Akzentsetzungsmodul der Informatik

inf006 - Software Engineering II

Module label: Software Engineering II
Module code: inf006
Credit points: 6.0 KP
Workload: 180 h

Used in course of study:
- Bachelor's Programme Business Informatics (Bachelor) > Akzentsetzungsmodul
- Bachelor's Programme Computing Science (Bachelor) > Akzentsetzungsmodul
- Master of Education Programme (Gymnasium) Computing Science (Master of Education) > Mastermodul
- Master's Programme Business Informatics (Master) > Akzentsetzungsmodul der Informatik

Contact person:
- Module responsibility: Andreas Winter
- Authorized examiners: Andreas Winter, Die im Modul Lehrenden

Entry requirements:
The objective of the module inf005 Software Engineering II is to deepen the subjects and skills of the module Software Engineering I. Special software engineering topics will be presented, deepened and discussed. The lecture deals with different software engineering methods and technology which will be discussed in the seminar. The discussions are contextualised by scientific research projects, practical projects and latest research findings.

Professional competence:
The students:
- Deepen software engineering methods and techniques
- Use specific software engineering methods and techniques
- Differentiate developmental techniques of software systems
- Discuss software engineering topics
- Design software systems by using appropriate methods
- Solve software engineering problems independently
- Reflect self-designed software engineering solutions critically and present them appropriately

Methodological competence:
The Students:
- Structure problems with modelling techniques
- Develop actual methods of software engineering
- Present software engineering solutions
- Write scientific papers independently

Social competence:
The Students:
- Explain and discuss software development solutions in their practical use
- Accept criticism and see it as an asset

Self-competence:
The Students:
- Reflect their problem-solving behaviour with regard to the possibilities of software technology
- Internalize the presented developmental methods and integrate them in their own actions

Module contents:
The following subjects are provided:
- Concept of systems
- Iterative and agile process models of software development
- System development and cost estimation
- Methods, techniques and tools to collect requirements
- Techniques to develop and describe software architecture
- Measurement and evaluation of software systems
- Extended techniques of modelling, meta-modelling, domain specific languages
- Model based development
- Methods and techniques of software evolution

**Reader’s advisory**

- Helmut Balzert: Lehrbuch der Software-Technik, Spektrum Akademischer Verlag, 3. Auflage 2009

and actual papers from IEEE Software, IEEE Transactions on Software-Engineering, Informatik-Spektrum and conferences (z.B. ICSE, ICSM, WCRE, CSMR, ICPC, SLE, u.a.)

**Links**

<table>
<thead>
<tr>
<th>Language of instruction</th>
<th>German</th>
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<td>Duration (semesters)</td>
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<tr>
<td>Module frequency</td>
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<td>Module capacity</td>
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<tr>
<td>Modullevel</td>
<td>AS (Akzentsetzung / Accentuation)</td>
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<td>Modulart</td>
<td>je nach Studiengang Pflicht oder Wahlpflicht</td>
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<td>Lern-/Lehrform / Type of program</td>
<td>V+S</td>
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<tr>
<td>Vorkenntnisse / Previous knowledge</td>
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**Examination**

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<th>Type of examination</th>
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<td>At the end of the lecture period</td>
<td>Portfolio (30-minute presentation, 1 paper (4 pages, IEEE) and oral exam)</td>
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**Course type**

<table>
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<th>Comment</th>
<th>SWS</th>
<th>Frequency</th>
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<tr>
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Total time of attendance for the module: 56 h
inf008 - Information Systems II

Module label: Information Systems II
Module code: inf008
Credit points: 6.0 KP
Workload: 180 h

Used in course of study:
- Bachelor's Programme Business Informatics (Bachelor) > Aufbaumodule
- Bachelor's Programme Computing Science (Bachelor) > Akzentsetzungsmodule
- Bachelor's Programme Economics and Business Administration (Bachelor) > Studienrichtung Wirtschaftsinformatik
- Master's Programme Business Informatics (Master) > Akzentsetzungsmodule der Informatik

Contact person:
Module responsibility: Marco Grawunder
Authorized examiners: Marco Grawunder, Die im Modul Lehrenden

Entry requirements:

Skills to be acquired in this module:
The Module “Information Systems II” enhances the knowledge and the concepts of “Information Systems I”.

Professional competence: The students:
- Know further concepts, languages and architectures of databases
- Analyse advanced information processing tasks
- Analyse complex requirements of information systems appropriately
- Realize information requirements and gather relevant information

Methodological competence: The students:
- Propose concrete processing principles for special application classes
- Reflect specific technologies’ consequences and proceedings

Social competence: The students:

Self-competence: The students:
- Reflect their problem-solving behaviour with regard to extended information processing concepts

Module contents:
- Implementation of databases (architecture, index structures, query processing and optimization)
- Data integration and data analysis (data integration, data warehouses, data mining)
- Information retrieval
- Parallel databases

Reader’s advisory:
Suggested reading:
- Härder, T., Rahm, E.: Datenbanksysteme - Konzepte und Techniken der Implementierung, Morgan Kaufmann
- U. Leser, F. Naumann. Informationsintegration: Architekturen und Methoden zur Integration verteilter und heterogener Datenquellen. dpunkt
- Bauer/Günzel. Data-Warehouse-Systeme, dpunkt
- Han/Kamber/Pei. Data Mining: Concepts and Techniques, Morgan Kaufmann

Links:
Language of instruction: German

Duration (semesters): 1 Semester

Module frequency: jährlich

Module capacity: unlimited

Module level: AS (Akzentsetzung / Accentuation)

Modulart: Wahlmodul / Opportunity

Lern-/Lehrform / Type of program: V+Ü

Vorkenntnisse / Previous knowledge:

Examination:

Final exam of module:
At the end of the lecture period
written or oral Exam

Course type | Comment | SWS | Frequency | Workload attendance
---|---|---|---|---
Lecture | 3.00 | SuSe | 42 h
Exercises | 1.00 | SuSe | 14 h

Total time of attendance for the module: 56 h
### inf018 - Media Processing

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<td>Workload</td>
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**Used in course of study**

- Bachelor's Programme Biology (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Bachelor's Programme Business Administration and Law (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Bachelor's Programme Business Informatics (Bachelor) > Akzentsetzungsmodule
- Bachelor's Programme Business Informatics (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Bachelor's Programme Chemistry (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer" more...
- Bachelor's Programme Comparative and European Law (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Bachelor's Programme Computing Science (Bachelor) > Akzentsetzungsmodule
- Bachelor's Programme Computing Science (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Bachelor's Programme Economics and Business Administration (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Bachelor's Programme Education (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Bachelor's Programme Engineering Physics (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Bachelor's Programme Intercultural Education and Counselling (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Bachelor's Programme Mathematics (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Bachelor's Programme Physics (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Bachelor's Programme Physics, Engineering and Medicine (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Bachelor's Programme Social Studies (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Bachelor's Programme Sustainability Economics (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Dual-Subject Bachelor's Programme Art and Media (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Dual-Subject Bachelor's Programme Chemistry (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Dual-Subject Bachelor's Programme Computing Science (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Dual-Subject Bachelor's Programme Dutch Linguistics and Literary Studies (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Dual-Subject Bachelor's Programme Economic Education (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Dual-Subject Bachelor's Programme Economics and Business Administration (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Dual-Subject Bachelor's Programme Elementary Mathematics (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Dual-Subject Bachelor's Programme English Studies (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Dual-Subject Bachelor's Programme Gender Studies (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Dual-Subject Bachelor's Programme General Education (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Dual-Subject Bachelor's Programme German Studies (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Dual-Subject Bachelor's Programme History (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Dual-Subject Bachelor's Programme Material Culture: Textiles (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Dual-Subject Bachelor's Programme Mathematics (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
musisch-künstlerischer Fächer

- Dual-Subject Bachelor's Programme Music (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Dual-Subject Bachelor's Programme Philosophy / Values and Norms (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Dual-Subject Bachelor's Programme Physics (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Dual-Subject Bachelor's Programme Politics-Economics (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Dual-Subject Bachelor's Programme Protestant Theology and Religious Education (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Dual-Subject Bachelor's Programme Slavic Studies (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Dual-Subject Bachelor's Programme Social Studies (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Dual-Subject Bachelor's Programme Special Needs Education (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Dual-Subject Bachelor's Programme Sport Science (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Dual-Subject Bachelor's Programme Technology (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"
- Dual-Subject Bachelor's Programme Pädagogisches Handeln in der Migrationsgesellschaft (Bachelor) > PP "Medieninformatik für Studierende musisch-künstlerischer Fächer"

Master of Education Programme (Gymnasium) Computing Science (Master of Education) > Mastermodule

- Master's Programme Business Informatics (Master) > Akzentsetzungsmodule der Informatik

Contact person

Module responsibility

- Susanne Boll-Westermann

Authorized examiners

- Susanne Boll-Westermann
- Die im Modul Lehrenden

Entry requirements

Skills to be acquired in this module

Professional competence:
The students:

- name the basic concepts and characteristics of digital media
- name the core concepts of encoding and compressing images, videos and audio files
- characterise the complexity of the analysis, classification and processing of unstructured media, using the examples of image analysis
- apply concepts of encoding, compression and image analysis independently

Module contents

Media processing technologies are presented in the lecture. One focus of the lecture is the encoding of digital images and the compression of an image, image enhancement and image processing. The lecture also deals with encoding and analysis of video and audio. This lecture is accompanied by simple practical tasks.

Reader's advisory

- Reserve shelf in the library; extensive list of links in e-learning platform StudIP covering course topics.

Links

https://www.uni-oldenburg.de/informatik/medieninformatik/lehre/

Language of instruction

German

Duration (semesters)

1 Semester

Module frequency

jährlich

Module capacity

unlimited

Modullevel

AS (Akzentsetzung / Accentuation)

Modulart

je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program

V+P

Vorkenntnisse / Previous knowledge

Examination

Time of examination

Type of examination
<table>
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<tr>
<th>Examination</th>
<th>Time of examination</th>
<th>Type of examination</th>
</tr>
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<td>At the end of the lecture period</td>
<td>Project and oral exam</td>
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<td>Comment</td>
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<tr>
<td>Project</td>
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<td>WiSe</td>
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Total time of attendance for the module: 56 h
inf100 - Human Computer Interaction

Module label
Human Computer Interaction

Module code
inf100

Credit points
6.0 KP

Workload
180 h

Used in course of study
- Master's Programme Business Informatics (Master) > Akzentsetzungsmodule der Informatik
- Master's Programme Computing Science (Master) > Praktische Informatik
- Master's Programme Embedded Systems and Microrobotics (Master) > Akzentsetzungsmodul
- Master's Programme Engineering of Socio-Technical Systems (Master) > Embedded Brain Computer Interaction
- Master's Programme Engineering of Socio-Technical Systems (Master) > Human-Computer Interaction

Contact person
Module responsibility
- Susanne Boll-Westermann
- Die im Modul Lehrenden

Authorized examiners
- Susanne Boll-Westermann
- Die im Modul Lehrenden

Entry requirements

Skills to be acquired in this module
Professional competence
The students:
- Name the human-computer interaction core principles
- Characterise the basic elements of the human-centered design of interactive systems

Methodological competence
The students:
- Comprehend context of use and user requirements of human-machine interfaces
- Design, develop and evaluate human-machine interfaces
- Conduct experiments with their prototypes

Social competence
The students:
- Implement human-computer interfaces in practical hands-on projects in teams
- Evaluate human-machine interfaces with potential users
- Develop and present solutions for Human-Computer Interaction related problems
- Integrate technical and factual comments into own results

Module contents
The module introduces the field of human-computer interfaces and their historical context. Moreover, it shows motivating examples of human-computer interaction. The module covers the core principles of human-computer interaction. In detail, the module deals with the design concepts of interactive systems: context of use, requirements and task analysis, human perception capabilities, design process, usability, prototyping and evaluation. During the practical project a concrete human-computer interface will be designed, developed and evaluated according to this concepts.

Reader's advisory
- Markus Dahm, Grundlagen der Mensch Computer-Interaktion. Pearson, 2006
- Literature in the reserve shelf in the university bibliography. Link list in Stud.IP.

Links
medien.informatik.uni-oldenburg.de/lehre

Languages of instruction
German, English

Duration (semesters)
1 Semester

Module frequency
once a year

Module capacity
unlimited

Modullevel
AS (Akzentsetzung / Accentuation)

Modulart
Pflicht o. Wahlpflicht / compulsory or optional
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<th>Lern-/Lehrform / Type of program</th>
<th>V+P</th>
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<tr>
<td>Vorkenntnisse / Previous knowledge</td>
<td>Grundkenntnisse Programmierung</td>
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<th>Time of examination</th>
<th>Type of examination</th>
</tr>
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<tr>
<td>Final exam of module</td>
<td>The completed practical projects will be presented on a single project day, which will take place at the end of the lecture period. The oral exam takes place within the last two weeks of the lecture period. If necessary, re-examinations will take place at the end of the term. Find out more about the schedule on the websites of the department and in Stud.IP.</td>
<td>Practical group project which progress has to be presented regularly during the tutorials. Oral exam on the topics of the lecture. Practical project and oral exam count 50% each to the final grade. Both practical project and oral exam have to be passed individually.</td>
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| Total time of attendance for the module | 56 h |
inf108 - Requirements Engineering and Management

Module label | Requirements Engineering and Management
Module code | inf108
Credit points | 6.0 KP
Workload | 180 h

Used in course of study
- Master's Programme Business Informatics (Master) > Akzentsetzungsmodul der Informatik
- Master's Programme Computing Science (Master) > Praktische Informatik

Contact person
Module responsibility
- Andreas Winter
- Die im Modul Lehrenden
Authorized examiners
- Andreas Winter
- Die im Modul Lehrenden

Entry requirements
Skills to be acquired in this module
The objective of the module "Requirements Engineering and Management" is to convey the core concepts and technology of the requirements engineering and of the requirements management. In the second half of the semester these methods and techniques will be carried out practically to develop an exemplary requirements definition.

Professional competence
The students:
- integrate the process of requirements engineering in the software engineering process
- name the methods and tools of requirements engineering and management
- select methods and tools from requirements engineering and management to solve given problems appropriately
- illustrate the key tasks of the requirements engineering and management
- name the essential concepts to develop and to structure ideas
- discuss the methods of determination requirements and develop validation concepts
- differentiate the software development core activities in greater detail

Methodological competence
The students:
- apply the methods of determination, documentation, validation and confirmation of requirements and
- create a comprehensive requirement document in group work

Social competence
The students:
- communicate with all stakeholders dealing with software development
- design project visions in groups
- collect requirements in interviews
- design requirements for software systems collaboratively

Self-competence
The students:
- reflect their problem-solving behaviour by applying requirements engineering and management capabilities

Module contents
The module deals with requirements analysis core concepts as well as methods and techniques of requirements engineering and management. Topics of this module are:
- the necessity of requirements engineering and management
- the requirements engineering process in the software development process
- requirements engineering process (participants, documents, activities)
- understanding the application domains (vision development, system environment documentation, domain model development, use case identification)
- requirements collection (functional and non-functional requirements, requirements collection, requirements documentation, requirements validation, requirements needs)
- requirements management

Reader's advisory
- Chris Rupp: Requirements-Engineering und -Management: Professionelle, iterative
Links

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**Lern-/Lehrform / Type of program**

**Vorkenntnisse / Previous knowledge**

| Kenntnisse aus Softwaretechnik I und Softwaretechnik II |

**Examination**

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**Course type**

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**Frequency**

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**Workload attendance**

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**Total time of attendance for the module**

56 h
inf109 - Information Systems III

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| Used in course of study | Master's Programme Business Informatics (Master) > Akzentsetzungsmodule der Informatik  
|              | Master's Programme Computing Science (Master) > Praktische Informatik |
| Contact person | Module responsibility  |
|               | Marco Grawunder         |
|               | Die im Modul Lehrenden  |
| Authorized examiners | Marco Grawunder |
|               | Die im Modul Lehrenden  |
| Skills to be acquired in this module | Professional competence |
| The students: | describe concepts, languages and architectures of database systems |
|              | discuss state-of-the-art database research topics |
|              | analyse information processing tasks and implement solutions appropriately |
| Methodological competence | The students: |
|              | propose concrete processing requirements for special application classes |
|              | assess the consequences of techniques and approaches |
|              | perform supervised research in the field of information systems |
|              | analyse and reflect complex information system requirements |
|              | realize information demands and accordingly gather aim-oriented information |
| Module contents | This module is a continuation of the content of information systems I and of information systems II. It deepens and extends the contents of the preceding modules and focuses mainly on current research questions. A special focus lies on concept of distributed data management. |
| Reader's advisory | Özsu, M. Tamer; Valduriez, Patrick. Principles of distributed database systems  
|                  | Rahm/Saake/Sattler: Verteiltes und Paralleles Datenmanagement, Springer |
|                  | Paper from SIGMOD, VLDB or ICDE |
| Links | http://www.is.informatik.uni-oldenburg.de/lehre/lehre.html |
| Language of instruction | German |
| Duration (semesters) | 1 Semester |
| Module frequency | jährlich |
| Module capacity | unlimited |
| Modullevel | AS (Akzentsetzung / Accentuation) |
| Modulart | je nach Studiengang Pflicht oder Wahlpflicht |
| Lern-/Lehrform / Type of program | |
| Vorkenntnisse / Previous knowledge | - Informationssysteme I  
|                                   | - Informationssysteme II  
<p>|                                   | - JAVA |
| Examination | Time of examination | Type of examination |
| Final exam of module | At the end of the lecture period | Written exam, oral exam or term paper |
| Course type | Comment | SWS | Frequency | Workload attendance |
| Lecture | 2.00 | WiSe | 28 h |
| Exercises | 2.00 | WiSe | 28 h |</p>
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<td></td>
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inf111 - Advanced Database Practical

**Module label**
Advanced Database Practical

**Module code**
inf111

**Credit points**
6.0 KP

**Workload**
180 h

**Used in course of study**
- Master's Programme Business Informatics (Master) > Akzentsetzungsmodule der Informatik
- Master’s Programme Computing Science (Master) > Praktische Informatik

**Contact person**

Module responsibility
- Marco Grawunder
- Die im Modul Lehrenden

Authorized examiners
- Marco Grawunder
- Die im Modul Lehrenden

**Entry requirements**
- Informationssysteme I

**Skills to be acquired in this module**

### Objective of the module/skills:
The module enhances the previous knowledge of databases and information systems. In the context of a professional database system the students realize, implement, install and optimize the system. Theoretical and mathematical approaches are additional contents. Additionally the course provides the capability both to describe the differences between NoSQL Databases and (Object-)Relational Databases and how to use them.

