Admission Exams

Master of Strategic Information Management (MSc) and Master of Artificial Intelligence and Data Analytics (MSc)

One admission criterion for both study programs are sufficient skills in object-oriented programming in Java, relational database systems, IT management and business administration. For each field, at least 5 ECTS must have been acquired in a previous university course at a state or state-recognized German or foreign university.

Specifically, we expect the following skills:

- Ability to develop (simple) applications based on object-oriented programming paradigms in Java.
- Ability to design and model data structures and implement them in relational database systems.
- Basic knowledge of essential concepts of information and IT management (information systems, business processes, modeling, integration concepts, application systems, IT strategy and IT governance, IT sourcing)
- Knowledge of basic concepts of business administration (constitutive decisions, value creation, financing, accounting, marketing)

If you cannot prove your competencies in one or more fields through ECTS from previous university studies, we offer a preliminary oral examination.

The exam will be an oral exam via Zoom and will approx. 30 minutes per field. We will offer two dates for the admission exams, one mid. July and one End of August.

You will need approx. 120 hours preparation time per field (equals approx. 5 ECTs) to pass the exam.

To have enough time to prepare, **you should notify us as early as possible if you would like to take the preliminary exam.**

You can only register for the examination if the preparation time is sufficient, so for one field you must register four weeks in advance, for two fields eight weeks, for three fields 12 weeks.

International applicants: Please also consider the time you need to apply for the visa. The lectures are partly held in presence. Therefore, you must be able to be in Neu-Ulm at the end of September.

Below we outline the contents of those exams in more detail and provide materials to prepare for the exam.

Object-oriented programming

The goal of the **object-oriented programming** exam is to prove that you are capable of programming in Java and understand the theoretical and more universal concepts behind the language and could explain and apply and transfer them to new problems.

The first part of the exam will be a Q&A session on the theory (example question: What are the reasons for the success of Java?). The second half will be short practical programming exercise(s), which you should solve as well as possible live while explaining what you are doing.

It is necessary that you have the JDK, and a Java IDE (such as VS Code or Eclipse or whatever you like, it does not matter) at hand and that you are able to share your screen via Zoom during the session (please try this out before, so we do not loose time, as some systems require to allow screen sharing in the operating system first).

Recommended resources for preparation:

https://www.geeksforgeeks.org/java/

Relational database systems

The goal of the **relational database systems** exam is to prove that you are capable of programming in SQL, respectively, and understand the theoretical and more universal concepts behind relational database system and could explain and apply and transfer them to new problems.

The first part of the exam will be a Q&A session on the theory. The second half will be short practical programming exercises in SQL, which you should solve as well as possible live while explaining what you are doing.

It is necessary that you have a relational database including a suitable frontend installed or accessible ready at hand, and that you can share your screen via Zoom during the session.

Recommended courses for preparation:

https://www.edx.org/course/introduction-to-sql

https://www.edx.org/course/introduction-to-sql-2

https://www.edx.org/course/databases-5-sql

https://www.edx.org/course/modeling-and-theory

IT-Management

The goal of the **IT-management** exam is that you show your understanding of some basic concepts related to managing IS in contemporary firms (information system types, use and impacts of IT on contemporary enterprises, challenges, and management approaches etc.) and can apply and transfer them to practical problems.

(Focus) topics:

- Necessity, contents, and objectives of IT management
- Definition, nature and benefits of information and information systems (IS) in contemporary organizations
- Relationship between IT and corporate performance
- Use of IT in companies (e.g., integration)
- Types of IS
- Implementation of IS (approaches, challenges)
- Sourcing of IS
- Business-IT alignment

Example questions:

What would you look at when selecting a standard software package? Explain the concept of Business-IT alignment.

Recommended read:

Laudon, K. C., & Laudon, J. P. (2022). Management information systems: Managing the digital firm. 17th Edition. UK: Pearson Education.

Additional courses for preparation:

- https://www.edx.org/course/digital-technology-and-innovation
- https://www.edx.org/course/introduction-to-management-information-systems-mis

Business Administration

The goal of the **business administration** exam is that you show your understanding of some basic concepts of managing a business. Imagine, you found a new business. Which decision do you need to make (e.g., related to the organizational form, financing, strategy, marketing) and what should keep an eye on (e.g., assets, costs, revenues, etc.)?

Recommended courses for preparation:

- https://www.edx.org/course/operations-management
- https://www.edx.org/course/people-management
- https://www.edx.org/course/corporate-finance-2
- https://www.edx.org/course/strategic-management
- https://www.edx.org/course/accounting-for-decision-making
- https://www.edx.org/course/marketing-management

Example questions:

Which legal form would you chose if you want to limit liability? What is the difference between fixed and variable costs?