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## > Welcome to Münster

Master of Science in Information Systems  
at the University of Münster

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WWU Münster

Department of  
Information Systems

 Münster School  
of Business  
and Economics

# Master of Science in Information Systems at the University of Münster

Dear prospective students,

*this brochure is intended for the benefit of people who are interested in the MSc programme in Information Systems offered by the University of Münster. The booklet provides information about our conception of information systems, outlines the advantages of a degree in this subject, and puts forward a number of arguments which may convince you that Münster is the right place to study this fascinating and challenging academic discipline.*

*Experience has shown that leisure facilities are just as important as congenial academic surroundings, and that students are more likely to bring their studies to a successful conclusion if they work in a pleasant environment. In order to help prospective students to take the right decisions, we have therefore set forth some facts about the city of Münster, the university, and the courses which are currently on offer in our department. We shall be happy to answer any questions you may have, and we look forward to seeing you in Münster in the not too distant future.*

Professor Dr. Jörg Becker  
*Managing Director, Department of Information Systems*

## Our School's Mission

Our comprehensive programme provides opportunities for both paradigmatic and interdisciplinary research. In general we endeavour to strike a balance between scholarly and applied research in order to ensure that theory and practice do not evolve in opposite directions. Our graduates are qualified to occupy high-ranking posts in business and government. Theoretical work enables students to develop conceptual skills, while doing applied research helps them to acquire the problem-solving competencies they need in order to translate shadowy abstractions into concrete actions.

## Basic Facts about the MSc programme in Information Systems

- > a two-year full-time programme conducted in English
- > The integration of information systems with computer science, statistics and business administration
- > Research-led teaching in an internationally focused research environment supported by the European Research Centre for Information Systems (ERCIS)
- > A balanced programme that encompasses formal engineering and managerial methods, techniques, and approaches
- > Excellent connections with industry
- > a highly ranked university department and a School of Business and Economics
- > Admission in the summer or the winter term

## Master of Science in Information Systems

This programme aims to provide students with in-depth scientific skills and knowledge. It combines the traditional advantages of information systems courses and an internationally focused research environment. At the Münster School of Business and Economics, computer science is integrated with statistics, business administration, and traditional information systems. The research environment is supported by the European Research Centre for Information Systems (ERCIS). Students learn to assess and configure sophisticated information technology software in such a way that it can be used in business companies and public administration. They are prepared for a career in teaching or research in the field of Information Systems. Once they have obtained their degree, they can seek admission to a doctoral programme or apply for jobs in areas where there is a demand for all-rounders with a sound knowledge of business administration and computer science (e.g. management consultancy and software development).

### Do I have the necessary qualifications to enrol for the MSc in Information Systems programme?

#### – Student Profiles

The programme is ideal for people who have a bachelor's degree in information systems or business computing. However, we also admit candidates who have taken degree courses in computer science, management studies or

business engineering, and we welcome people who have majored in economics and minored in information systems. The odds are that our programme will appeal to you if you would like to view information systems in a managerial perspective, especially if you are sufficiently talented to cope simultaneously with the challenges posed by process, network or information management on the one hand and software engineering, statistics, modelling and the like on the other hand.

### What are the advantages of having a degree in Information Systems?

#### – Opportunities and Services

If you have an MSc in Information Systems you will be able to embark on a career in industry or in academia. Lectures are complemented by hands-on tutorials, internships, workshops, and project seminars. While taking part in project seminars or working on your Master's thesis, you will have an opportunity to co-operate with well-known companies. The theoretical knowledge you will acquire through lectures and seminars will be complemented by insights into the practicalities of the world of business. Such insights will be provided by internships, on-site corporate training courses, regularly scheduled excursions, and guest lectures given by people who have achieved renown in economics, business or politics. Many of our graduates now occupy senior positions in management consultancies, ICT companies, and the information systems departments of service sector firms (e.g. banks and insurance companies). In order to foster contacts

between students and graduates, we have set up an alumni network which currently boasts over 300 members and is still expanding.

### What does the programme involve?

#### – The Goals of the Programme

The MSc programme in Information Systems achieves an ideal synthesis of theory and practice. It provides a balanced mix of formal methods, techniques and approaches adopted by engineers and managerial specialists. It is fuelled by ongoing research at ERCIS and prepares students for research posts in industry or academia as well as for managerial positions and jobs in the consulting business. Doing applied research helps them to hone their problem-solving skills and translate cerebral abstractions into concrete actions.