#### Professional competence
The students:

- name realisation techniques, implementations und programming of database systems
- program and implement database oriented system routines
- administer a professional database system
- identify database system performance problems and solve them appropriately

#### Methodological competence*
The students:

- make optimisation decisions during the modelling phase
- construct optimisation strategies mathematically

#### Social competence
The students:

- develop appropriate implementations for given problems in a team

#### Self-competence
The students:

- acknowledge the limits of their ability to cope with pressure during the implementation of database specific solutions

**Module contents**

### Content of the Module:
The module is a practical course. It is a continuation of the modules Information Systems I and Information Systems II. This module especially deals with the technical and theoretical concepts of database systems. Practical database implementation approaches and optimisation concepts are additional content of the module.

In detail the module provides: low-level database management programming, aspects of catalogue systems implementation, optimisation strategies based on different parallelisation and partitioning strategies, query concepts and modification.

**Reader's advisory**

### Suggested reading:
- Held Andrea (2007), Oracle 10g Addison-Wesley.
- Oracle 10g, Das Programmierhandbuch, Galileo Computing
- Oracle Database 11g, DBA-Handbuch, Oracle Press-Hanser Verlag
- NoSQL (2011) Hanser Verlag

<table>
<thead>
<tr>
<th>Links</th>
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<tbody>
<tr>
<td>Language of instruction</td>
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<tr>
<td>Duration (semesters)</td>
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<tr>
<td>Module frequency</td>
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<td>Module capacity</td>
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<td>Modullevel</td>
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<td>Lern-/Lehrform / Type of program</td>
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<tr>
<td>Vorkenntnisse / Previous knowledge</td>
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<tr>
<td>Examination</td>
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<td>Final exam of module</td>
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<tr>
<td>Course type</td>
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<td>SWS</td>
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<tr>
<td>Frequency</td>
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<td>Workload attendance</td>
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## inf112 - Modern Programming Technologies Practical

<table>
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<tr>
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<tr>
<td>Module code</td>
<td>inf112</td>
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<td>6.0 KP</td>
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<td>Workload</td>
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| Used in course of study             | • Master's Programme Business Informatics (Master) > Akzentsetzungsmodule der Informatik  
<pre><code>                             | • Master's Programme Computing Science (Master) &gt; Praktische Informatik |
</code></pre>
<p>| Contact person                      | Module responsibility                                      |
|                                     | - Dietrich Boles                                              |
|                                     | - Die im Modul Lehrenden                                     |
|                                     | Authorized examiners                                         |
|                                     | - Dietrich Boles                                              |
|                                     | - Die im Modul Lehrenden                                     |
| Entry requirements                  |                                                              |
| Skills to be acquired in this module| The objective of the practical course is to provide the students with state-of-the-art programming techniques. After the course, the students are able to use these techniques during the implementation and development of applications. |
|                                      | <strong>Professional competence</strong>                                   |
|                                      | The students:                                                 |
|                                      | - Name state-of-the-art programming techniques               |
|                                      | <strong>Methodological competence</strong>                                 |
|                                      | The students:                                                 |
|                                      | - Search for solutions on the internet                       |
|                                      | <strong>Social competence</strong>                                         |
|                                      | The students:                                                 |
|                                      | - Discuss own and someone else's solutions                    |
|                                      | <strong>Self-competence</strong>                                           |
|                                      | The students:                                                 |
|                                      | - Reflect their problem-solving behaviour and take up new solutions, e.g. from the internet |
| Module contents                     | The practical course enhances the students' programming skills. It focuses on state-of-the-art programming techniques. Among others, these are .NET-Framework, OSGi, Java EE, Java ME, iOS Application development, Android Application development or Social Network API. |
| Reader's advisory                   | Online-Documentation of the technologies and systems          |
| Links                                | <a href="http://www-is.informatik.uni-oldenburg.de/~dibo/teaching/programmierpraktikum/">http://www-is.informatik.uni-oldenburg.de/~dibo/teaching/programmierpraktikum/</a> |
| Language of instruction             | German                                                       |
| Duration (semesters)                | 1 Semester                                                   |
| Module frequency                    | jährlich                                                      |
| Module capacity                     | unlimited                                                    |
| Modullevel                          | AS (Akzentsetzung / Accentuation)                            |
| Modulart                            | je nach Studiengang Pflicht oder Wahlpflicht                  |
| Lern-/Lehrform / Type of program    |                                                              |
| Vorkenntnisse / Previous knowledge  | - gute Programmierkenntnisse                                 |
| Examination                         | Time of examination                                          |
| Final exam of module                | At the end of the lecture period                             |
| Course type                         | Practical                                                    |</p>
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<td>Frequency</td>
<td>WiSe</td>
</tr>
<tr>
<td>Workload attendance</td>
<td>56 h</td>
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</table>
The aim of the module "Operating Systems 2" is to convey further knowledge and skills regarding the conception, implementation, and evaluation of operating systems.

**Professional competence:**

*The Students:*

- assess in detail what an operating system is able to do
- recognize the problems in the implementation of operating systems
- identify and evaluate implementations of further subproblems and apply them

**Methodological competence:**

*The Students:*

- transfer implementation concepts to other contexts
- critically question different solutions with regard to their properties

**Social competence:**

*The Students:*

- solve problems partly in small groups
- present own potential solutions to the exercise group
- discuss their different potential solutions within the exercise group

**Self-competence:**

*The Students:*

- accept criticism
- reflect their own potential solutions taking into account the methods taught

The module conveys the following contents:

1) additional aspects of file systems
2) Input/output control
3) User representation
4) Advanced synchronization concepts
5) User interfaces
6) Job scheduling
7) Architectures of operating systems
8) Examples of operating systems

**Reader’s advisory**


**Links**

**Language of instruction**

German

**Duration (semesters)**

1 Semester
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<td>WiSe</td>
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<td>WiSe</td>
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<tr>
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## Module Contents

HCI is a fast-growing field, where scientific research in this area crosses multiple disciplines. The body of theoretical and empirical knowledge that can inform the design of effective systems is rapidly developing, which underscores the importance of current research in the field.
This course aims to provide a sample of some of the most recent and significant advances in this exciting area. Topics may include: situational awareness, designing for attention, ambient/peripheral interaction, computer support cooperative work and social computing (CSCW), ubiquitous and context-aware computing, haptic and gestural interaction, audio interaction, gaze-based interaction, biometric interfaces, and embedded, physical and tangible computing, mobile and wearable interfaces.

Structure of the Module:

The course will consist of lectures and lab sessions. Lab sessions will cover assignments (writing paper reviews, presentations, and peer assessment). In addition to assignments and a final exam, a small part of the course includes a mini group-based HCI project.

Lectures: 2 hours per week
Lab: 2 hours per week

This lecture will be held in English. All assignment submissions and exams will be in English.

The primary audience for this class are Master students of Computer Science following the Human Computer Interaction track.

Reader's advisory

Suggested reading:


Links

Language of instruction English
Duration (semesters) 1 Semester
Module frequency semi-annual
Module capacity 24
Modullevel AS (Akzentsetzung / Accentuation)
Modulart Pflicht o. Wahlpflicht / compulsory or optional
Lern-/Lehrform / Type of program V+P
Vorkenntnisse / Previous knowledge Interaktive Systeme
Examination Time of examination Type of examination
Final exam of module At the end of the lecture period Project and oral exams

Missing the exam
If you cannot attend the exam with valid reasons (medical reason, exam schedule conflicts), you need to inform us before the exam, and submit a scanned copy of the evidence (medical certificate, course registration, boarding passes) within 5 days after the exam.
- If the reason for missing the exam is valid, you will do your first try of the exam for the parts that you missed on the same date as the second chance exam.
- If the reason is not valid, you will not get any score from that exam. If your overall score passed the course, you will not have a chance to take the exam again.

Grading:
Your grade will be calculated as follows:

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<tr>
<th>Scored Items</th>
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<tr>
<td>Final</td>
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<tr>
<td>Assignments A01-03</td>
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<tr>
<td>Mini HCI research</td>
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Course type Comment SWS Frequency Workload attendance
Lecture 2.00 SuSe or WiSe 28 h
Practical 2.00 SuSe or WiSe 28 h
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<th>Frequency</th>
<th>Workload attendance</th>
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<td></td>
<td></td>
<td></td>
<td>56 h</td>
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</table>
inf501 - Environmental Information Systems

Module label
Environmental Information Systems

Module code
inf501

Credit points
6.0 KP

Workload
180 h

Used in course of study
- Master's Programme Business Informatics (Master) > Akzentsetzungsmodul der Informatik
- Master's Programme Computing Science (Master) > Angewandte Informatik
- Master's Programme Environmental Modelling (Master) > Mastermodule
- Master's Programme Sustainability Economics and Management (Master) > Additional Modules

Contact person
Module responsibility
- Ute Vogel-Sonnenschein
- Die im Modul Lehrenden

Authorized examiners
- Ute Vogel-Sonnenschein
- Die im Modul Lehrenden

Entry requirements
Skills to be acquired in this module
The module gives an overview of the phases and important aspects of the environmental information processing. **Professional competence** The students: - apply basic processing algorithms to classify and process data - compare, evaluate and design data structures to store spatial data efficiently - apply basic functions of a geo-information system - describe, evaluate and apply basic geostatistics processes - evaluate and apply multicriteria decision making processes **Methodological competence** The students: - use geoinformation systems for environmental application - use data mining tools for data analysis **Social competence** The students: - solve tasks in teams of 2-3 students - present and discuss their solutions in class **Self-competence** The students: - reflect their own behaviour with regard to the methods of environmental informatics

Module contents
Content of the Module: Environmental information systems make information about the general environmental state available for public management and public facilities, enterprises or interested citizens. The collection, storage and evaluation of this information is interesting for computer science. Within the scope of the lecture we will examine the processing of environmental information step-by-step, this means: - problems of data acquisition and data processing, - data structures and database concepts for an efficient access to (usually) spatial data, - introduction of data analysis (in particular from geostatistics and data mining), - introduction of multicriteria decision processes, as well as - the supply of data supported by meta data. The module "Umweltinformationssysteme" is accompanied by the module "Modellbildung in Simulation ökologischer Systeme". The subjects of "Modellbildung in Simulation ökologischer Systeme" represent the dynamic aspects of environmental systems (mainly of ecological systems). Nevertheless, the modules can be taken independently from each other.

Reader's advisory

Links
Language of instruction
German

Duration (semesters)
1 Semester

Module frequency
jährlich

Module capacity
unlimited

Reference text
Associated with the module: - inf500 Modellbildung und Sim. ökol. Systeme

Modullevel
BC (Basicscurriculum / Base curriculum)

Modullevel ---

Modular
- je nach Studiengang Pflicht oder Wahlpflicht

Modulart
- je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge
- Informationssysteme I
- Grundlagen der Statistik

Examination
Time of examination
- Second and third week after the end of the lecture period - retake before the upcoming lecture period
- Practical exercises and oral examination or portfolio

Course type
Lecture
3.00
SuSe
42 h
Exercises
1.00
SuSe
14 h

Workload attendance
56 h
inf502 - Simulation

Module label
Simulation

Module code
inf502

Credit points
6.0 KP

Workload
180 h

Used in course of study
- Master's Programme Business Informatics (Master) > Akzentsetzungsmodul der Informatik
- Master's Programme Computing Science (Master) > Angewandte Informatik
- Master's Programme Engineering of Socio-Technical Systems (Master) > Systems Engineering

Contact person
Module responsibility
- Axel Hahn
- Jürgen Sauer

Authorized examiners
- Axel Hahn
- Jürgen Sauer

Entry requirements
Skills to be acquired in this module
Simulation is a major tool for gaining knowledge about systems and their behavior. It can be used to gain system understanding and predict future system status. The module covers mathematical basic as well a basic simulation technology. The module completes itself by addressing application examples. By seminar and practical work, the students get hands on experience of simulation technologies.

Professional competence
The students:
- get an overview on methods, tools and application areas of simulation. They know what simulation can do and what are its limitation. Covered application are mainly in transportation and production domain.

Methodological competence
The students:
- know simulation technologies and model building basics. They understand the handling of time and problems of discretization. After lecture students can solve problems with simulation. This includes modelling, use of simulation environment and evaluation of results. Cause of practical use, the independent handling of research questions and the use of simulation as research method will be learned.

Social competence
The students:
- gain team and social skills by self-organized development of simulation.

Self-competence
The students:
- can apply simulation technologies on scientific research questions.

Module contents
In lectures the students get background information and simulation basics. Then they apply their knowledge by developing an own simulation by using state of the art simulation environments

Reader's advisory

Links
Languages of instruction
German, English

Duration (semesters)
1 Semester

Module frequency
annually
<table>
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<td><strong>Lern-/Lehrform / Type of program</strong></td>
<td>V+S+P</td>
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<th>Type of examination</th>
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<td>M (Seminar / Projektbericht)</td>
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<td>28 h</td>
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<tr>
<td>Practical</td>
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<td>1.00</td>
<td>SuSe</td>
<td>14 h</td>
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**Total time of attendance for the module**

56 h
inf510 - Energy Information Systems

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<td>Workload</td>
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<td>Master's Programme Computing Science (Master) &gt; Angewandte Informatik</td>
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<td>Master's Programme Engineering Physics (Master) &gt; Schwerpunkt: Renewable Energies</td>
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<td></td>
<td>Master's Programme Environmental Modelling (Master) &gt; Mastermodule</td>
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<tr>
<td>Contact person</td>
<td>Module responsibility</td>
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<tr>
<td></td>
<td>• Sebastian Lehnhoff</td>
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<td></td>
<td>• Die im Modul Lehrenden</td>
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<tr>
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<td>• Sebastian Lehnhoff</td>
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<td>• Die im Modul Lehrenden</td>
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<tr>
<td>Entry requirements</td>
<td>Skills to be acquired in this module</td>
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<tr>
<td></td>
<td>The students will learn different approaches to integrate distributed facilities, the regulatory framework, relevant standards and architecture concepts of energy management systems and will be able to apply this knowledge.</td>
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<tr>
<td></td>
<td>Professional competence</td>
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<td></td>
<td>The students:</td>
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<tr>
<td></td>
<td>• develop and evaluate IT-architectures for energy management systems</td>
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<td>• model objects of this domain appropriately</td>
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<td></td>
<td>• model energy information systems</td>
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<td></td>
<td>• realise and differentiate advanced tasks of decentralised energy management systems</td>
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<td></td>
<td>Methodological competence</td>
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<td></td>
<td>The students:</td>
</tr>
<tr>
<td></td>
<td>• identify problems of energy management, analyse these problems systematically and provide solutions</td>
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<td></td>
<td>• apply different simulation approaches of decentralised plants and consumers</td>
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<td></td>
<td>Social competence</td>
</tr>
<tr>
<td></td>
<td>The students:</td>
</tr>
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<td></td>
<td>• discuss solutions for energy management systems in the group</td>
</tr>
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<td>• develop use cases in teams</td>
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<td></td>
<td>• present self-developed solutions</td>
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<td>Self-competence</td>
</tr>
<tr>
<td></td>
<td>The students:</td>
</tr>
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<td></td>
<td>• reflect their actions with regard to structuring and decomposing systems</td>
</tr>
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<td></td>
<td>• reflect their own use of power as a limited resource</td>
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<tr>
<td>Module contents</td>
<td>This module provides the computer science basics for energy management. It provides the requirements of energy supply information systems with the focus on technical components and the requirements of decentralised and renewable energy plants.</td>
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<tr>
<td></td>
<td>These are:</td>
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<tr>
<td></td>
<td>• Architectures for energy information systems, e.g. SOA, Seamless Integration Architecture (IEC TC 57), OPC-UA</td>
</tr>
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<td></td>
<td>• Norms and standards of energy industry data models (CIM, 61850)</td>
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<td></td>
<td>• Systematisation of energy information system requirements based on ontologies</td>
</tr>
<tr>
<td></td>
<td>• Development, analysis and adaption of energy industry reference models and processes</td>
</tr>
<tr>
<td></td>
<td>• Methods and technologies to support energy industry processes</td>
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<td></td>
<td>• Methods and algorithms to support decision processes of the decentralised energy plants control</td>
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<td></td>
<td>• Smart Grid plant communication, particularly for load management</td>
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<tr>
<td></td>
<td>• Methods for modelling and simulation of power supply system dynamics</td>
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Reader's advisory

- Crastan V.: "Elektrische Energieversorgung II", Springer 2004

Links

<table>
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<td>Modulart</td>
<td>je nach Studiengang Pflicht oder Wahlpflicht</td>
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Lern- / Lehrform / Type of program

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<th>Frequency</th>
<th>Workload attendance</th>
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<tr>
<td>Seminar</td>
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<td>2.00</td>
<td>WiSe</td>
<td>28 h</td>
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Total time of attendance for the module 56 h
Inf511 - Smart Grid Management

Module label: Smart Grid Management
Module code: inf511
Credit points: 6.0 KP
Workload: 180 h

Used in course of study:
- Master's Programme Business Informatics (Master) > Akzentsetzungsmodule der Informatik
- Master's Programme Computing Science (Master) > Angewandte Informatik
- Master's Programme Engineering Physics (Master) > Schwerpunkt: Renewable Energies
- Master's Programme Environmental Modelling (Master) > Mastermodule
- Master's Programme Postgraduate Programme Renewable Energy (Master) > Mastermodule

Contact person:
Module responsibility:
- Sebastian Lehnhoff
- Die im Modul Lehrenden

Authorized examiners:
- Sebastian Lehnhoff
- Die im Modul Lehrenden

Entry requirements:
After successful completion of the course the students should be able to understand the existing structures and technical basis of energy systems to produce, transfer and distribute electricity and their interaction and dependency on each other. They should have developed an understanding for necessary IT- and process control technology components, methods and processes to control and operate electrical energy systems. The students are able to estimate and evaluate the requirements and challenges of ICT and computer science which are caused by the development and integration of unforeseeable fluctuations of decentralised plants. The students will be able to estimate the influence of distributed control concepts and algorithms for decentralised plants and consumers in the so called Smart Grid energy systems. Regarding the requirements the students will be able to analyse the safety, reliability, realtime capability and flexibility of Smart Grid energy systems.

