upper Austria.

The opportunity to study one or two semesters abroad comes in the second year of studies. Additional partner universities are located in Sweden or Japan, for example.

Did You Know that ...

... alumni of this study programme work for the likes of Google and Amazon, do research at Berkeley and other renowned institutions, or have set up successful companies such as bluesource, softaware and Loxone?

Curriculum

List of Courses	ECTS credits per semester			
	1	2	3	4
Technical and Scientific Subjects and Methods				
Requirements Engineering and DevOps	5			
Service Engineering		5		
Cloud Computing			5	
Formal Languages, Compiler Construction and Tooling	5			
Generative Programming		5		
Multicore Programming and Distributed Computing			5	
Functional and Reactive Programming	5			
Mobile and Ubiquitous Systems		5		
Cutting-Edge Specialisations			3	
Elective Courses (one course from each module is to be chosen)				
Elective Course 1A				
- Heuristic and Evolutionary Algorithms *or* - Modelling and Simulation	5			
Elective Course 2A				
- Artificial Intelligence *or* - Security and Fault Tolerance in Software Systems		5		
Elective Course 3A				
- Alternative Programming Paradigms *or* - Neural Networks and Deep Learning			5	
Elective Course 1B				
- Data Warehousing, Online Analytical Processing (OLAP) and Business Intelligence *or* - Real-Time Systems and Real-Time Programming	5			
Elective Course 2B				
- Advanced Image Processing and Analysis *or* - Data and Machine Learning		5		
Elective Course 3B				
- Big Data Analytics and Interactive Visualisation *or* - Semantic Web Technologies			5	
Projects				
Project	5	5		
Master's Thesis Project			4	
Courses in the Area of Social Competence				
English Conversation			2	
Team Work Practice				1
Master's Thesis and Examination				
Scientific Work			1	
Master's Thesis				24
Master's Seminar				4
Master's Examination				1

Note: Students have to achieve a minimum of 120 ECTS credits in total (30 ECTS credits per semester).

Contact

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