### What will I learn?

#### – The Curriculum and the Structure of the Programme

This is an accredited full-time programme which extends over two years (four semesters) and carries 120 credit points. The structure of the programme reflects current research efforts as well as the requirements of the business world. There are four areas of specialisation which are termed 'tracks': process management, business intelligence, information management, and business networks.

In the first year of their studies, students select three of the four tracks. Each track consists of two modules, and each module carries 10 ECTS credits. In the second year of their studies participants can explore one of the four areas of specialisation in greater depth. This exploratory work is facilitated by a project seminar carrying 12 credit points, and at least two ordinary seminars carrying six credit points each. The seminars are complemented by relevant elective courses carrying six credit points each. All this coursework constitutes the basis of the Master's thesis, which carries 30 credit points.

Grades are based on continuous assessment as well as written examinations which are held every semester. In the first year of their studies, students take courses consisting mainly of lectures that are complemented by tutorials.

In the second year of their studies, students attend seminars where they learn how to develop and fine-tune their presentational skills. In the project seminar they work in small groups and carry out separate projects which are often based on real-life situations.

The Master's thesis is a piece of research relating to one of the aforementioned tracks. As the programme is strongly oriented towards research, a certain number of courses are devoted to research methods. These courses are an integral part of the curriculum and are intended to provide students with the methodological expertise they need in order to complete their theses successfully.

### Can I study abroad?

### Internships and Opportunities for Exchanges between Universities

Students who are anxious to improve their job prospects can serve a summer internship or spend a couple of months at a university with which we have a partnership agreement or

with which we co-operate on a regular basis. The Information Systems Department in Münster is part of an international network of companies, research centres and information systems departments which work together under the aegis of ERCIS. Students who wish to study abroad may also avail themselves of the opportunities offered by the Erasmus student exchange programme.



Track	Information Management	Process Management	Business Networks	Business Intelligence
<b>Winter term</b>	<ul style="list-style-type: none"> <li>› Managing the Information Age Organization</li> <li>› IM Tasks and Techniques</li> </ul>	<ul style="list-style-type: none"> <li>› Workflow Management</li> <li>› Model-driven Software Development</li> </ul>	<ul style="list-style-type: none"> <li>› Supply Chain Management</li> <li>› Interorganizational Systems</li> </ul>	<ul style="list-style-type: none"> <li>› Data Integration</li> <li>› MIS and Data Warehousing</li> </ul>
<b>Summer term</b>	<ul style="list-style-type: none"> <li>› Information Management Theories</li> <li>› Information Systems Architecture</li> </ul>	<ul style="list-style-type: none"> <li>› Information Modeling</li> <li>› Production Planning and Control</li> </ul>	<ul style="list-style-type: none"> <li>› Enterprise Application Integration</li> <li>› Information Security</li> </ul>	<ul style="list-style-type: none"> <li>› Data Analytics – Theory</li> <li>› Data Analytics – Applications</li> </ul>
<b>Without Term Association</b>	Project Seminar		Electives › Five modules (including at least two seminars)	
<b>Without Term Association</b>	Master's Thesis › Thesis › Thesis Defense			

### What are my career options?

#### Job profiles

There are four typical job profiles, each of which corresponds to one of the aforementioned tracks. It goes without saying that other profiles are quite conceivable.

#### Information Manager

Information managers who have been trained in Münster design and implement information infrastructures and systems that facilitate the flow of information between corporations and their business partners. They do their utmost to meet the requirements of a networked economy and accord great importance to the strategic role of information and communications technology.

Studying information management in conjunction with process management leads to a deeper understanding of business processes and information needs; and the systematic exploration of business networks conduces to a better understanding of the challenges faced by managers and the potential of information structures in business networks.

Information managers and chief information officers (CIOs) typically work in big organisations in every branch of industry, but they have a particularly important role to play in information intensive sectors (e.g. the media and technology sectors, the financial services industry, or the travel and tourist trades).