Professional competence
The students:
- understand the existing structures and the technical basis of energy systems producing, transferring and distributing electricity and their interaction and dependency on each other. 
- develop an understanding for necessary IT- and process control technology components, methods and processes to control and operate electrical energy systems.
- estimate and evaluate the requirements and challenges of ICT and computer science which are caused by the development and integration of unforeseeable fluctuations of decentralised plants. 
- estimate the influence of distributed control concepts and algorithms for decentralised plants and consumers in the so called Smart Grid energy systems.

Methodological competence
The students:
- analyse the safety, reliability, realtime capability and flexibility of Smart Grid energy systems
- use advanced mathematical methods to calculate networks

Social competence
The students:
- create solutions in small teams
- discuss their solutions

Self-competence
The students:
- reflect their own use of electricity as a limited resource

Module contents:
Content of the Module: In this course information technology, economical energy industry and technical basic knowledge and methods are analysed by using concrete Smart Grid approaches. The basic calculation methods for an intelligent grid management are introduced.
This module deals with the technical and economical framework for a permissable electrical network as well as
mathematical modelling and calculation methods to analyse conditions of electrical energy networks (in stationary conditions).

These are:

- The organisation of the EU energy market (regulatory framework, responsibility in liberalisation of electrical energy systems)
- Establishment and operation of electrical energy supply networks (network topology, statutory duties of supply, supply quality/system services, malfunctions and protection systems)
- Intelligent network management (Smart Grids), aggregation forms, machine learning approaches

Reader's advisory

Suggested reading:

- Crastan V.: "Elektrische Energieversorgung II", Springer 2004

Links

Language of instruction | English
Duration (semesters) | 1 Semester
Module frequency | jährlich
Module capacity | unlimited
Module level | AS (Akzentsetzung / Accentuation)
Module type | je nach Studiengang Pflicht oder Wahlpflicht
Lern-/Lehrform / Type of program | V+Ü

Vorkenntnisse / Previous knowledge

Examination | Time of examination | Type of examination
Final exam of module | At the end of the semester | Oral exam

Course type | Comment | SWS | Frequency | Workload attendance
Lecture | | 3.00 | SuSe | 42 h
Exercises | | 1.00 | SuSe | 14 h

Total time of attendance for the module | 56 h
inf513 - Energy Informatics Practical

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<tr>
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<th>Energy Informatics Practical</th>
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<tbody>
<tr>
<td>Module code</td>
<td>inf513</td>
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<tr>
<td>Credit points</td>
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<td>Workload</td>
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**Used in course of study**
- Master's Programme Business Informatics (Master) > Akzentsetzungsmodule der Informatik
- Master's Programme Computing Science (Master) > Angewandte Informatik
- Master's Programme Embedded Systems and Microrobotics (Master) > Akzentsetzungsmodule

**Contact person**
- Module responsibility
  - Sebastian Lehnhoff
- Authorized examiners
  - Die im Modul Lehrenden

**Entry requirements**
- Programming with JAVA

**Skills to be acquired in this module**
Successfully completing this lecture will enable the students to mathematically model simple controllable electrical generators and consumers and to simulate them together with appropriate control algorithms within smart grid scenarios. To achieve this goal, students will start with deriving computational models from physical models and evaluate them. In order to manage the integration of control algorithms, students are taught the principles of cosimulation using the "mosaik" smart grid co-simulation framework as an example.

Students will be able to understand and apply distributed, agent-based control schemes to decentralized energy generators and/or consumers. As a result, students are able to analyze the requirements for successful application to real power balancing regarding capacity utilization, robustness, and flexibility. In addition, students learn the foundations of planning and conducting simulation based experiments as well as the interpretation of the results. Special attention will be paid on establishing a balance between the results' precision and robustness and the necessary effort (design of experiments) in order to gain as much insight into interdependencies with as few experiments as possible.

**Professional competence**
The students:
- derive and evaluate computational models from physical models
- use the "mosaik" smart grid co-simulation framework
- analyze the requirements for successful applications to real power balancing regarding capacity utilization, robustness, and flexibility
- name the foundations of planning and conducting simulation based experiments as well as the interpretation of the results
- are aware of the balance between the results' precision and robustness and the necessary effort (design of experiments) in order to gain as much insight into interdependencies with as few experiments.

**Methodological competence**
The students:
- model simple controllable electrical generators and consumers
- simulate simple controllable electrical generators and consumers with appropriate control algorithms within smart grid scenarios
- apply distributed agent-based control schemes to decentralized energy generators and/or consumers
- evaluate simulation results
- search information and look into methods to implement models
- propose hypotheses and check their validity with design of experiments methods

**Social competence**
The students:
- apply the pair programming development technique
- discuss design decisions
- identify work packages and are responsible for it

**Self-competence**
The students:
- reflect on their own use of power as a limited resource
- accept and use criticism to develop their own behaviour
Module contents

In this practical course students:

- model controllable, modulating electrical energy generators and consumers,
- put their hands on mosaik (installation, description and configuration of scenarios, conduction of simulations),
- learn the principles of agent-based heuristics for optimization problems in future smart grid scenarios,
- learn about the challenges of implementing agent-based mechanisms (multi-criticality, convergency, quality) on the training,
- learn the foundations for choice and design of simulation based experiments.

Reader's advisory

Suggested reading:

**Smart Grids:**


**Multiagentensysteme:**


**Co-Simulation**


**Versuchsplanung:**

- Klein, B.: "Versuchsplanung - DoE", Oldenbourg, 2011

Links

http://mosaik.offis.de

Language of instruction

German

Duration (semesters)

1 Semester

Module frequency

jährlich

Module capacity

unlimited

Reference text

Elective module in the master specialization area (energy computer science).

Associated with the modules:

- Energieinformationssysteme
- Smart Grid Management

Module level

AS (Akzentsetzung / Accentuation)

Modulart

je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge

- Programmierung mit Java
- Programmierung mit Python

Examination

Time of examination

Type of examination

Final exam of module

At the end of the semester

Oral exam

Course type

Practical

SWS

4.00

Frequency

SuSe
| Workload attendance | 56 h |
inf520 - Management of Information Systems in Health Care

Module label: Management of Information Systems in Health Care
Module code: inf520
Credit points: 6.0 KP
Workload: 180 h

Used in course of study:
- Master's Programme Business Informatics (Master) > Akzentsetzungsmodule der Informatik
- Master's Programme Computing Science (Master) > Angewandte Informatik

Contact person:
Module responsibility:
- Rainer Röhrig
- Die im Modul Lehrenden

Authorized examiners:
- Rainer Röhrig
- Die im Modul Lehrenden

Entry requirements:
Skills to be acquired in this module:

Professional competence:
The students:
- know healthcare information systems and their functions
- know clinical software architectures and apply their IT strategies
- know and apply system integration standards, methods (including medical technology) and risk management
- know and apply clinical information systems and maintain them
- know the legal and regulatory framework (including data privacy) for the operation of healthcare IT systems
- implement simple data analyses on care data
- know and apply procurement processes and changes

Methodological competence:
The students:

Social competence:
The students:
- reflect on and become more familiar with the different hospital roles (IT-manager, IT-employer, hospital supervisors, clinician, manager) and their interests

Self-competence:
The students:
- reflect their solutions by using methods learned in this course and present them appropriately

Module contents:
- Basics of the healthcare system
- Basics of the medical documentation
- Healthcare information systems / clinical information systems / intensive care information systems (PDMS)
- PDMS parameters, including interface terminology and semantic standards
- Data privacy and security
- System integration and interoperability (HL7, …)
- Hospital financing / DRG-System: regulatory framework and implementation
- Care data analyses
- Requirements engineering
- Procurement project and risk management

Reader's advisory:
Wird im Modul bekannt gegeben

Links:
Language of instruction: German
Duration (semesters): 1 Semester
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**Lern-/Lehrform / Type of program**

Vorkenntnisse / Previous knowledge:
- Medizin für Informatiker
- Informationssysteme / Datenbanken

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**Total time of attendance for the module**

56 h
inf533 - Probabilistic Modelling I

Module label
Probabilistic Modelling I

Module code
inf533

Credit points
3.0 KP

Workload
90 h

Used in course of study
- Master's Programme Business Informatics (Master) > Akzentsetzungsmodule der Informatik
- Master's Programme Computing Science (Master) > Angewandte Informatik
- Master's Programme Embedded Systems and Microrobotics (Master) > Akzentsetzungsmodule
- Master's Programme Engineering of Socio-Technical Systems (Master) > Embedded Brain Computer Interaction
- Master's Programme Engineering of Socio-Technical Systems (Master) > Systems Engineering

Contact person
Module responsibility
- Claus Möbus
- Die im Modul Lehrenden

Authorized examiners
- Claus Möbus
- Die im Modul Lehrenden

Entry requirements
Skills to be acquired in this module
- Probabilistic Bayesian models are generated with special tools (e.g. BUGS, JAGS, STAN) or domain specific programming languages (WebPPL, PyMC3, etc.). If they mimic cognitive processes of humans (e.g. pilots, drivers) or animals they could be used as cooperative assistance systems in technical or financial systems like cars, robots, or recommenders.

Professional competence
- The students: learn to map problem to model classes to come up with practical solutions

Methodological competence
- The students: acquire basic skills in the design, implementation, and identification of probabilistic models with Bayesian methods
- acquire knowledge about alternative non-Bayesian machine learning methods

Social competence
- The students: learn to present and discuss probabilistic theories, methods, and models.

Self-competence
- The students: reflect and evaluate chances and limitations of probabilistic approaches
- learn to deliberate on machine-learning alternatives

Module contents
Theories, methods, and examples of Bayesian models with practical applications

Reader's advisory
Recent eBooks, eTutorials

Links
http://www.uni-oldenburg.de/en/computingscience/lcs/probabilistic-programming/

Languages of instruction
German, English

Duration (semesters)
1 Semester

Module frequency
jährlich

Module capacity
unlimited

Reference text
Associated with the module:
- inf534 Probabilistic Modelling II
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inf534 - Probabilistic Modelling II

Module label
Probabilistic Modelling II

Module code
inf534

Credit points
3.0 KP

Workload
90 h

Used in course of study
- Master's Programme Business Informatics (Master) > Akzentsetzungsmodule der Informatik
- Master's Programme Computing Science (Master) > Angewandte Informatik
- Master's Programme Embedded Systems and MicroRobotics (Master) > Akzentsetzungsmodule
- Master's Programme Engineering of Socio-Technical Systems (Master) > Embedded Brain Computer Interaction

Contact person
Module responsibility
- Claus Möbus
- Die im Modul Lehrenden

Authorized examiners
- Claus Möbus
- Die im Modul Lehrenden

Entry requirements

Skills to be acquired in this module
Probabilistic models are generated with special tools (e.g. BUGS, JAGS, STAN) or domain specific programming languages (WebPPL, PyMC3, etc.). If they mimic cognitive processes of humans (e.g. pilots, drivers) or animals they could be used as cooperative assistance systems in technical or financial systems like cars, robots, or recommenders. In this part of the seminar we read, present, and discuss recent research papers.

Professional competence:
The students:
- learn to connect problem- with model classes to come up with practical solutions

Methodological competence
The students:
- acquire advanced skills in the design, implementation, and identification of probabilistic models with Bayesian methods
- acquire knowledge about alternative machine learning methods

Social competence
The students:
- learn to present and discuss probabilistic theories, methods, and models

Self-competence
The students:
- reflect and evaluate chances and limitations of probabilistic approaches
- learn to deliberate on machine-learning alternatives

Module contents
Theories, methods, and examples of Bayesian models with practical applications

Reader's advisory
Recent publications

Links
http://www.uni-oldenburg.de/en/computingscience/lcs/probabilistic-programming/

Language of instruction
German

Duration (semesters)
1 Semester

Module frequency
halbjährlich

Module capacity
unlimited

Reference text
Associated with the module:
- inf533 Probabilistische Modellierung I
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inf535 - Computational Intelligence I

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<td>Module code</td>
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<td>Workload</td>
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**Used in course of study**
- Master's Programme Business Informatics (Master) > Akzentsetzungsmodule der Informatik
- Master's Programme Computing Science (Master) > Angewandte Informatik
- Master's Programme Engineering of Socio-Technical Systems (Master) > Embedded Brain Computer Interaction
- Master's Programme Engineering of Socio-Technical Systems (Master) > Human-Computer Interaction
- Master's Programme Environmental Modelling (Master) > Mastermodule

**Contact person**
- Module responsibility
  - Oliver Kramer
- Authorized examiners
  - Oliver Kramer
  - Die im Modul Lehrenden

**Entry requirements**

**Skills to be acquired in this module**

**Professional competence:**
The students:
- recognise optimisation problems
- implement simple algorithms of heuristic optimisation
- critically discuss solutions and selection of methods
- deepen previous knowledge of analysis and linear algebra

**Methodological competence**
The students:
- deepen programming skills
- apply modelling skills
- learn about the relation between problem class and method selection

**Social competence**
The students:
- cooperatively implement content introduced in lecture
- evaluate own solutions and compare them with those of their peers

**Self-competence**
The students:
- evaluate own skills with reference to peers
- realize personal limitations
- adapt own problem solving approaches with reference to required method competences

**Module contents**
Computational Intelligence comprises intelligent and adaptive methods for optimisation and learning. The module "Computational Intelligence I" concentrates on methods for evolutionary optimisation and heuristic approaches. The exercises introduce and deepen practical aspects of the implementation and algorithmic design, also taking into account application aspects.

**Overview of Content:**
- foundations of optimisation
- genetic algorithms and evolution strategies
- parameter control and self-adaptation
- runtime analysis
- swarm algorithms
- constrained optimisation
- multi-objective optimisation
- meta-modeling
Reader's advisory


Links

Languages of instruction
- English, German

Duration (semesters)
- 1 Semester

Module frequency
- jährlich

Module capacity
- unlimited

Modullevel
- AS (Akzentsetzung / Accentuation)

Modulart
- je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge
- Grundlagen der Statistik

Examination
- Time of examination
- Type of examination

Final exam of module
- At the end of the lecture period
- Written or oral exam

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Total time of attendance for the module
- 56 h
### inf536 - Computational Intelligence II

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<td>Module code</td>
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<td>Workload</td>
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#### Used in course of study
- Master's Programme Business Informatics (Master) > Akzentsetzungsmodule der Informatik
- Master's Programme Computing Science (Master) > Angewandte Informatik
- Master's Programme Engineering of Socio-Technical Systems (Master) > Embedded Brain Computer Interaction
- Master's Programme Engineering of Socio-Technical Systems (Master) > Human-Computer Interaction
- Master's Programme Environmental Modelling (Master) > Mastermodule

#### Contact person
- Module responsibility
  - Oliver Kramer
- Authorized examiners
  - Die im Modul Lehrenden
  - Oliver Kramer

#### Entry requirements

<table>
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<tr>
<th>Skills to be acquired in this module</th>
<th>Professional competence</th>
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<tr>
<td></td>
<td>The students:</td>
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<td></td>
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<tr>
<td></td>
<td>- Recognise machine learning problems</td>
</tr>
<tr>
<td></td>
<td>- Implement simple algorithms of machine learning</td>
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<td></td>
<td>- Critically discuss solutions and selection of methods</td>
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<td></td>
<td>- Deepen previous knowledge of analysis and linear algebra</td>
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</table>

**Methodological competence**

The students:

- Deepen programming skills
- Apply modelling skills
- Learn about the relation between problem class and method selection

**Social competence**

The students:

- Cooperatively implement content introduced in lecture
- Evaluate own solutions and compare them with those of their peers

**Self-competence**

The students:

- Evaluate own skills w.r.t. peers
- Realise personal limitations
- Adapt own problem solving approaches w.r.t. required method competences

#### Module contents

Computational Intelligence comprises intelligent and adaptive methods for optimisation and learning. The module "Computational Intelligence II" concentrates on methods for machine learning and data mining. The exercises introduce and deepen practical aspects of the implementation and algorithmic design, also taking into account application aspects.

