Introduction

This Master programme is unique in its precise tailoring to the needs of the industry. The course includes one year of full-time studies plus one year of integrated practice and is taught completely in English by a young and highly motivated team.

Graduates do not only possess cutting-edge technological competence but also excellent management and engineering skills – perfect pre-requisites for a high-flying career in software engineering!

Course structure

The Master programme comprises four semesters. The first two semesters provide theoretical knowledge in the domains Management, Software Engineering for Distributed Systems, Advanced Information Systems and Logistic Systems plus seminars on recent developments in these domains.

Students spend the third and fourth semester working as an intern in a company to gain more practical experience. This second year is dedicated to training assignments in application-oriented research and development projects.

Industrial Relevance

This Master programme prepares you for complex management and engineering tasks in the domain of software development for industrial applications. In the field of industrial applications, information technology is increasingly characterised by integrated solutions interconnecting systems on various levels. Its applications range from low level control of production processes to high level management and logistic tasks of multiple independent companies.

New methods and tools have been developed which are based on the component-oriented software development paradigm together with role based programming and design patterns (e.g. SUN Enterprise Java Beans, Microsoft .NET).

New methods are also available for the integration of heterogeneous systems. These methods are based on generic application protocols (e.g. Web Services) which can be customised for a given application. Typically, the customisation includes the definition of terms (e.g. product or service names, attributes) from the application context. This effort is supported by formal approaches (Ontology) which ease the agreement on terms and reduce the room for possible misunderstandings.

Key nodes in a distributed environment are information systems managing a wide range of different types of data including relational and non-relational data types (e.g. documents, images, vectors for CAD and geographical positions). These information systems need to provide fast access and analysis capabilities for the stored data.

Beneath traditional technologies based on relational and object-orientated databases, new methods like OLAP (Online Analytical Processing) and vector databases as well as new indexing technologies are increasingly used.

On the application side, such a system has to support the business processes of the involved organisations. Beneath other functions, a system needs to support at least the logistic part of these processes. This includes the management of resources and the planning and monitoring of activities.

The planning of activities needs to be supported by automatic planning methods (e.g. search and constrained based methods, genetic algorithms, simulation).

Professional Perspectives

Experts possessing a good understanding of these methods combined with extensive experience are still rare in industry.

Since this master programme provides the theoretical background knowledge together with significant practical experience, it opens the perspective of becoming a highly demanded and well-paid expert.

Up to now, we have a 100 % placement of our graduates in very renowned companies. All our graduates have immediately found well paid positions with companies such as Siemens and ND SatCom but also with smaller local companies.

Degree

Master of Engineering

Fees

2.000 EUR / semester

The University of Applied Sciences Hof supports the application of students for industrial grants during the Master programme.

Courses

Management	
Introduction to Management and Organisation	4*
Project Management	4
Leadership	3

Software Engineering for Distributed Systems	
Component Oriented Software Development	5
Generic Application Protocols	5
Semantic Networking	5
Recent Trends in Software Engineering	3

Advanced Information Systems	
Efficient Storage of Non-Relational Data Types	5
Online Analysis and Processing	5
Recent Trends in Information Systems	3

Logistic Systems	
Principals of Logistic Systems	5
Control of Distributed Manufacturing Environments	5
Automatic Planning Methods	5
Recent Trends in Logistics	3

Training Assignments	
Project „Software Specification and Design“	14
Seminar „Software Specification and Design“	1
Project „Software Validation“	14
Seminar „Software Validation“	1
Master Thesis	30

** ECTS*

Admission Requirements

Applicants must hold a Bachelor degree in information technology comprising at least three years of theoretical studies, with emphasis on software engineering, programming, database systems and computer networks. Additional professional experience in the software industry is strongly recommended. Applicants need to be proficient in English.

Application

Applications have to be submitted by mail before the following dates:

- May 15th for the winter semester (starting October 1st)
- November 30th for the summer semester (starting March 15th)

Application forms can be downloaded from www.fh-hof.de/master_swe.html

For further information, please contact:
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About us

Our university is situated in the heart of Europe right between Munich, Berlin and Prague. Here you get first-class, hands-on education at affordable rates.

As a University of Applied Sciences, we pay special attention to the practice orientation of all courses and assignments. Our professors have profound experience both in the industry and in academia. With a very comfortable student-lecturer ratio, students get intensive personal support.

Adam from Poland, Software Engineer:
„This Master programme opened the door to my future career in the IT industry. The commitment of all professors and lots of practical and theoretical exercises were the key to my success. The practical part of the study programme I spent at Siemens Medical Solutions where I wrote my Master‘s Thesis on an incredibly interesting topic and... well... the company did not let me go! :-) “

Saurabh from India, Master student:
„The best part of the course is the internship which gives real hands-on experience on working in German companies and developing enterprise wide applications. This one year internship carves a professional out of a student.“

hochschule hof
University of Applied Sciences

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Software Engineering for Industrial Applications

Master of Engineering