#### Process Manager

Process managers view companies as interdepartmental value chains and endeavour to identify and optimise corporate value-added processes. Modern information technology can facilitate the dismantling of obsolete structures and the streamlining of a company's systems. Processes are analysed with a view to identifying recurrent patterns, and these patterns are recorded in reference models. Process managers eliminate superfluous procedures, optimise the workflow through the judicious use of relevant data processing techniques, and bring various processes into line with each other in order to streamline workflow management and minimise the amount of time spent on individual tasks.

Studying process management in conjunction with business networks leads to a deeper understanding of inter-company cooperation, while studying process management in conjunction with information management enables them to manage the flow of information more efficiently.

Process managers are often hired by administrators who are anxious to optimise a wide variety of interdependent processes. They find ready employment in public institutions and in economic sectors with highly complex administrative systems (e.g. the banking and insurance industries).

#### Business Network Manager

Business network managers who have been trained in Münster consider firms as part of a business ecosystem or value web. They have to design inter-organizational information infrastructures and manage process and information interfaces

with business partners. In order to increase the performance of a network, they have to consider new divisions of tasks and responsibilities (process and network redesign) as well as models of forecasting and collaborative planning.

People who aspire to work as business network managers study business intelligence or information management in order to acquire the analytical skills and methodological expertise they will need when they have to manage information flows and make a critical analysis of the way in which information is distributed under given circumstances. Studying process management in conjunction with business networks provides an additional asset in the form of skills and techniques relating to the management and optimisation of process distribution.

Business network managers often opt for careers in networked sectors of the economy such as the trade, logistics, automobile and tourist industries.

#### **Information Analyst**

Information analysts who have been trained in Münster have an unerring knack for transforming seemingly random pieces of data into information which may turn out to be extremely useful to people who are in charge of companies. Graduates who have chosen to specialise in information management have good analytical skills, know what kind of information is required by business enterprises, and can cope with the technical problems connected with databases. In addition, they have learnt how to handle the nuts and bolts of marketing and management accounting.

Since business intelligence provides the raw data which information managers need in order to do their job, it makes sense to study business intelligence in conjunction with information management. It is also advisable to study business intelligence in conjunction with business networks since these tracks complement each other in every conceivable way.

Information analysts have an important role to play in economic sectors where data-traffic volume and the demand for information are high. Typical examples are provided by the market research industry and the commercial and financial sectors.

#### **Why is the MSc in Information Systems programme in Münster so good? – Quality and Achievements**

The Department of Information Systems considers information systems as a distinct discipline that sets up links between computer science and various social sciences, especially business administration. Students who enrol for our programme soon grow accustomed to viewing facts and ideas in an interdisciplinary perspective. In addition, they learn how to take decisions relating to information technology. Such decisions may be structural, strategic or organizational in nature, and they may have to be made at a corporate or a network level.

Since the Department of Information Systems enjoys an excellent reputation as a research institution, graduates of

the Master's programme have enviable job prospects. They may opt for an academic career or choose to apply their knowledge outside academia as top-flight researchers with a genius for innovation.

The University Development Centre (Centrum für Hochschulentwicklung) recently came to the conclusion that our department is the best one of its kind in Germany. This flattering judgment suggests there are good grounds for believing that the department and its graduates have struck an ideal balance between theory and practice.

#### **Where will I study? – The University of Münster and the Department of Information Systems**

With 15 faculties and over 130 degree courses, the University of Münster, which was founded in 1780, is one of Germany's leading universities. Its institutes are dotted all over the city. Some 37,000 people are currently enrolled at the university, and almost 3,500 of these students are foreigners.

The Department of Information Systems, which is located on the Leonardo Campus in the north of Münster, was founded in 1990. At present 650 students are attending courses in Information Systems. There are six full professors, ten assistant professors, 50 research and teaching assistants, and about 50 student assistants.

From the outset, the department has sought to provide courses which have a sound theoretical underpinning and are slanted towards practical applications. We are convinced that our new master's programme in information systems will enhance our department's reputation.

#### **Who are the assistant professors?**



##### **Stefan Stieglitz**

is an assistant professor of communication and collaboration management. The main focus of his teaching and research work is on computer-supported cooperative work (CSCW). He accords great importance to the various ways in which social media are used and adapted in business enterprises (community engineering), and he is particularly interested in analysing the way people communicate via social media (social media intelligence).