**Overview of Content:**

- Foundations of learning and classification
- Nearest neighbouring methods
- Model selection and parameter tuning
- Regression
- Support vector and kernel methods
- Clustering
- Dimensionality reduction
Reader's advisory

- HASTIE, T., TIBSHIRANI, R., FRIEDMAN, J.H.: The Elements of Statistical Learning, Springer 2009

<table>
<thead>
<tr>
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<tr>
<td>Languages of instruction</td>
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<td>Exercises</td>
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<td>2.00</td>
<td>SuSe</td>
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Total time of attendance for the module  
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### inf537 - Intelligent Systems

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<td>- Master's Programme Computing Science (Master) &gt; Angewandte Informatik</td>
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<td>- Master's Programme Engineering of Socio-Technical Systems (Master) &gt; Embedded Brain Computer Interaction</td>
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<td>- Master's Programme Engineering of Socio-Technical Systems (Master) &gt; Systems Engineering</td>
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<td>Module responsibility</td>
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<td></td>
<td>- Jürgen Sauer</td>
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<td></td>
<td>- Die im Modul Lehrenden</td>
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<td>- Jürgen Sauer</td>
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<tr>
<td>Entry requirements</td>
<td>Skills to be acquired in this module</td>
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<tr>
<td></td>
<td><strong>Professional competence</strong> The students: - name the structure of agent-based systems - use problem-solving methods for complex problems - characterise the application area of process planning - evaluate the suitability of processes regarding to specific problems <strong>Methodological competence</strong> The students: - assign problem-solving methods to different problems <strong>Social competence</strong> The students: - implement selected methods in small teams <strong>Self-competence</strong> The students: - develop own solutions for given problems</td>
</tr>
<tr>
<td>Module contents</td>
<td>A lot of application areas use &quot;intelligent&quot; problem-solving methods. These are the main focus of this lecture. They will be illustrated by examples in order to enhance the students' problem-solving abilities. These include: - A brief introduction into AI - Agent systems and - Solution methods of AI like heuristics, meta-heuristics, soft computing methods. To apply and foster the contents of the lecture, an intelligent planning system is implemented in practical exercises.</td>
</tr>
<tr>
<td>Links</td>
<td><a href="http://www.wi-ol.de">www.wi-ol.de</a></td>
</tr>
<tr>
<td>Languages of instruction</td>
<td>German, English</td>
</tr>
<tr>
<td>Duration (semesters)</td>
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<tr>
<td>Module frequency</td>
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<td>Module capacity</td>
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<td>Examination</td>
<td>Time of examination</td>
</tr>
<tr>
<td>Final exam of module</td>
<td>At the end of the lecture period</td>
</tr>
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<td>Comment</td>
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<td>Lecture</td>
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<td>Total time of attendance for the module</td>
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</table>
**inf538 - Management of IT-Services**

**Module label** Management of IT-Services

**Module code** inf538

**Credit points** 6.0 KP

**Workload** 180 h

**Used in course of study**
- Master's Programme Business Informatics (Master) > Akzentsetzungsmodule der Informatik
- Master's Programme Computing Science (Master) > Angewandte Informatik

**Contact person**

- Module responsibility
  - Jorge Marx Gomez
  - Jürgen Sauer
  - Die im Modul Lehrenden

- Authorized examiners
  - Jorge Marx Gomez
  - Jürgen Sauer
  - Die im Modul Lehrenden

**Entry requirements**

- Professional competence** The students: - characterise problems that occur during the operation of large-scale operating systems - characterise conceptional, technical, economical and organizational problem-solving processes - use these concepts to solve problems validly **Methodological competence** The students: - describe a current problem area based on information from the internet and literature **Social competence** The students: - present their findings on a problem area - discuss their results regarding a specific application area **Self-competence** The students: - reflect actual concepts with regard to specific application areas

**Module contents**

- Content of the Module:** "Adaptive Computing" deals with the field of concepts and solutions to manage large scale application systems or dynamic data centers. Technically oriented solutions like the configuration of data centers such as the hard- and software virtualization, the high availability, the storage management and the identity management are not the only contributions of Adaptive Computing. Others are organisational aspects of companies, such as personnel planning and service agreements. This module provides and compiles current topics of Adaptive Computing. The module also presents and evaluates several Adaptive Computing concepts. Current HW-/ SW-concepts of large-scale application systems, strategies, service management and security concepts are specifically included. The lecture introduces current concepts and solutions for the management of dynamic data centers. Among others, the following subjects are provided: - IT-Strategy, -Organisation - ITIL (overview) - Service-Management Tools (e.g. OTRS) - Outsourcing - Security (policies, privacy, data security, safety) - Spatial design of data centers - HW-Strategies: Cluster, Storage, ... - Virtualization - IdM - Portals - Configuration management - Accounting, performance calculation and evaluation, performance indicators - SOA, EAI - Controlling tools, Monitoring - Solutions: SAP Adaptive Computing

**Reader’s advisory**


**Links**

**Language of instruction** German

**Duration (semesters)** 1 Semester

**Module frequency** jährlich

**Module capacity** unlimited

**Modullevel** AS (Akzentsetzung / Accentuation)

**Modulart** je nach Studiengang Pflicht oder Wahlpflicht

**Lern-/Lehrform / Type of program**

**Vorkenntnisse / Previous knowledge**

**Examination** Time of examination Type of examination

**Final exam of module** at the end of the semester Portfolio

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**Total time of attendance for the module** 56 h
### inf551 - Maritime Systems

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<td>- Master's Programme Computing Science (Master) &gt; Angewandte Informatik</td>
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<tr>
<td>- Master's Programme Engineering of Socio-Technical Systems (Master) &gt; Embedded Brain Computer Interaction</td>
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<td>- Master's Programme Engineering of Socio-Technical Systems (Master) &gt; Human-Computer Interaction</td>
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<td>- Master's Programme Engineering of Socio-Technical Systems (Master) &gt; Systems Engineering</td>
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#### Contact person

- Module responsibility:
  - Axel Hahn
  - Die im Modul Lehrenden

- Authorized examiners:
  - Axel Hahn
  - Die im Modul Lehrenden

#### Entry requirements

**Skills to be acquired in this module**

- The module deals with the economic aspects and synergy effects of maritime sub-areas. In addition to the basic knowledge of the maritime sub-areas, current approaches from research are taught. The basic ship parameters are examined with regard to their economic efficiency, stability calculations and ship dynamics are derived and effects of the ship hull, propellers and systems on the economic efficiency of a ship are considered. The focus here is on understanding economic thinking and the interaction of the sub-areas. Furthermore, future-oriented solutions and trends will be discussed. **Professional competence** The students - name the basics of planning and control of operational logistics in a shipyard - name the basics of planning of economic design - recognise the application possibilities of simulation in design, construction and dynamics - identify the basic maritime sub-areas and their synergies **Methodological competence** The students - Link relations with tree structures - Illustrate the questions and concepts of the design process **Social competence** The students - Present computational problem solving to groups - Discuss their outcomes appropriately - Implement solutions of given problems in teams - Accept criticism of their peer group as valuable contributions **Self-competence** The students - reflect their self-image and their actions of their results

#### Module contents


#### Reader's advisory


#### Languages of instruction

- German, English

#### Duration (semesters)

- 1 Semester

#### Module frequency

- annually in winterterm

#### Module capacity

- unlimited

#### Modullevel

- AS (Akzentsetzung / Accentuation)

#### Modulart

- Wahlmodul / Opportunity

#### Lern-/Lehrform / Type of program

- V+Ü

#### Vorkenntnisse / Previous knowledge

- Transportsysteme, Analysis, Differentialgleichungen, lineare Algebra, Mechanik

#### Examination

- Time of examination: at the end of the lecture period
- Type of examination: practical exercises and oral examination

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<th>Frequency</th>
<th>Workload attendance</th>
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</table>
**Module contents**

Data warehouse technology together with business intelligence are increasingly being used by business in order to get better decision support and enrich ongoing processes with data-rich decisions. Data warehouse technology enables an integration of data from heterogeneous sources, whether business intelligence builds data processing on top of it. For instance, business intelligence allows to build reporting on very large volumes of data (including historical) coming primarily from data warehouse.

As part of the current module following contents are taught:

- Definition and scope of business intelligence.
- Procedures and objectives of data warehousing.
- Process of extracting, transforming and loading (ETL) of data.
Phases of data modelling, data capturing and reporting in conjunction with a plausible case studies/scenarios.
Prospects for further and evolving topics for business intelligence (e.g. Adaptive Business Intelligence, In-Memory Computing, etc.)
Introduction to Data Mining.
Case studies based practical exercises and assessments in order to impart practical knowledge.

Reader's advisory

- Marx Gómez, Rautenstrauch, Cissek (2008): Einführung in die Business Intelligence mit SAP NetWeaver 7.0.

Links
http://www.wi-ol.de

Languages of instruction
German, English

Duration (semesters)
1 Semester

Module frequency
jährlich

Module capacity
unlimited

Modullevel
AS (Akzentsetzung / Accentuation)

Modulart
Wahlpflicht / Elective

Lern-/Lehrform / Type of program
V + Ü

Vorkenntnisse / Previous knowledge

Examination
Time of examination
Type of examination
Final exam of module
At the end of the lecture period
Written exam max. 120 minutes

Course type
Comment
SWS
Frequency
Workload attendance

Lecture
2.00
WiSe
28 h

Exercises
2.00
WiSe
28 h

Total time of attendance for the module
56 h
inf607 - Business Intelligence II

Module label: Business Intelligence II
Module code: inf607
Credit points: 6.0 KP
Workload: 180 h

Used in course of study:
- Master's Programme Business Informatics (Master) > Akzentsetzungsmodule der Informatik
- Master's Programme Computing Science (Master) > Angewandte Informatik

Contact person:
Module responsibility:
- Jorge Marx Gomez
- Die im Modul Lehrenden

Authorized examiners:
- Jorge Marx Gomez
- Die im Modul Lehrenden

Entry requirements:

Skills to be acquired in this module:
Current module provides advanced business intelligence, data science with focus on enterprises and strong emphasis on big data and data analytics. Students of the course are provided with knowledge, which reflects current research and development in a data analytics domain.

Professional competence:
The students:
- name and recognize the role of data analytics / data science as part of a daily business process in a particular company
- able to organize from management perspective data analysis project
- being able to analyze advantages and disadvantages of different approaches and methods of the data analytics and being able to apply them in simple case studies
- obtain theoretical knowledge about data collection and modeling processes, including state of the art approaches and available best practices

Methodological competence:
The students:
- being able to execute typical tasks of data analysis, and also being able to proceed deeper with respect to different approaches and methods
- gain a hands on experience and being able to understand advantages and disadvantages of different methods and being able to use obtained knowledge

Social competence:
The students:
- build solutions based on case studies given to the group, for example design of regression model based on provided dataset
- discuss solutions on a technical level
- present obtained case studies solutions as part of the exercises

Self-competence:
The students:
- critically review provided offered information

Module contents:
After current course students will get advanced knowledge in the domains such as business intelligence and data analytics. Besides that, students will have a chance to have a deeper look into related technical fields such as InMemory Computing, Data Mining and Machine Learning, Big Data Processing with Distributed Systems (e.g. Apache Hadoop / Spark) from both, research and practical, perspectives. Students will be provided with real-world experience gained from business intelligence and data science related projects. Materials of the course are believed to be justified with current demands of data analytics market. Thus, providing students with relevant knowledge in order to give them advantages in future job.

Reader's advisory:
- Jürgen Cleve, Uwe Lämmel (2014): "Data mining" (Deutsch)
- Max Bramer (2013): "Principles of data mining" (English)
- Ian Witten, Eibe Frank, Mark Hall (2011): "Data mining: practical machine learning tools and techniques" (English)
Links | http://www.wi-ol.de/
---|---
Languages of instruction | German, English
Duration (semesters) | 1 Semester
Module frequency | jährlich
Module capacity | unlimited
Modulelevel | AS (Akzentsetzung / Accentuation)
Lern-Lehrform / Type of program | SE nach Ankündigung zu Beginn der Veranstaltung (2 SWS V + 2 SWS Ü oder Blockseminar)

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<td>At the end of the lecture period</td>
<td>Written exam (max. 120 min.)</td>
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<td>Lecture</td>
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<tr>
<td>Seminar</td>
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<td>SuSe</td>
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Total time of attendance for the module | 56 h
inf650 - Transport Systems

Module label: Transport Systems
Module code: inf650
Credit points: 6.0 KP
Workload: 180 h

Used in course of study:
- Master's Programme Business Informatics (Master) > Akzentsetzungsmodule der Informatik
- Master's Programme Computing Science (Master) > Angewandte Informatik
- Master's Programme Engineering of Socio-Technical Systems (Master) > Embedded Brain Computer Interaction
- Master's Programme Engineering of Socio-Technical Systems (Master) > Human-Computer Interaction
- Master's Programme Engineering of Socio-Technical Systems (Master) > Systems Engineering

Contact person:
Module responsibility:
- Axel Hahn
- Die im Modul Lehrenden

Authorized examiners:
- Axel Hahn
- Die im Modul Lehrenden

Entry requirements:

Skills to be acquired in this module:
Objective of the module/skills:
The Module Transport systems deals with planning and controlling systems of internal and external company logistics as well as public transport. It provides basic knowledge and recent research topics. The focus is on a resource orientated holistic view of company logistics as well as the planning of transport infrastructure. Furthermore, trends such as autonomous vehicles and intelligent transport systems are discussed.

Professional competence:
The students:
- name the basics of planning and controlling company logistics
- assess transport systems of companies
- name methods and approaches of computer aided transport systems and classify them
- characterise software to plan complex logistics

Methodological competence:
The students:
- display topics and concepts of transport systems
- simulate transport and its systems with appropriate methods

Social competence:
The students:
- work in groups
- discuss their results appropriately

Self-competence:
The students:
- realise their limits while working on a project containing aspects of modelling and implementation
- question the presentation of their results

Module contents:
- Transport and logistics concepts
- Data acquisition of company logistics
- Planning- and simulation software for complex logistics- and transport processes
- Energy- and resource efficient transport systems
- Resource oriented transport cost calculations (e.g. CO2, noise pollution)
- Planning models for transport infrastructure

Reader's advisory:
Suggested reading:
Links | http://wi-ol.de
---|---
Languages of Instruction | German, English
Duration (semesters) | 1 Semester
Module frequency | jährlich
Module capacity | unlimited
Reference text | Dieses Modul ist im Rahmen der Projekte FliF und FoL konzipiert worden
Modullevel | AS (Akzentsetzung / Accentuation)
Modulart | je nach Studiengang Pflicht oder Wahlpflicht
Lern-/Lehrform / Type of program | V+Ü
Vorkenntnisse / Previous knowledge | Produktionsorientierte Wirtschaftsinformatik

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<tbody>
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<td>Final exam of module</td>
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<td>Exercises and written exam</td>
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<td>2.00</td>
<td>SuSe</td>
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| Total time of attendance for the module | 56 h |

inf651 - Environmental Management Information Systems I

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<tbody>
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<td>6.0 KP</td>
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<td>Workload</td>
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**Used in course of study**
- Master's Programme Business Informatics (Master) > Akzentsetzungsmodule der Informatik
- Master's Programme Computing Science (Master) > Angewandte Informatik
- Master's Programme Environmental Modelling (Master) > Mastermodule
- Master's Programme Sustainability Economics and Management (Master) > Additional Modules

**Contact person**

Module responsibility
- Jorge Marx Gomez
- Die im Modul Lehrenden

Authorized examiners
- Jorge Marx Gomez
- Die im Modul Lehrenden

**Entry requirements**

**Skills to be acquired in this module**

This module completes the knowledge and abilities gained in the field of Environmental Informatics and it creates a strong reference to up to date topics in the field of sustainability. The content taught in this module can directly be applied in an upcoming study and professional career.

**Professional competence**

The students:

- are able to classify and explain the sustainability paradigm
- are aware of the current status of sustainability reporting
- are able to define and to model material flows
- have obtained know-how in the field of corporate environmental management information systems (CEMIS)

**Methodological competence**

The students:

- implement CEMIS
- apply different techniques and methods to case studies
- develop new case studies in teams

**Social competence**

The students:

- are supposed to work in teams and therefore have to identify working packages and have to take on responsibility for the jobs assigned to them
- present and discuss their own results with the team and the other members of the course

**Self-competence**

The students:

- learn about their own limitations and learn to accept criticism in order to strengthen their own abilities

**Module contents**

This course teaches methods, approaches and techniques in the field of information processing in order to support solutions to problems that arise from companies' impact on the environment. In particular, ICT supported approaches of production-integrated environmental protection, environmental controlling and reporting are introduced and discussed. In order to enable the integration of such approaches into environmental protection, environmental management and its systems are taught as well.

The content in detail:

- environmental management as a basis for sustainability
- sustainability and material flow management
- strategic environmental management
- eco-controlling life cycle
- characteristics and system architectures of CEMIS
- standard software systems
- environmental accounting systems

Reader's advisory


Links
http://www.wi-ol.de

Language of instruction
German

Duration (semesters)
1 Semester

Module frequency
jährlich

Module capacity
unlimited

Module level
AS (Akzentsetzung / Accentuation)

Modulart
je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program
V+Ü

Vorkenntnisse / Previous knowledge

Final exam of module
At the end of the lecture period
exercises and written exam (max. 120 min.)

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Total time of attendance for the module
56 h
**inf652 - Production-oriented Business Informatics**

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<td>Axel Hahn</td>
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<td>Axel Hahn</td>
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</table>

**Entry requirements**

**Skills to be acquired in this module**

The module deepens the contents of the modules „Wirtschaftsinformatik“ and „Wirtschaftsinformatik/Informationsmanagement“. The students will be able to contextualise IT systems and their functions in companies. They are able to participate in the implementation of IT systems in companies. The students know the essential tasks of materials management, production planning and controlling, warehousing, acquisition and supply chain management.

**Professional competence**

The students:

- name and differentiate the basics of business informatics and information management
- classify IT systems and their functions in companies
- name and characterise the essential tasks of materials management, production planning and controlling, warehousing, acquisition and supply chain management

**Methodological competence**

The students:

- transfer a holistic development process of production planning and control
- implement IT systems in businesses

**Social competence**

The students:

- participate in implementing IT systems in companies
- construct and present computational solutions to groups and within their work group
- integrate professional and objective criticism in their own and others’ results

**Self-competence**

The students:

- recognize the planning horizon for IT systems
- reflect their role and skills to implement IT systems in businesses

**Module contents**

The module “Production-oriented Business Informatics” deals especially with production planning and control processes affected by process planning tasks, as well as classic problems of industrial production. The lecture is focussed on the application of information systems in industrial production companies. Priorities are order flow business processes and PPS-/ERP-Systems. Case studies and demonstrations illustrate the application of these systems.

**Reader's advisory**

- Kurbel, Karl: Produktionsplanung und -steuerung im Enterprise Resource Planning und Supply Chain Management, Oldenbourg Verlag, 2005
- Further literature will be announced in the lecture

**Links**

**Language of instruction**

German
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**Vorkenntnisse / Previous knowledge**

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<td>Exercises and written exam</td>
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**Total time of attendance for the module**

56 h
inf653 - ERP Technologies

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<td>Workload</td>
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<td>• Jorge Marx Gomez</td>
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<tr>
<td></td>
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</table>

Entry requirements

Skills to be acquired in this module

Learning objectives:

• Generation of understandings into the working approaches and tasks of ERP systems
• Examining components of ERP systems
• Generating knowledge about important aspects of the operation processes of ERP systems, such as data storage and processing, user management, and system maintenance.

Professional competence

The students:

• describe ERP systems in compliance with functions and technologies
• identify state-of-the-art and future architectures of ERP systems
• discuss the usage of core technologies (also in practical case studies, for example with SAP NetWeaver)

Methodological competence:

The students:

• categorize fundamental technologies in combination with other enterprise-wide information systems
• apply the presented methods in practical contexts

Social Competence:

The students:

• construct solutions to given problems in groups
• present solutions to computing science problems before groups

Self-competence:

The students:

• recognize the limits of their capacity in implementing and customizing of business application systems

Module contents

The module provides the following content:

• Overview of the components of ERP systems and their functionality and administration
• In-depth analysis of ERP system architecture under consideration of surface structures and user management in ERP systems, with focus on of data storage, particularly the used data models and database structures, backup and recovery strategies
• Deployment of ERP applications in form of application service providing, including the technical characteristics of this business model, especially Special Administration, delimitation and monitoring tasks for systems, which at the same time be provided several customers

Lecture will be accompanied by SAP case studies.

Reader's advisory

<table>
<thead>
<tr>
<th>Links</th>
<th><a href="http://www.wi-ol.de">http://www.wi-ol.de</a></th>
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</table>
inf654 - Mobile Commerce

Module label: Mobile Commerce
Module code: inf654
Credit points: 6.0 KP
Workload: 180 h

Used in course of study:
- Master of Education Programme (Vocational and Business Education) Computing Science (Master of Education) > Mastermodule
- Master's Programme Business Informatics (Master) > Akzentsetzungsmodul der Informatik
- Master's Programme Computing Science (Master) > Angewandte Informatik

Contact person:
- Module responsibility: Jorge Marx Gomez
- Die im Modul Lehrenden
- Authorized examiners:
  - Jorge Marx Gomez
  - Die im Modul Lehrenden

Entry requirements:

Skills to be acquired in this module:

Professional competence:
The students:
- define and encompass MC
- explain the development stages of MC
- are aware of the current developments within MC and are able to classify them
- get to know technical essentials, functionalities and standards of wireless ICT
- assess the fields of application and limitations of wireless ICT
- examine the relevant mobile devices and their respective operating systems, know their characteristics and evaluate their fields of application
- examine market participants, assess business models, optimize business processes
- gain insight into specifics via examples and exercises

Methodological competence:
The students:
- get to know security aspects and specifics of mobile application design
- prototypically develop an Android application
- prepare and give presentations
- develop a concept of a business model for an Android application

Social competence:
The students:
- work on their project in groups of three

Self-competence:
The students:
- reflect their own group-dynamic activities in respect of a mutual goal (successfully finish their project)

Module contents:
See above

Reader's advisory:
- Also all materials provided within the lecture

Links:
http://vlba.wi-ol.de

Language of instruction: German
Duration (semesters): 1 Semester
Module frequency: jährlich
Module capacity: unlimited
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<td>2.00</td>
<td>WiSe</td>
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**Total time of attendance for the module**

56 h
inf655 - IT-Controlling

Module label: IT-Controlling
Module code: inf655
Credit points: 6.0 KP
Workload: 180 h

Used in course of study:
- Master's Programme Business Informatics (Master) > Akzentsetzungsmodul der Informatik
- Master's Programme Computing Science (Master) > Angewandte Informatik

Contact person:
Module responsibility:
- Jorge Marx Gomez
- Die im Modul Lehrenden

Authorized examiners:
- Jorge Marx Gomez
- Die im Modul Lehrenden

Entry requirements:

Skills to be acquired in this module:
This module emphasizes the importance of IT-Controlling within an enterprise. The students gain knowledge on practically orientated technologies in order to leave a better understanding for the application and conversion possibilities of IT-Controlling.

Professional competence:
The students:
- name general tasks and functions of IT-Controlling.
- recognize the importance strategical IT-Controlling applications.
- learn strategies and methods of IT-Controlling.
- identify the existence of an IT-Strategy as a pre condition of IT-Controlling.
- know about the risks of IT-Outsourcing.
- use IT-Controlling tools (e.g. information systems, portfolio analysis, benchmarking IT-Reporting).

Methodological competence:
The students:
- use their knowledge by independently compiled presentations on recent IT-Controlling subjects.

Social competence:
The students:
- discuss their results essentially and appropriately in this subject.
- present their subjects to the group.

Self-competence:
The students:
- understand and analyse their own state of knowledge.
- reflect their own effects on groups.

Module contents:
The employment of information technologies for enterprises is usually a key factor. By the change of our society to an information society, information gains more and more importance and takes a central role within ICT systems. The specifics of the ICT area cannot be supported by the classical economic controlling. The application of a strategical IT-Controlling becomes more and more important. The result of a study shows that in the meantime in about 80% of the German enterprises an ICT strategy was compiled. However, the study makes also clear, that about two out of three enterprises use no methods of strategical IT-Controlling. The new discipline of IT-Controlling provides plans and methods to avoid isolated applications.

Reader's advisory:
-Gadatsch, A: IT-Controlling: Praxisswissen für IT-Controller und Chief-Information Officer. Springer Verlag, 2012

Links:
http://www.wi-ol.de
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Total time of attendance for the module 56 h
inf657 - Product Engineering

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<td>Master's Programme Computing Science (Master) &gt; Angewandte Informatik</td>
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<td>Master's Programme Engineering of Socio-Technical Systems (Master) &gt; Systems Engineering</td>
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<td>Axel Hahn</td>
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<td>Axel Hahn</td>
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<tr>
<td>Entry requirements</td>
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<tr>
<td>Skills to be acquired in this module</td>
<td>Focus of this module is to learn and apply the product engineering process. A project will enable the students to design a product from the idea to the prototype. More specifically, a systematic, partial domain-specific, approach to solve technical problems and aspects of project management will be learned. Regular meetings are used to train the presentation capabilities of the students and to schedule working packages within the teams.</td>
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<tr>
<td>Professional competence</td>
<td>The students:</td>
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<tr>
<td></td>
<td>learn and try out the handling of virtual and physical prototypes</td>
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<td></td>
<td>learn and try out the construction and validation of virtual prototypes with the aid of CAD-applications</td>
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<td>learn and combine different basic development concepts from the mechanical engineering, microelectronics, control engineering and software engineering</td>
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<tr>
<td>Methodological competence</td>
<td>The students:</td>
</tr>
<tr>
<td></td>
<td>learn and try out project management concepts</td>
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<td></td>
<td>learn and recognise the connections of different development concepts from different fields, e.g. mechanical engineering, control engineering, microelectronics and software engineering</td>
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<td></td>
<td>develop own products with creativity techniques</td>
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<td></td>
<td>schedule and organise the product development supported by project management techniques independently</td>
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<td></td>
<td>learn the systematic refining of their own product idea with SysML</td>
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<tr>
<td></td>
<td>design and test products with state-of-the-art CAD-applications</td>
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<tr>
<td>Social competence</td>
<td>The students:</td>
</tr>
<tr>
<td></td>
<td>impart their structure and mode of action to other people</td>
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<tr>
<td></td>
<td>develop their own products in small teams</td>
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<td></td>
<td>present their solutions to groups</td>
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<tr>
<td></td>
<td>integrate criticism to their solutions</td>
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<td></td>
<td>support other groups by giving appropriate criticism</td>
</tr>
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<td>Self-competence</td>
<td>The students:</td>
</tr>
<tr>
<td></td>
<td>recognise and reflect their own limitations to get familiar and to plan a project in an unknown field (e.g. maritime construction/industries)</td>
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<tr>
<td>Module contents</td>
<td>This module is a lecture accompanied by a hands-on project. The students work on one product development task. The product development starts with the idea-finding/brainstorming process which is used to create a digital product concept. During the semester a digital prototype will be created and validated by its initial requirements. Finally, a physical prototype is produced with a 3D-Printer (Rapid Prototyping). The progress of the project has to be documented and presented at different milestones.</td>
</tr>
<tr>
<td>Reader's advisory</td>
<td>-Ehrlenspiel (2003): Integrierte Produktentwicklung</td>
</tr>
</tbody>
</table>
- Ophey (2005): Entwicklungsmanagement, Methoden in der Produktentwicklung

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**Vorkenntnisse / Previous knowledge**

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<td>Final exam of module</td>
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<td>Written exam or oral exam, or written documentation or Presentation or Portfolio</td>
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Total time of attendance for the module 56 h
inf659 - Environmental Management Information Systems II

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<td>• Master's Programme Environmental Modelling (Master) &gt; Mastermodule</td>
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<td>• Master's Programme Sustainability Economics and Management (Master) &gt; Additional Modules</td>
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<td>Module responsibility</td>
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<tr>
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<td>• Jorge Marx Gomez</td>
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<td>• Die im Modul Lehrenden</td>
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<tr>
<td>Entry requirements</td>
<td>Skills to be acquired in this module</td>
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<tr>
<td></td>
<td>This course aims at examining emerging research questions in the field of corporate environmental management information systems (CEMIS). After finishing this course, the students will have extensive knowledge regarding Business Environmental Informatics. In addition, they will be aware of recent research topics and challenges as well as relevant software solutions and practical projects.</td>
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<tr>
<td>Professional competence</td>
<td>The students:</td>
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<tr>
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<td>• will obtain extensive knowledge in the field of CEMIS</td>
</tr>
<tr>
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<td>• know emerging research questions and challenges as well as software solutions and projects</td>
</tr>
<tr>
<td>Methodological competence</td>
<td>The students:</td>
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<tr>
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<td>• find their own solutions or apply already existing approaches to new and unsolved questions in the field of CEMIS</td>
</tr>
<tr>
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<td>• capture required data, analyse it and present it to their team or the whole group</td>
</tr>
<tr>
<td>Social competence</td>
<td>The students:</td>
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<td>• are supposed to work in teams and therefore have to identify working packages and have to take on responsibility for the jobs assigned to them</td>
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<tr>
<td></td>
<td>• present and discuss their own results with the team and the other members of the course</td>
</tr>
<tr>
<td>Self-competence</td>
<td>The students:</td>
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<tr>
<td></td>
<td>• learn about their own limitations and learn to accept criticism in order to strengthen their own abilities</td>
</tr>
<tr>
<td>Module contents</td>
<td>A strong social pressure forces enterprises to question their current way of implementing their business and to include different aspects of sustainability into their strategies and operational actions. Such a rethinking of one's business is supported by corporate environmental management information systems. Such systems aim at optimising the energy and resource usage, emission and waste minimisation as well as production integrated environmental protection. Of course they support the fulfillment of legal requirements such as waste management or hazardous material handling. The module will cover:</td>
</tr>
<tr>
<td></td>
<td>• recent and emerging research questions and topics related to the field of CEMIS as well as Business Environmental Informatics.</td>
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<tr>
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<td>• discussion and hands-on experience of standard software systems and newly established solutions.</td>
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<td></td>
<td>• applying the knowledge obtained to the definition of new as well as on solving new case studies.</td>
</tr>
</tbody>
</table>

Reader's advisory
Marx Gómez, Jorge, Scholtz, Brenda (Eds.) (2016): Information Technology in Environmental Engineering. Springer International Publishing

Hershey (PA), London

Rautenstrauch, C. (1999), Betriebliche Umweltinformationssysteme. Springer-Verlag

Links
http://www.wi-ol.de

Languages of instruction
German, English

Duration (semesters)
1 Semester

Module frequency
jährlich

Module capacity
unlimited

Reference text
Type and language of program will be announced prior to the beginning of the course

Modullevel
AS (Akzentsetzung / Accentuation)

Modulart
je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program
V (2 SWS), Ü (2 SWS) oder SE
Nach Ankündigung zu Beginn der Veranstaltung (2SWS V + 2 SWS Ü oder Blockseminar)

Vorkenntnisse / Previous knowledge

Final exam of module

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<td>WiSe</td>
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Total time of attendance for the module
56 h
inf660 - Sustainability Informatics

Module label: Sustainability Informatics
Module code: inf660
Credit points: 6.0 KP
Workload: 180 h

Type and language of program will be announced prior to the beginning of the course.
The course is recognised as a practical project in the Master's programme Sustainability Economics and Management.

Used in course of study
- Master's Programme Business Informatics (Master) > Akzentsetzungsmodule der Informatik
- Master's Programme Computing Science (Master) > Angewandte Informatik

Contact person
Module responsibility
- Jorge Marx Gomez
- Barbara Bremer-Rapp

Authorized examiners
- Jorge Marx Gomez
- Barbara Bremer-Rapp

Entry requirements

Skills to be acquired in this module
After finishing this course, students should be able to set up a sustainability report tailormade for different target groups for any kind of organization.
The students will be enabled to know and apply different available standards and guidelines as well as to estimate the influence of data defects and the feasibility of recent information and communication technology.
This course emphasizes the importance of sustainability reporting as a means of an organization's communication (internal and external) and provides an overview on relevant indicators, standards and guidelines. Based on that the handling of data defects and missing data as well as different approaches of reporting will be discussed. In addition, the specific requirements of different target groups regarding content and presentation of a report will be discussed as well.

Professional competence
The students:
- are aware of different indicators, standards and guidelines and know when to apply which.
- know different approaches of data capturing, interpolation of missing or corrupt data as well as the influence of each of these issues on the validity of a report.
- implement concepts for tailormade target group orientation.

Methodological competence
The students:
- prepare a small sustainability report based on their decision which standard or guideline to use.
- capture existing data and analyse it.
- prepare a tailormade target oriented presentation of their results.

Social competence
The students:
- are supposed to work in teams and therefore have to identify working packages and have to take on responsibility for the jobs assigned to them.
- present and discuss their own results with the team and the other members of the course

Self-competence
The students:
- learn about their own limitations and learn to accept criticism in order to strengthen their own abilities

Module contents
The following topics will be covered in this module:
- different definitions of the term sustainability.
- the importance of sustainability reporting as a means of an organisation's communication.
- LCA, environmental accounting, supply chain management as data sources.
- semantic, comparability and transformation of indicators, standards and guidelines.
• interpolation and interpretation of data defects.
• how to report (e.g. knowledge management, document engineering, integrated reporting, different target groups).

Reader's advisory

• Rautenstrauch, C. (1999), Betriebliche Umwelthinformationssysteme, Springer-Verlag, Berlin

Links
http://vlba.wi-ol.de

Languages of instruction
German, English

Duration (semesters)
1 Semester

Module capacity
unlimited

Reference text
Die Lehrveranstaltung wird im Masterstudiengang Sustainability Economics and Management als practical project anerkannt.

Modullevel
AC (Aufbaucurriculum / Composition)

Modulart
je nach Studiengang Pflicht oder Wahlpflicht

Lern-Lehrenform / Type of program

Vorkenntnisse / Previous knowledge

Examination
Time of examination
Type of examination

Final exam of module

Course type
Comment
SWS
Frequency
Workload attendance
Lecture
2.00
SuSe
28 h
Übung oder Praktikum
2.00
SuSe
28 h

Total time of attendance for the module
56 h
### inf661 - Digital Transformation

<table>
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<tr>
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<tbody>
<tr>
<td>Module code</td>
<td>inf661</td>
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<tr>
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| Used in course of study | - Master's Programme Business Informatics (Master) > Akzentsetzungsmodule der Informatik  
                     - Master's Programme Computing Science (Master) > Angewandte Informatik |
| Contact person | Jorge Marx Gomez  
                   - Die im Modul Lehrende |

**Skills to be acquired in this module**

*After successful completion of the lecture, the students should be able to define enabler and actors of a digital transformation within the context of a model company. Furthermore, key competences such as Cloud Computing or IoT are used to make potential exploitation by new digital business models visible. The results will be evaluated.*

The lecture explains basic properties of a digital transformation for companies and shows specific development potential. By forming and building a model company, students are able to create a realistic and practical scenario. A final documentation reveals the degree of fulfilment and the students point of view on the scenario.

**Professional competence**

The students:

- recognize basic properties and facts of a digital transformation for companies
- devise different terms of digital transformation
- expose actual introduction projects
- compile practical knowledge by dividing goals of enabler and actors of a digital transformation
- obtain basic knowledge of key competences such as IT-Security, Data Analytics, Big Data, Cloud Computing
- identify digital business models within the specific development potential

**Methodological competence**

The students:

- determine and analyse required information
- prepare the given information for specific target groups
- establish an analytical understanding of digital enterprise structures within key competences and applications

**Social competence**

The students:

- work in groups, identify work packages and take on responsibility for the jobs assigned to them
- discuss and introduce the results on a functional level

**Self-competence**

The students:

- reflect their actions on the basis of self defined objectives
- analyse their own state of knowledge

**Module contents**

*Within the lecture the upcoming topics are discussed:*

- definition and introduction of digital transformation
- success factors, market changes and introductory projects
- enabler of a digital transformation (competences, applications and structures)
- digital business models and networks
- actors of a digital transformation
- industry 4.0 in the context of a digital transformation
Reader's advisory


| Links | http://www.wi-ol.de |
| Languages of instruction | German, English |
| Duration (semesters) | 1 Semester |
| Module frequency | |
| Module capacity | unlimited |
| Modullevel | AC (Aufbaucurriculum / Composition) |
| Modulart | je nach Studiengang Pflicht oder Wahlpflicht |
| Lern-/Lehrform / Type of program | Referat, Projekt oder Klausur. Bekanntgabe zu Beginn der Veranstaltung |
| Vorkenntnisse / Previous knowledge | |
| Examination | Time of examination | Type of examination |
| Final exam of module | After the end of the lecture period | Papers, project or written examination. Announcement at the beginning of the lecture period. |
| Course type | Comment | SWS | Frequency | Workload attendance |
| Lecture | | 2.00 | SuSe or WiSe | 28 h |
| Exercises | | 2.00 | SuSe or WiSe | 28 h |
| Total time of attendance for the module | | | | 56 h |
inf690 - Special Topics in 'Business Informatics' I

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| Used in course of study | - Master's Programme Business Informatics (Master) > Akzentsetzungsmodule der Informatik  
                                      - Master's Programme Computing Science (Master) > Angewandte Informatik |
| Contact person| Module responsibility                     |
|              | - Axel Hahn                               |
|              | - Jorge Marx Gomez                        |
|              | - Jürgen Sauer                            |
|              | Authorized examiners                      |
|              | - Die im Modul Lehrenden                   |

Entry requirements

Skills to be acquired in this module

- This module integrates current developments in the field in adequate study courses.