##### **Rainer Böhme**

is an assistant professor of IT security. His courses deal with every aspect of information security from cryptology to management. He is anxious to infuse his students with an interest in current research on economic aspects of security and privacy, multimedia security, and digital forensics.



##### **Stephan Meisel**

is an assistant professor of quantitative methods for business logistics. He is interested in dynamic decision problems arising in logistics and business networks. Both his teaching and research primarily deal with models and methods required to solve these problems.

## Who are the full professors?



### Jörg Becker

is a professor of information systems and information management. He is editor in chief of the journal ISEB – Information Systems and E-Business Management. He is also a member of the North Rhine Westphalian Academy of Sciences. The fields in which he teaches and conducts research encompass process management, information modelling, reference modelling, management information systems, retail information systems, information systems for manufacturing industries, and e-government.



### Herbert Kuchen

is a professor of practical computer science who teaches software engineering, including enterprise application integration, formal specification, and security. He is currently conducting research on model-driven software development, testing, debugging, parallel programming, and e-learning.



### Heike Trautmann

is a professor of information systems and statistics. Teaching concentrates on statistical techniques for quantitative data analysis and their application in information systems. Main research topics are (multiobjective) optimization, algorithm selection and statistical quality control.



### Bernd Hellingrath

is a professor of information systems in supply chain management and logistics. His courses deal with the principles of information systems and the application of such systems to the design, planning and implementation of intra- and inter-company logistics. His current research interests are the modelling of approaches to the problems posed by logistics networks, methods and supporting information systems which can enhance logistic performance management, and the application of RFID technology to the supply chain.



### Stefan Klein

is a professor of inter-organizational systems. The fields in which he teaches and conducts research are strategic information management, electronic business policies and strategies, the development paths of interorganizational information systems, real-time communication, and virtual organizations.



### Gottfried Vossen

is a professor of computer science. He is the European editor in chief of Elsevier's Information Systems – An International Journal. His research interests include conceptual and application-oriented problems connected with databases, information systems, service-oriented computing, e-learning, and the Web.

## Where will I live? – The City of Münster

Welcome to Münster, which is reputed to be one of the best places in the world to live in. In 2004 Münster won the UNEP Livcom award, far outstripping other deserving candidates such as Toronto and Coventry. Münster is located in the northern part of the Land of North Rhine Westphalia. It is the cultural centre and the structural hub of the region of Westphalia. It is also a unique university city. Since some 37,000 students are enrolled at the University of Münster and 10,000 students follow courses at the University of Applied Sciences, almost one in five of the city's 280,000 inhabitants is a student. This huge student population exerts a clearly recognizable influence on the lifestyle of the people who live in Münster and its immediate environs.

Münster's historic city centre was almost completely destroyed during World War II, but it has been meticulously restored and is popular with locals and tourists alike. There are ancient churches, gabled houses, arcades, traditional taverns and trendy cafés, narrow cobblestoned streets, and bustling squares. Münster's cultural life is rich and diverse. Festivals provide abundant entertainment and excitement, and further opportunities for recreation are offered by museums, theatres, cinemas, bars and pubs.

One of the most attractive features of Münster's cityscape is its verdure. Special mention must be made of the Botanic Garden, the Schlossgarten (a large garden behind a baroque palace which has been the headquarters of the University

since 1954), and the Promenade, a circular tree-lined road which was built in the late eighteenth-century after the demolition of the town walls. Not far from the city centre is the Aasee, an artificial lake surrounded by green open spaces. This is an ideal place for strollers, joggers, picknickers and yachtsmen.

Münster is the bicycle capital of Germany. Almost everyone has a bike. Owing to the numerous bicycle paths, it is possible to cycle comfortably around the city without incurring undue risks. Cyclists can also make day trips to the numerous moated castles which constitute one of the region's main tourist attractions.

As there is an excellent road and rail network, those who wish to venture further afield can easily travel by bus or by train to nearby Osnabrück, the Ruhr, Cologne, or the Dutch town of Enschede. Berlin, Amsterdam and the North Sea are only a three and a half hour train ride away.

[www.muenster.de/stadt/tourismus/en](http://www.muenster.de/stadt/tourismus/en)

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