**Professional competences**

- The students:
  - define and contrast a computer science part, in which they are specialised, in detail or evaluate computer science in general
  - recognise and evaluate applied techniques and methods of their subject and are aware of their limits
  - identify, structure and solve problems/tasks, also in new or developing subject areas
  - apply state of the art and innovative methods to solve problems, if necessary from other disciplines
  - are aware of the current limits and contribute to the development of computer science research and technology
  - discuss and evaluate recent computer science developments

**Methodological competences**

- The students:
  - evaluate and apply tools, technology and methods sophisticatedly
  - combine new and original approaches and methods creatively
  - evaluate problems/tasks, including new or developing subject areas of their discipline and
  - apply computer science methods for solutions and research

**Social competences**

- The students:
  - support team process by their abilities

**Self-competences**

- The students:
  - pursue the overall and special computer science development critically
  - implement innovative professional activities effectively and independently

Module contents

- See assigned course description

Reader's advisory

- As announced in course

Links

- Language of instruction: German
- Duration (semesters): 1 Semester
- Module frequency: unregelmäßig
- Module capacity: unlimited
- Modullevel: AS (Akzentsetzung / Accentuation)
- Modulart: je nach Studiengang Pflicht oder Wahlpflicht
- Lern-Lehrform / Type of program: 2 Veranst. aus V, S, Ü, P, PR
- Lern-Lehrform / Type of program: 2 courses out of V, S, Ü, P, PR

Vorkenntnisse / Previous knowledge

Examination

- Time of examination: At the end of the lecture period
- Type of examination: Portfolio or presentation or oral exam

Course type

- VA-Auswahl
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inf691 - Special Topics in 'Business Informatics' II

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| Used in course of study | Master's Programme Business Informatics (Master) > Akzentsetzungsmodule der Informatik  
                          Master's Programme Computing Science (Master) > Angewandte Informatik |
<p>| Contact person | Module responsibility                      |
|              | • Jorge Marx Gomez                         |
|              | • Axel Hahn                                |
|              | • Jürgen Sauer                             |
| Authorized examiners | Die im Modul Lehrenden                     |
| Entry requirements | Skills to be acquired in this module      |
|              | This module integrates current developments in the field, especially with a focus on corporate environmental management information systems, in adequate study courses. |
|              | <strong>Professional competences</strong>               |
|              | The students:                             |
|              | • define and contrast a computer science part, in which they are specialised, in detail or evaluate computer science in general |
|              | • recognise and evaluate applied techniques and methods of their subject and are aware of their limits |
|              | • identify, structure and solve problems/tasks, also in new or developing subject areas |
|              | • apply state of the art and innovative methods to solve problems, if necessary from other disciplines |
|              | • are aware of the current limits and contribute to the development of computer science research and technology |
|              | • discuss and evaluate recent computer science developments |
|              | <strong>Methodological competences</strong>             |
|              | The students:                             |
|              | • evaluate and apply tools, technology and methods sophisticatedly |
|              | • combine new and original approaches and methods creatively |
|              | • evaluate problems/tasks, including new or developing subject areas of their discipline and |
|              | • apply computer science methods for solutions and research |
|              | <strong>Social competences</strong>                    |
|              | The students:                             |
|              | • support team process by their abilities  |
|              | <strong>Self-competences</strong>                      |
|              | The students:                             |
|              | • pursue the overall and special computer science development critically |
|              | • implement innovative professional activities effectively and independently |
| Module contents | See assigned course description          |
| Reader's advisory | As announced in course                  |
| Links | | |
| Language of instruction | German   |
| Duration (semesters) | 1 Semester        |
| Module frequency | unregelmäßig |
| Module capacity | unlimited |
| Modullevel | AS (Akzentsetzung / Accentuation) |
| Modullevel | AS (Akzentsetzung / Accentuation) |
| Modulart | je nach Studiengang Pflicht oder Wahlpflicht |
| Modulart | je nach Studiengang Pflicht oder Wahlpflicht |
| Lern-Lehrform / Type of program | 2 Veranst. aus V, S, Ü, P, PR |
| Lern-Lehrform / Type of program | 2 courses out of V, S, Ü, P, PR |
| Vorkenntnisse / Previous knowledge | | |
| Examination | Time of examination | Type of examination |
| Final exam of module | At the end of the lecture period | Portfolio or presentation or oral exam |</p>
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inf692 - Special Topics in 'Business Informatics' III

Module label: Special Topics in 'Business Informatics' III
Module code: inf692
Credit points: 6.0 KP
Workload: 180 h
Used in course of study:
- Master's Programme Business Informatics (Master) > Akzentsetzungsmodule der Informatik
- Master's Programme Computing Science (Master) > Angewandte Informatik

Contact person:
Module responsibility:
- Jorge Marx Gomez
- Axel Hahn
- Jürgen Sauer
Authorized examiners:
- Die im Modul Lehrenden

Entry requirements:

Skills to be acquired in this module:
This module integrates current developments in the field, especially with a focus on business intelligence, in adequate study courses.

Professional competences:
The students:
- define and contrast a computer science part, in which they are specialised, in detail or evaluate computer science in general
- recognise and evaluate applied techniques and methods of their subject and are aware of their limits
- identify, structure and solve problems/tasks, also in new or developing subject areas
- apply state of the art and innovative methods to solve problems, if necessary from other disciplines
- are aware of the current limits and contribute to the development of computer science research and technology
- discuss and evaluate recent computer science developments

Methodological competences:
The students:
- evaluate and apply tools, technology and methods sophisticatedly
- combine new and original approaches and methods creatively
- evaluate problems/tasks, including new or developing subject areas of their discipline and apply computer science methods for solutions and research

Social competences:
The students:
- support team process by their abilities

Self-competences:
The students:
- pursue the overall and special computer science development critically
- implement innovative professional activities effectively and independently

Module contents:
See assigned course description

Reader's advisory:
As announced in course

Links:

Language of instruction: German
Duration (semesters): 1 Semester
Module frequency: unregelmäßig
Module capacity: unlimited
Modullevel: AS (Akzentsetzung / Accentuation)
Modullevel: AS (Akzentsetzung / Accentuation)
Modulart: je nach Studiengang Pflicht oder Wahlpflicht
Modulart: je nach Studiengang Pflicht oder Wahlpflicht
Lern-Lehrform / Type of program:
- 2 Veranst. aus V, S, Ü, P, PR
Lern-Lehrform / Type of program:
- 2 courses out of V, S, Ü, P, PR
Vorkenntnisse / Previous knowledge:

Examination:
- Time of examination: At the end of the lecture period
- Type of examination: Portfolio or presentation or oral exam
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inf693 - Special Topics in 'Business Informatics' IV

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| Used in course of study           | - Master's Programme Business Informatics (Master) > Akzentsetzungsmodule der Informatik
- Master's Programme Computing Science (Master) > Angewandte Informatik |
<p>| Contact person                    | Module responsibility                        |
|                                   | • Jorge Marx Gomez                           |
|                                   | • Axel Hahn                                  |
|                                   | • Jürgen Sauer                               |
| Authorized examiners              | Die im Modul Lehrenden                       |
| Entry requirements                | This module integrates current developments in the field in adequate study courses. |
| Skills to be acquired in this module | Professional competences                     |
|                                   | The students:                               |
|                                   | - define and contrast a computer science part, in which they are specialised, in detail or evaluate computer science in general |
|                                   | - recognise and evaluate applied techniques and methods of their subject and are aware of their limits |
|                                   | - identify, structure and solve problems/tasks, also in new or developing subject areas |
|                                   | - apply state of the art and innovative methods to solve problems, if necessary from other disciplines |
|                                   | - are aware of the current limits and contribute to the development of computer science research and technology |
|                                   | - discuss and evaluate recent computer science developments |
| Skills to be acquired in this module | Methodological competences                  |
|                                   | The students:                               |
|                                   | - evaluate and apply tools, technology and methods sophisticatedly |
|                                   | - combine new and original approaches and methods creatively |
|                                   | - evaluate problems/tasks, including new or developing subject areas of their discipline and |
|                                   | - apply computer science methods for solutions and research |
| Skills to be acquired in this module | Social competences                          |
|                                   | The students:                               |
|                                   | - support team process by their abilities    |
| Skills to be acquired in this module | Self-competences                            |
|                                   | The students:                               |
|                                   | - pursue the overall and special computer science development critically |
|                                   | - implement innovative professional activities effectively and independently |
| Module contents                   | See assigned course description              |
| Reader's advisory                 | As announced in course                      |
| Links                             | Language of instruction: German              |
| Duration (semesters)              | 1 Semester                                  |
| Module frequency                  | unregelmäßig                                |
| Module capacity                   | unlimited                                   |
| Module level                      | AS (Akzentsetzung / Accentuation)           |
| Modulelevel                       | AS (Akzentsetzung / Accentuation)           |
| Modulart                          | je nach Studiengang Pflicht oder Wahlpflicht |
| Modulart                          | je nach Studiengang Pflicht oder Wahlpflicht |
| Lern-/Lehrform / Type of program  | 2 Veranst. aus V, S, Ü, P, PR (4SWS)        |
| Lern-/Lehrform / Type of program  | 2 courses out of V, S, Ü, P, PR             |
| Vorkenntnisse / Previous knowledge | Examination Time of examination Type of examination |
|                                   | Final exam of module: At the end of the lecture period Portfolio or presentation or oral exam |
| Course type                       | VA-Auswahl                                  |</p>
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<tr>
<td>Module label</td>
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<tr>
<td>Module code</td>
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| Used in course of study | - Master's Programme Business Informatics (Master) > Akzentsetzungsmodule der Informatik  
    - Master's Programme Computing Science (Master) > Angewandte Informatik |
| Contact person        | Module responsibility                       |
|                       | - Jorge Marx Gomez                          |
|                       | - Axel Hahn                                  |
|                       | - Jürgen Sauer                               |
| Authorized examiners  | Die im Modul Lehrenden                      |

**Entry requirements**

**Skills to be acquired in this module**

This module integrates current developments in the field in adequate study courses.

**Professional competences**

The students:
- define and contrast a computer science part, in which they are specialised, in detail or evaluate computer science in general
- recognise and evaluate applied techniques and methods of their subject and are aware of their limits
- identify, structure and solve problems/tasks, also in new or developing subject areas
- apply state of the art and innovative methods to solve problems, if necessary from other disciplines
- are aware of the current limits and contribute to the development of computer science research and technology
- discuss and evaluate recent computer science developments

**Methodological competences**

The students:
- examine tasks with technical and research literature, write an academic article and present their solutions academically
- examine problems/tasks, including new or developing subject areas of their discipline and apply computer science methods for solutions and research
- schedule time processes and resources

**Social competences**

The students:
- communicate with users and experts convincingly

**Self-competences**

The students:
- pursue the overall and special computer science development critically
- develop and reflect self-developed hypotheses to theories independently

**Module contents**

See assigned course description

**Reader's advisory**

As announced in course

**Links**

<table>
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**Vorkenntnisse / Previous knowledge**

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inf695 - Current Topics in 'Business Informatics' II

Module label: Current Topics in 'Business Informatics' II
Module code: inf695
Credit points: 3.0 KP
Workload: 90 h

Used in course of study:
- Master's Programme Business Informatics (Master) > Akzentsetzungsmodule der Informatik
- Master's Programme Computing Science (Master) > Angewandte Informatik

Contact person:
Module responsibility
- Jorge Marx Gomez
- Axel Hahn
- Jürgen Sauer

Authorized examiners
- Die im Modul Lehrenden

Entry requirements:

Skills to be acquired in this module:
This module integrates current developments in the field, especially with a focus on corporate environmental management information systems, in adequate study courses.

Professional competences
The students:
- define and contrast a computer science part, in which they are specialised, in detail or evaluate computer science in general
- recognise and evaluate applied techniques and methods of their subject and are aware of their limits
- identify, structure and solve problems/tasks, also in new or developing subject areas
- apply state of the art and innovative methods to solve problems, if necessary from other disciplines
- are aware of the current limits and contribute to the development of computer science research and technology
- discuss and evaluate recent computer science developments

Methodological competences
The students:
- examine tasks with technical and research literature, write an academic article and present their solutions academically
- evaluate problems/tasks, including new or developing subject areas of their discipline and apply computer science methods for solutions and research
- schedule time processes and resources

Social competences
The students:
- communicate with users and experts convincingly

Self-competences
The students:
- pursue the overall and special computer science development critically
- develop and reflect self-developed hypotheses to theories independently

Module contents:
See assigned course description

Reader's advisory:
As announced in course

Links:

Language of instruction:
German

Duration (semesters):
1 Semester

Module frequency:
unregelmäßig

Module capacity:
unlimited

Modullevel:
AS (Akzentsetzung / Accentuation)

Lern-/Lehrform / Type of program:
S oder V (2 SWS)

Examination:
Time of examination:
At the end of the lecture period
Type of examination:
Presentation or oral exam
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inf696 - Current Topics in 'Business Informatics' III

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<td>Module responsibility</td>
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<tr>
<td></td>
<td>- Jorge Marx Gomez</td>
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<td>- Axel Hahn</td>
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<td>- Jürgen Sauer</td>
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<td>- Die im Modul Lehrenden</td>
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<td>Skills to be acquired in this module</td>
<td>This module integrates current developments in the field, especially with a focus on business intelligence, in adequate study courses.</td>
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<td>Professional competences</td>
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</tr>
<tr>
<td></td>
<td>- define and contrast a computer science part, in which they are specialised, in detail or evaluate computer science in general</td>
</tr>
<tr>
<td></td>
<td>- recognise and evaluate applied techniques and methods of their subject and are aware of their limits</td>
</tr>
<tr>
<td></td>
<td>- identify, structure and solve problems/tasks, also in new or developing subject areas</td>
</tr>
<tr>
<td></td>
<td>- apply state of the art and innovative methods to solve problems, if necessary from other disciplines</td>
</tr>
<tr>
<td></td>
<td>- are aware of the current limits and contribute to the development of computer science research and technology</td>
</tr>
<tr>
<td></td>
<td>- discuss and evaluate recent computer science developments</td>
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<tr>
<td>Methodological competences</td>
<td>The students:</td>
</tr>
<tr>
<td></td>
<td>- examine tasks with technical and research literature, write an academic article and present their solutions academically</td>
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<tr>
<td></td>
<td>- evaluate problems/tasks, including new or developing subject areas of their discipline and apply computer science methods for solutions and research</td>
</tr>
<tr>
<td></td>
<td>- schedule time processes and resources</td>
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<tr>
<td>Social competences</td>
<td>The students:</td>
</tr>
<tr>
<td></td>
<td>- communicate with users and experts convincingly</td>
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<tr>
<td>Self-competences</td>
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<tr>
<td></td>
<td>- pursue the overall and special computer science development critically</td>
</tr>
<tr>
<td></td>
<td>- develop and reflect self-developed hypotheses to theories independently</td>
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<td>See assigned course description</td>
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**inf697 - Current Topics in 'Business Informatics' IV**

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**Used in course of study**
- Master's Programme Business Informatics (Master) > Akzentsetzungsmodule der Informatik
- Master's Programme Computing Science (Master) > Angewandte Informatik

**Contact person**
- Module responsibility
  - Jorge Marx Gomez
  - Axel Hahn
  - Jürgen Sauer
- Authorized examiners: Die im Modul Lehrenden

**Entry requirements**

**Skills to be acquired in this module**
- This module integrates current developments in the field in adequate study courses.

**Professional competences**
- The students:
  - define and contrast a computer science part, in which they are specialised, in detail or evaluate computer science in general
  - recognise and evaluate applied techniques and methods of their subject and are aware of their limits
  - identify, structure and solve problems/tasks, also in new or developing subject areas
  - apply state of the art and innovative methods to solve problems, if necessary from other disciplines
  - are aware of the current limits and contribute to the development of computer science research and technology
  - discuss and evaluate recent computer science developments

**Methodological competences**
- The students:
  - examine tasks with technical and research literature, write an academic article and present their solutions academically
  - evaluate problems/tasks, including new or developing subject areas of their discipline and apply computer science methods for solutions and research
  - schedule time processes and resources

**Social competences**
- The students:
  - communicate with users and experts convincingly

**Self-competences**
- The students:
  - pursue the overall and special computer science development critically
  - develop and reflect self-developed hypotheses to theories independently

**Module contents**
- See assigned course description

**Reader's advisory**
- As assigned in course

**Links**

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inf810 - Special Topics in Computer Science I

**Module label**  
Special Topics in Computer Science I

**Module code**  
inf810

**Credit points**  
6.0 KP

**Workload**  
180 h

**Used in course of study**  
- Master's Programme Business Informatics (Master) > Akzentsetzungsmodule der Informatik

**Contact person**  
Module responsibility
- Jorge Marx Gomez
- Martin Georg Fränzle

Authorized examiners
- Die im Modul Lehrenden

**Entry requirements**

**Skills to be acquired in this module**

This module integrates current computer science developments into the business informatics program by appropriate study courses.

**Professional competence**
The students:
- Know recent technological or scientific computer science developments
- Transfer computer science methods and development models to IT application area requirements
- Evaluate the possibilities and limitations of computer science methods and tools and apply them appropriately

**Methodological competence**
The students:
- Review problems, formulate them with formal models and explore them appropriately
- Identify and present (one or more) computer science problem solutions
- Select and evaluate appropriate tools and methods
- Examine problems with technical and scientific literature

**Social competence**
The students:
- work in a team

**Self-competence:**
The Students:
- Plan their informatical actions independently

**Module contents**
According to the assigned task

**Reader's advisory**
According to the assigned task

**Links**

**Language of instruction**  
German

**Duration (semesters)**  
1 Semester

**Module frequency**  
Sommer und Winter

**Module capacity**  
unlimited

**Modullevel**  
AS (Akzentsetzung / Accentuation)

**Modullevel**  
AS (Akzentsetzung / Accentuation)

**Modulart**  
Wahlmodul / Opportunity

**Modulart**  
Wahlmodul / Opportunity

**Lern-Lehrform / Type of program**  
4 aus V, Ü, S, P, PR

**Lern-Lehrform / Type of program**  
4 aus V, Ü, S, P, PR

**Vorkenntnisse / Previous knowledge**

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### inf811 - Special Topics in Computer Science II

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<tr>
<td></td>
<td>• Jorge Marx Gomez</td>
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<td>• Martin Georg Fränzle</td>
</tr>
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<td><strong>Authorized examiners</strong></td>
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**Entry requirements**

**Skills to be acquired in this module**

This module integrates current computer science developments into the business informatics program, especially considering the selected focus area, by appropriate study courses.

**Professional competence**

The students:
- Know recent technological or scientific computer science developments
- Transfer computer science methods and development models to IT application area requirement
- Evaluate the possibilities and limitations of computer science methods and tools and apply them appropriately

**Methodological competence**

The students:
- Review problems, formulate them with formal models and explore them appropriately
- Identify and present (one or more) computer science problem solutions
- Select and evaluate appropriate tools and methods
- Examine problems with technical and scientific literatur

**Social competence**

The students:
- work in a team

**Self-competence:**

The Students:
- Plan their informatical actions independently

**Module contents**

According to the assigned task

**Reader's advisory**

According to the assigned task

**Language of instruction**

German

**Duration (semesters)**

1 Semester

**Module frequency**

Sommer und Winter

**Module capacity**

unlimited

**Modullevel**

AS (Akzentsetzung / Accentuation)

**Modullevel**

AS (Akzentsetzung / Accentuation)

**Modulart**

Wahlmodul / Opportunity

**Lern-/Lehrform / Type of program**

4 aus V, Ü, S, P, PR

**Vorkenntnisse / Previous knowledge**

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**Course type**

VA-Auswahl

**SWS**

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## inf812 - Current Topics in Computer Science I

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<td>Evaluate the possibilities and limitations of computer science methods and tools and apply them appropriately</td>
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<td>work in a team</td>
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inf813 - Current Topics in Computer Science II

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| Contact person        | Module responsibility                  |
|                       |  - Jorge Marx Gomez                    |
|                       |  - Martin Georg Fränzle                |
|                       | Authorized examiners                   |
|                       |  - Die im Modul Lehrenden               |

**Entry requirements**

**Skills to be acquired in this module**

This module integrates current computer science developments into the business informatics program, especially considering the selected focus area, by appropriate study courses.

**Professional competence**
The students:
- Know recent technological or scientific computer science developments
- Transfer computer science methods and development models to IT application area requirements
- Evaluate the possibilities and limitations of computer science methods and tools and apply them appropriately

**Methodological competenc**
The students:
- Review problems, formulate them with formal models and explore them appropriately
- Identify and present (one or more) computer science problem solutions
- Select and evaluate appropriate tools and methods
- Examine problems with technical and scientific literature

**Social competence**
The students:
- work in a team

**Self-competence:**
The Students:
- Plan their informatical actions independently

**Module contents**

According to the assigned task

**Reader's advisory**

According to the assigned task

**Language of instruction**

German

**Duration (semesters)**

1 Semester

**Module frequency**

Sommer und Winter

**Module capacity**

unlimited

**Modullevel**

AS (Akzentsetzung / Accentuation)

**Modulart**

Wahlmodul / Opportunity

**Lern-/Lehrform / Type of program**

2 aus V, Ü, S, P, PR

**Vorkenntnisse / Previous knowledge**

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**Course type**

VA-Auswahl

**SWS**

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### Module der Wirtschafts- und Rechtswissenschaften (Master)

**wir520 - International and EU Economic Law**

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<tr>
<td></td>
<td>Thorsten Raabe</td>
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<td>Alexander Nicolai</td>
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<td>Christine Godt</td>
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**Entry requirements**

**Skills to be acquired in this module**

- verstehen internationale und europäische Rechtsnormen und Rechtsfragen.
- wenden internationale und europäische Rechtsnormen an.
- beherrschen englische Rechtsterminologie.

**Module contents**

Die Veranstaltungen Internationales Wirtschaftsrecht und EU-Wirtschaftsrecht des Moduls sollen den Studierenden angesichts der Internationalisierung und Europäisierung aller Rechtsgebiete wichtige Grundkenntnisse auf dem Gebiet des internationalen Vertrags- und Wirtschaftsrechts vermitteln. Des Weiteren werden die jeweils wechselseitigen Bezüge zum internationalen Privat- und Wirtschaftsrecht und umgekehrt vermittelt. Das Modul wird in englischer Sprache gegeben, um einerseits die Internationalität des Themengebiets hervorzuheben und andererseits auf den Umgang mit der im späteren Beruf unerlässlichen englischen Sprache vorzubereiten. Inhaltlich sind die folgenden Themengebiete relevant:

- Einführung in das internationale Wirtschaftsrecht,
- Historie und Rechtsquellen des Internationalen Wirtschaftsrechts,
- Internationales Privatrecht (EGBGB),
- UN-Kaufrecht (CISG),
- Internationales Währungssystem,
- Internationale Organisationen,
- WTO: WTO und die EU,
- Das Streitbeilegungsverfahren im internationalen Wirtschaftsrecht,
- Institutionelle/Konstitutionelle Fragen des EU Wirtschaftsrechts,
- Rechtsschutz in der EU,
- Das Rechtsetzungsverfahren,
- Vertiefung Recht der Grundfreiheiten (EU Recht),
- EU-Wettbewerbsregeln,
- Rechtsharmonisierung im Rahmen der EU auf ausgewählten Gebieten des Privat- und Wirtschaftsrechts (z.B. Verbraucherrecht, Zivilrecht generell, Gesellschaftsrecht, Recht des geistigen Eigentums, Lauterkeitsrechts).

**Reader's advisory**

Ergänzend:

**Links**
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<th><strong>Language of instruction</strong></th>
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<td><strong>Module capacity</strong></td>
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<td><strong>Module level</strong></td>
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### wir801 - Concepts of Organisation and Management

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<td>Credit points</td>
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| Used in course of study | • Master's Programme Business Administration, Economics and Law (Master) > Mantelmodule  
                          | • Master's Programme Business Administration, Economics and Law (Master) > Schwerpunkt "China - Wirtschaft und Sprache" (CHI) - Kernmodule  
                          | • Master's Programme Business Informatics (Master) > Module der Wirtschafts- und Rechtswissenschaften (Master)  
                          | • Master's Programme Management Consulting (Master) > Mastermodule           |
| Contact person        | Module responsibility  
                          |   » Thomas Breisig                                                           |
|                       | Authorized examiners  
                          |   » Die im Modul Lehrenden                                                   |
|                       | Module counseling       
                          |   » Peter Wengelowski                                                       |
|                       |   » Jonathan Gilbert      |
|                       |   » Thomas Breisig         |
| Entry requirements    | keine                                                                         |
| Skills to be acquired in this module | Students get to know selected concepts of organisation and management. Their respective objectives, instruments and methods are discussed and their use in everyday business is critically reflected. Students learn to deal with different management concepts in a conscious and critical way, especially through case studies and discussions.  
Upon completion of the module, students will:  
• be familiar with the emergence, development, and content of various management concepts;  
• be able to convey key findings of the various management concepts to practical issues in the field of organisation and management;  
• develop skills of self-reflection (supported by the technical and didactical concepts). |
| Module contents       | Students receive deeper insights into concepts of organisation and management, including:  
                          | • Lean Management  
                          | • Change Management  
                          | • Quality Management  
                          | • Business Process Reengineering  
The presentations and discussions within the seminars also offer possibilities to deepen and broaden these topics according to the student’s interest and current developments in theory and practice, e. g. Balanced Scorecard, Learning Organisation, Organisational Culture, Worker Participation, Networks, Diversity Management, Management by Objectives. |
Further literature will be announced during the semester according to the particular lecture/seminar content. |
<p>| Links                 | <a href="http://www.uol.de/orgpers">www.uol.de/orgpers</a>                                                                   |
| Language of instruction | German                                                                           |
| Duration (semesters)  | 1 Semester                                                                       |
| Module frequency      | jährlich                                                                        |
| Module capacity       | unlimited                                                                       |
| Reference text        | Das Modul muss im Masterstudiengang Wirtschafts- und Rechtswissenschaften als Basismodul von allen Schwerpunkten gewählt werden. |
| Modullevel            | ---                                                                              |
| Modulart              | je nach Studiengang Pflicht oder Wahlpflicht                                      |
| Lern-Lehrform / Type of program | Praktische Erfahrungen; Kenntnisse aus den Bachelor-Modulen: Organisation und Human Resource Management |
| Vorkenntnisse / Previous knowledge | Time of examination | Type of examination |</p>
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<td>Depending on the type of examination during the lecture period, at the end of the lecture period or at the end of the semester</td>
<td>Seminar paper or presentation or written exam or oral exam or portfolio or project report (will be determined and announced at the beginning of the semester by the lecturer)</td>
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<table>
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<tr>
<td>Seminar</td>
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**Total time of attendance for the module**: 56 h
### wir806 - Information Technology Law

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<td><strong>Contact person</strong></td>
<td><strong>Module responsibility</strong>&lt;br&gt;<strong>Jürgen Taeger</strong>&lt;br&gt;<strong>Authorized examiners</strong>&lt;br&gt;<strong>Die im Modul Lehrenden</strong>&lt;br&gt;<strong>Module counseling</strong>&lt;br&gt;<strong>Sebastian Louven</strong></td>
</tr>
<tr>
<td><strong>Entry requirements</strong></td>
<td><strong>Skills to be acquired in this module</strong>&lt;br&gt;Upon completion of the module, students will be able to:&lt;br&gt;• deal with all legal questions arising from the use of information and communication technology in all sectors of society,&lt;br&gt;• identify legal issues arising from the use of information and communication technology,&lt;br&gt;• draft solutions for these legal questions.</td>
</tr>
<tr>
<td><strong>Module contents</strong></td>
<td><strong>Internet law; IT contracts law</strong></td>
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<tr>
<td><strong>Reader's advisory</strong></td>
<td><strong>Köhler, Fetzer, Recht des Internet, 8. Aufl., 2016</strong>&lt;br&gt;<strong>Redeker, IT-Recht, 6. Aufl., 2017</strong></td>
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<td><strong>Examination</strong></td>
<td><strong>Time of examination</strong>&lt;br&gt;<strong>Type of examination</strong>&lt;br&gt;<strong>Final exam of module</strong> during term presentation and handout, written exam or oral exam</td>
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<td><strong>Course type</strong></td>
<td><strong>Comment</strong>&lt;br&gt;<strong>SWS</strong>&lt;br&gt;<strong>Frequency</strong>&lt;br&gt;<strong>Workload attendance</strong>&lt;br&gt;Lecture 2.00 28 h 28 h&lt;br&gt;Seminar 2.00 56 h</td>
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wir808 - Multivariate Statistics

Module label: Multivariate Statistics
Module code: wir808
Credit points: 6.0 KP
Workload: 180 h

Used in course of study:
- Master's Programme Business Administration, Economics and Law (Master) > Mantelmodule
- Master's Programme Business Administration, Economics and Law (Master) > Schwerpunkt "Volkswirtschaftslehre" (VWL)
- Master's Programme Business Informatics (Master) > Module der Wirtschafts- und Rechtswissenschaften (Master)
- Master's Programme Environmental Modelling (Master) > Mastermodule
- Master's Programme Sustainability Economics and Management (Master) > Additional Modules

Contact person:
- Module responsibility: Ralf Werner Stecking
- Authorized examiners: Die im Modul Lehrenden

Entry requirements:
With successful completion of the course, students shall:
- be aware of and be able to evaluate advanced methods of multivariate data analysis.
- be able to select adequate methods in relevant fields of application, like prediction, classification, and segmentation analysis.
- be able to run computer-aided analyses and to interpret the results properly.

Module contents:
Various methods of quantitative data analysis such as:
- Linear Regression
- Logistic Regression
- Linear Discriminant Analysis
- Principal Component Analysis
- Feature selection and evaluation methods

Reader's advisory:

Links:
Language of instruction: German
Duration (semesters): 1 Semester
Module frequency: jährlich
Module capacity: unlimited
Modullevel: MM-PB (Professionalisierungsbereichsmodul im Master)
Modulart: je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge:

Examination:
Time of examination: at the end of the semester
Type of examination: written exam or oral exam

Final exam of module:

Course type | Comment | SWS | Frequency | Workload attendance |
--- | --- | --- | --- | --- |
Lecture | | 2.00 | | 28 h |
Exercises | | 2.00 | | 28 h |

Total time of attendance for the module: 56 h
wir810 - Business and Legal English

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<td>Workload</td>
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<td>Master's Programme Business Informatics (Master) &gt; Module der Wirtschafts- und Rechtswissenschaften (Master)</td>
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**Contact person**
- Module responsibility
  - Alexander Nicolai
  - Claude Landreat-Schuster
- Authorized examiners
  - Kyra Sabine Huismann

**Entry requirements**

**Skills to be acquired in this module**

**Englisch I:**
- Allgemeine Verbesserung der aktiven und passiven Sprachfähigkeit des Englischen in allen vier Bereichen: Lesen, Schreiben, Sprechen und Hören.
- Fachspezifische Entwicklung der Zielsprache mit besonderem Fokus auf das spätere Berufsleben.
- Intensivierter Kontakt mit der englischen Fachsprache durch authentische Materialien
- Verbesserung des Kulturwissens und Sensibilisierung für anglophone Länder und Kulturen.


**Englisch II:**
- Wie bei dem Modul Englisch I, jedoch Vertiefung der fachspezifischen Sprachfähigkeit des Englischen in allen vier Bereichen: Lesen, Schreiben, Sprechen und Hören.
- Fachspezifische Entwicklung der Zielsprache mit besonderem Fokus auf das spätere Berufsleben.

**Module contents**

**Englisch I:**
- Der primäre Fokus liegt auf der Anwendung der Fachsprache aus den Bereichen Wirtschaft und Umwelt des Unternehmens. Auch politische Aspekte werden einbezogen.

**Englisch II:**
- Der primäre Fokus zielt weiterhin auf den Ausbau und die Entwicklung von Fachsprache in den Bereichen Wirtschaft und Umwelt des Unternehmens. Politische Aspekte werden ebenfalls einbezogen.

Die Dozentin, der Dozent wird - je nach Zusammensetzung und Bedürfnissen der Teilnehmergruppe - die Vertiefungsbereiche bei Beginn des Seminars festlegen.

**Reader's advisory**
- Literaturempfehlungen werden während des Unterrichts bekanntgegeben.

**Links**

**Languages of instruction**
- German, English

**Duration (semesters)**
- 1 Semester

**Module frequency**
- halbjährlich

**Module capacity**
- unlimited

**Reference text**
- Je nach Sprachniveau ist sowohl Englisch I oder Englisch II belegbar. Sollte Englisch I jedoch schon im Bachelorstudium belegt worden sein, ist ausschließlich Englisch II im Master zu belegen.
<table>
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### wir811 - Business and Legal French

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<td>Alexander Nicolai</td>
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<td>Claude Landreat-Schuster</td>
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<td>Anny Binder</td>
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<td>Skills to be acquired in this module</td>
<td>Introduction au français économique (B1-B2). Dans ce séminaire, l'étudiant acquiert des savoirs et savoir-faire concernant le monde du travail francophone. Chaque partie théorique est suivie d'une évaluation réalisée en travail collaboratif et de textes actuels.</td>
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<tr>
<td>Module contents</td>
<td>Les thèmes suivants seront traités (dans un premier temps, acquisition de notions théoriques puis textes d'application sous forme écrite ou orale) :</td>
</tr>
<tr>
<td></td>
<td>• Economie générale,</td>
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<tr>
<td></td>
<td>• Les différents types de sociétés en France,</td>
</tr>
<tr>
<td></td>
<td>• La vie dans l'entreprise,</td>
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<tr>
<td></td>
<td>• Marketing et Publicité.</td>
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| Used in course of study | Master's Programme Business Administration, Economics and Law (Master) > Mantelmodule  
|                       | Master's Programme Business Informatics (Master) > Module der Wirtschafts- und Rechtswissenschaften (Master)  
|                       | Master's Programme Sustainability Economics and Management (Master) > Basic and Accentuation Modules  |
| Contact person        |                   |
|                       | Module responsibility  
|                       | Christine Godt  
|                       | Authorized examiners  
|                       | Die im Modul Lehrenden  
|                       | Module counseling  
|                       | Ulrich Meyerholt  |
| Entry requirements    |                   |
| Skills to be acquired in this module | Building on the existing knowledge of the participants, the course will deepen knowledge of European and international law, whereby emphasis will be laid on those areas in which the dividing line between state intervention (public law) and market rights (private law) has become blurred. Students will be able to analyze contemporary regulatory techniques inherent in the multilevel system of governance and to assess them from an interdisciplinary (economic and legal) perspective. |
| Module contents       | The module comprises two courses, one of which will be taught by PD Dr. Meyerholt, and the other together with Prof. Godt. The first course deals with selected issues in environmental law. With the general structure of environmental law as a point of departure, the course content will be taught in a holistic manner that will also incorporate the leading decisions of the higher courts. The second course takes into consideration intra-disciplinary environmental law as situated between public and private economic law, whereby special focus will be laid on the European and international dimensions. |
| Links                 |                   |
| Language of instruction | German            |
| Duration (semesters)  | 1 Semester        |
| Module frequency      | jährlich          |
| Module capacity       | unlimited         |
| Modullevel            | ---               |
| Modulart              | je nach Studiengang Pflicht oder Wahlpflicht |
| Lern-/Lehrform / Type of program |                   |
| Vorkenntnisse / Previous knowledge |                   |
| Examination           | Time of examination  
|                       | Type of examination  
| Final exam of module  | during term        
|                       | oral presentation and written script  |
| Course type           | Lecture            |
| SWS                   | 4.00               |
| Frequency             | SuSe or WiSe      |
| Workload attendance   | 56 h               |
wir814 - Strategic Management

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**Used in course of study**
- Master's Programme Business Administration, Economics and Law (Master) > Mantelmodule
- Master's Programme Business Administration, Economics and Law (Master) > Schwerpunkt "China - Wirtschaft und Sprache" (CHI) - Kernmodule
- Master's Programme Business Informatics (Master) > Module der Wirtschafts- und Rechtswissenschaften (Master)

**Contact person**
- Module responsibility
  - Jörn Hoppmann
- Authorized examiners
  - Die im Modul Lehrenden

**Entry requirements**
- Keine

**Skills to be acquired in this module**
- Students...
  - Know advanced theoretical concepts, research streams, and frameworks of in the field of Strategic Management
  - Understand the links between different theories and are able to critically question them
  - Can apply theories to understand and interpret organizational dynamics in daily life
  - Are able to develop solutions for concrete practical challenges in companies in the context of Strategic Management based on the concepts and frameworks they have learned
  - Can put the newly acquired knowledge into a broader context, so it can be deepened in the further professional life

**Module contents**
The course offers an overview of advanced concepts and frameworks in the field of Strategic Management. At the beginning, the course will provide a brief introduction into the historical development, goals, and research streams of the field. In this context, important terms, methods, and philosophical approaches of (management) research will be clarified. Subsequently, students form groups to analyze selected scientific articles with regard to their theoretical relevance and practical implications. Theoretical topics that will be covered in depth are:
1. Top Management Teams, Upper Echelons and Corporate Governance
2. Resource- and Capability-based Approaches
4. Institutional Theory, Institutional Work/Entrepreneurship and Social Movements
5. Organizational Cognition, Identity, and Framing
6. Organizational Learning and Ambidexterity
7. Organizational networks and ecosystems
The results of the analysis will be summarized in a seminar thesis, presented in class, and discussed with the other students. The main goal of the course is to equip students with advanced concepts, which allow them to understand organizational dynamics, question established practices in firms, and develop new solutions that go beyond the application of standard instruments.

**Reader's advisory**

**Links**
- Language of instruction: German
- Duration (semesters): 1 Semester
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**Lern-/Lehrform / Type of program**

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<tbody>
<tr>
<td>Zum Ende des Semesters</td>
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**Final exam of module**

<table>
<thead>
<tr>
<th>Kursart</th>
<th>Kommentar</th>
<th>SWS</th>
<th>Frequenz</th>
<th>Leistungsbereitschaft</th>
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<tr>
<td>Vortrag</td>
<td></td>
<td>2.00</td>
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<td>28 h</td>
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<tr>
<td>Seminar</td>
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**Total time of attendance for the module**

<table>
<thead>
<tr>
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<th>56 h</th>
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</table>
### wir827 - Business and Societal Change

**Module label**  
Business and Societal Change

**Module code**  
wir827

**Credit points**  
6.0 KP

**Workload**  
180 h

**Used in course of study**
- Master's Programme Business Administration, Economics and Law (Master) > Schwerpunkt "Führung von Unternehmen und gesellschaftliche Organisationen" (FUGO)
- Master's Programme Business Administration, Economics and Law (Master) > Schwerpunkt "Management, Entrepreneurship, Controlling" (ManECo)
- Master's Programme Business Informatics (Master) > Module der Wirtschafts- und Rechtswissenschaften (Master)

**Contact person**

- Module responsibility
  - Jörn Hoppmann
- Authorized examiners
  - Die im Modul Lehrenden

**Entry requirements**

**Skills to be acquired in this module**
- Have an overview of the most important societal trends, such as digitization, globalization, demographic change, gender equality, income inequality, and resource depletion
- Know important theoretical approaches that help understand societal change from a firm perspective
- Are able to analyze societal trends and critically evaluate their pros and cons
- Understand the impact of societal change on businesses as well as the role of businesses as drivers of societal change
- Are able to derive recommendations for firms and policy makers based on a thorough analysis of trends

**Module contents**
The course centers on the questions of how societal change affects firms and how firms, in turn, contribute to societal change. Toward this end, the first part of the course introduces several important theoretical approaches that help understand societal change from a business perspective, such as Institutional Entrepreneurship or Corporate Political Activity. In addition, students will get to know tools firms use to analyze societal trends. In the second part of the course, students will then form groups to analyze the dynamics, drivers, and consequences of important societal trends with a focus on the role of and implications for firms. Trends, which will be covered in this context, are digitization, automation, mediatisation, connectivity, globalization, urbanisation, individualism, democratisation, social inclusion, gender equality, commercialism, privatization, materialism, income inequality, demographical change, climate change, and resource depletion. The results of the analysis will be presented in class, discussed with the other students, and summarized in a seminar thesis. The main goal of the course is to allow students to derive strategic recommendations for managers and policy makers based on a sound analysis of societal developments.

**Reader's advisory**

**Links**

**Language of instruction**  
German

**Duration (semesters)**  
1 Semester

**Module frequency**  
jährlich

**Module capacity**  
unlimited

**Modullevel**  
BC (Basiscurriculum / Base curriculum)

**Modulart**  
je nach Studiengang Pflicht oder Wahlpflicht

**Lern-/Lehrform / Type of program**  
Vorkenntnisse / Previous knowledge

<table>
<thead>
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<th>Type of examination</th>
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<td>Thesis to be handed in at the end of semester</td>
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**Course type**  
Seminar

**SWS**  
4.00

**Frequency**  
SuSe
| Workload attendance | 56 h |
The module "CSR" provides an overview of the debates on the social responsibility of firms. The first session will briefly introduce the historical debate on Corporate Social Responsibility and Corporate Sustainability and delineate important concepts. The following sessions will use concrete company case studies as a basis for a critical discussion of central questions in the context of corporate social responsibility and sustainability. Questions that will be discussed are, amongst others:

- How can one determine whether a firm acts in a socially and ecologically sustainable way?
- Which factors drive and hinder the diffusion of socially and ecologically superior solutions and companies in the market?
- In how far is there a conflict between firm and market growth on the one hand and sustainability on the other hand?
- Which possibilities does a company have to deal with conflicts between social/ecological and economic goals?
- How can existing firms and value chains be transformed toward sustainability?
- How does the ownership and financial structure of firms influence their strategy toward sustainability?
- In how far can cooperation and partnerships between organizations help integrate social and ecological aspects in firms?

In addition to discussing these questions by drawing on company case studies, students will be introduced to the corresponding theoretical concepts and frameworks in the academic literature. Also, students will be given the opportunity to test different strategies for implementing sustainability in organizations during a simulation, which allows them to gain first-hand insights into the emerging challenges. Toward the end of the course, students will apply and deepen the knowledge they have gathered over the semester by writing a seminar thesis.

Reader's advisory


Markard, J., Raven, R., & Truffer, B. (2012). Sustainability transitions: An emerging field of research and its
prospects. Research Policy, 41(6), 955-967.

<table>
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<tbody>
<tr>
<td>Language of instruction</td>
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<tr>
<td>Duration (semesters)</td>
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<tr>
<td>Module frequency</td>
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<tr>
<td>Module capacity</td>
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<td>Module level</td>
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<td>Modulart</td>
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<tbody>
<tr>
<td>Vorkenntnisse / Previous knowledge</td>
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<tr>
<td>Examination</td>
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<td>Final exam of module</td>
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<table>
<thead>
<tr>
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<th>Frequency</th>
<th>Workload attendance</th>
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<td></td>
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<tr>
<td>Seminar</td>
<td></td>
<td>2.00</td>
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<td>28 h</td>
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</table>

| Total time of attendance for the module | 56 h    |
wir832 - Innovation Management

Module label: Innovation Management

Module code: wir832

Credit points: 6.0 KP

Workload: 180 h

Used in course of study:
- Master's Programme Business Administration, Economics and Law (Master) > Schwerpunkt "Führung von Unternehmen und gesellschaftliche Organisationen" (FUGO)
- Master's Programme Business Informatics (Master) > Module der Wirtschafts- und Rechtswissenschaften (Master)
- Master's Programme Sustainability Economics and Management (Master) > Additional Modules

Contact person:
- Module responsibility: Christian Busse
- Authorized examiners: Die im Modul Lehrenden

Entry requirements:

Skills to be acquired in this module:
In today's highly dynamic business environment, innovation is the key to the success of most firms. Moreover, technological and organizational innovations represent valuable instruments for achieving progress toward sustainable development. Against this background, this module familiarizes students with the tools and processes for managing innovation and for developing overall more innovative firms. The module comprises a lecture and a seminar. In the lecture, students become acquainted with the drivers to and role of innovation; they learn about designing innovative firms and developing innovation strategies; they get to know the different sources of innovation; they familiarize themselves with the methods for choosing between alternative planned innovations; they learn how innovation is implemented; and they understand how innovation benefits are exploited. The accompanying seminar is supposed to familiarize the students with select advanced topics surrounding the management of innovation. Moreover, the students train their skills in working in teams, in working with scientific literature, in academic writing, and in presenting in front of a large audience.

Module contents:
Organizational change, creative destruction, ambidexterity, exploration, exploitation, absorptive capacity, sustainability transitions, innovation models, innovation networks, innovation strategy, innovation ecosystems, diffusion of innovations, organizational routines, entrepreneurship, new ventures, etc.

Reader's advisory:

Links:

Language of instruction: German

Duration (semesters): 1 Semester

Module frequency: unlimited

Reference text:
This module is offered in the winter term. For a more detailed description of course content and organization, please note the syllabus that will be made available via Stud.IP before the beginning of the course.

Modullevel: MM (Mastermodul / Master module)

Modulart: Wahlpflicht / Elective

Lern-/Lehrform / Type of program:

Vorkenntnisse / Previous knowledge:

Examination:

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<th>Frequency</th>
<th>Workload attendance</th>
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<tr>
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<td>Seminar</td>
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<td>2.00</td>
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Total time of attendance for the module: 56 h
wir842 - Banking

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<tbody>
<tr>
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<td>wir842</td>
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<tr>
<td>Credit points</td>
<td>6.0 KP</td>
</tr>
<tr>
<td>Workload</td>
<td>180 h</td>
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</table>
| Used in course of study | - Master of Education Programme (Vocational and Business Education) Economics and Business Administration (Master of Education) > Mastermodule
- Master's Programme Business Administration, Economics and Law (Master) > Schwerpunkt "Auditing, Finance, Taxation" (AFT)
- Master's Programme Business Administration, Economics and Law (Master) > Schwerpunkt "Recht der Wirtschaft" (RdW)
- Master's Programme Business Informatics (Master) > Module der Wirtschafts- und Rechtswissenschaften (Master)

Contact person

Module responsibility
- Jörg Prokop

Authorized examiners
- Die im Modul Lehrenden

Entry requirements

Skills to be acquired in this module
Upon completion of the module students will be able to explain the role financial institutions play in financial markets based on economic theory. They will have a sound knowledge of institutional and regulatory conditions under which financial institutions operate today, and they will be able to critically assess respective developments in the financial sector. Moreover, they will have developed a sound understanding of how banks are managed in a competitive environment.

Module contents
We will discuss theoretical foundations of financial intermediation in general, and of banking in particular as well as the economic, institutional, and regulatory context in which financial institutions operate today. Moreover, we will cover selected topics in the area of bank management and bank accounting.

Reader's advisory
- Berger / Molyneux / Wilson (Eds.): The Oxford Handbook of Banking, latest edition, Oxford University Press
- Tolkmitt: Neue Bankbetriebslehre, latest edition, Gabler

Further readings may be announced during the course.

Links
http://www.uni-oldenburg.de/fiwi_bibl/

Languages of instruction
German, English

Duration (semesters)
1 Semester

Module frequency
jährlich

Module capacity
unlimited

Modullevel
MM (Mastermodul / Master module)

Modulart
Wahlpflicht / Elective

Vorkenntnisse / Previous knowledge

Examination | Time of examination | Type of examination
--- | --- | ---
Final exam of module | typically at the end of the semester; potential midterm examination dates will be announced in the first session | 1 term paper (Hausarbeit) or 1 written exam (Klausur) or 1 oral exam (mündliche Prüfung) or 1 Portfolio

Course type
Lecture

SWS
4.00

Frequency

Workload attendance
56 h
wir848 - Basic theories of Organisation and Human Resources

Module label: Basic theories of Organisation and Human Resources
Module code: wir848
Credit points: 6.0 KP
Workload: 180 h

Used in course of study:
- Master's Programme Business Administration, Economics and Law (Master) > Schwerpunkt "Management, Entrepreneurship, Controlling" (ManECo)
- Master's Programme Business Informatics (Master) > Module der Wirtschafts- und Rechtswissenschaften (Master)

Contact person:
Module responsibility: Thomas Breisig
Authorized examiners: Thomas Breisig, Jonathan Gilbert
Module counseling: Jonathan Gilbert

Entry requirements:

Skills to be acquired in this module:
Students get to know central theories of organisation and human resources (HR). They are empowered to apply theories in order to explain practical phenomena and to solve practical problems. The ability to put on different "theory glasses" while observing and analysing various organisational and HR practices is fostered. Students learn to deal with different theories in a conscious and critical way, especially through case studies, group work and discussions.

Upon completion of the module, students will:
- be able to explain various classic and modern theories of organisation and human resource theories, differentiate them and reflect them critically;
- be able to apply the theoretical and abstract ways of thinking and perception so as to transfer them on operational decisions;
- develop skills of self-reflection (supported by the technical and didactical concepts).

Module contents:
Students receive deeper insights into classical and modern theories of organisation and human resource, including:
- Weber's theory of bureaucracy
- Taylor's principles of Scientific Management
- Human Relations approach
- Behavioural decision theory
- Situational approach
- Micro-political approaches
- New Institutional Economics
- Theories of motivation
- Theories of leadership

The presentations and discussions within the seminars also offer possibilities to deepen and broaden these topics according to the student's interest and latest developments in theory and practice.

Reader's advisory:

Further literature will be announced during the semester according to the particular lecture/seminar content.

Links:
www.uol.de/orgpers

Language of instruction: German
Duration (semesters): 1 Semester
Module frequency: jährlich
Module capacity: unlimited
Reference text:
Die Veranstaltung ist im Master Wirtschafts- und Rechtswissenschaften in den Schwerpunkten ManECo und FUGO verwendbar.

Modullevel: ---
Modular: Wahlpflicht / Elective

Lern-/Lehrform / Type of program
## Previous Knowledge

Praktische Erfahrungen; Grundkenntnisse der Betriebswirtschaftslehre, insbes. in den Bereichen Organisation und Human Resource Management

<table>
<thead>
<tr>
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<th>Time of examination</th>
<th>Type of examination</th>
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<tbody>
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<td>Seminar paper or presentation or written exam or oral exam or portfolio or project report (will be determined and announced at the beginning of the semester by the lecturer)</td>
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**Total time of attendance for the module**: 56 h
wir852 - International Management

Module label: International Management

Module code: wir852

Credit points: 6.0 KP

Workload: 180 h

Used in course of study:
- Master's Programme Business Administration, Economics and Law (Master) > Schwerpunkt "Führung von Unternehmen und gesellschaftliche Organisationen" (FUGO)
- Master's Programme Business Administration, Economics and Law (Master) > Schwerpunkt "Management, Entrepreneurship, Controlling" (ManECo)
- Master's Programme Business Administration, Economics and Law (Master) > Schwerpunkt "Transnational Economics and Law" (TEL)
- Master's Programme Business Informatics (Master) > Module der Wirtschafts- und Rechtswissenschaften (Master)

Contact person:
Module responsibility: Mareike Junker-Michel

Authorized examiners:
- Die im Modul Lehrenden

Entry requirements: keine

Skills to be acquired in this module:
The module consists of lecture as well as seminar elements which interlink with each other on a technical and didactical level. By alternating lectures, discussions, and training elements, students get to know the theoretical basics as well as the practical relevance of the module topics. They get the chance to integrate themselves, their theoretical knowledge and previous experiences, and to exchange views with the other students and the lecturer. Different teaching and learning methods support the student’s professional, methodological, social-communicative, and personal competences, e.g. via station learning, role plays and debates, thesis discussions and case study analysis. They work within the entire group as well as small groups.

Attending the course, students:
- develop a solid knowledge of this broad subject and are able to relate the various scientific and practical findings with each other and also understand them on a macro-level;
- understand the complex issues, challenges and fields of action in International Management;
- are able to analyse, interpret and manage international economic and business issues within heterogeneous (above all cultural) fields of stakeholders and environments;
- can effectively analyse and apply the strategic, structural and cultural instruments in International Management according to the specific practical context;
- develop skills of self-reflection (supported by the technical and didactical concepts) and are able to press their point within the scientific discussion;
- are able to locate a specific research question within the scientific discussion in the field of International Management and to interlink, reflect and evaluate it accordingly.

Module contents:
Students gain theoretical as well as practical insights in the backgrounds and specific characteristics of International Management. A specific focus will (as a last point) be laid on international Human Resource Management as it provides notably relevant issues in international business administration.

Students deal with foundations, challenges and possible fields of action within the following topics:

- Economic internationalisation and the international firm
  - Characteristics, development and relevance
  - Terminological differentiation and attribution
  - Research and explanatory approaches
- Environment and orientation of international corporations
  - Culture and management
  - Fields and forms of strategy
  - Organisation by structure and processes
  - Responsibility and public affairs
- Relevance of and fields in international Human Resource Management
  - Requirements and organisation of the central HR areas
  - Recruitment and selection
  - Expatriation of employees
  - Intercultural management
  - Social management

The presentations and discussions also offer possibilities to deepen and broaden these topics according to the students interests and latest developments in theory and practice.
### Reader's advisory


Further literature will be announced during the semester according to the particular lecture/seminar content.

### Links

www.uol.de/orgpers

### Language of instruction

German

### Duration (semesters)

1 Semester

### Module frequency

jährlich

### Module capacity

unlimited

### Modullevel

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### Modulart

Wahlpflicht / Elective

### Lern-/Lehrform / Type of program

Grundlagenmodule im Bereich Betriebswirtschaftslehre, insbes. Organisation und Personal

### Examination

<table>
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<th>Final exam of module</th>
<th>Time of examination</th>
<th>Type of examination</th>
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<tbody>
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<td>Depending on the type of examination during the lecture period, at the end of the lecture period or at the end of the semester</td>
<td>Seminar paper or presentation or written exam or oral exam or portfolio or project report (will be fixed and announced at the beginning of the semester by the lecturer)</td>
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### Course type

<table>
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<th>Frequency</th>
<th>Workload attendance</th>
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<td>Seminar</td>
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### Total time of attendance for the module

56 h
wir857 - Law of Media and Telecommunication

Module label
Law of Media and Telecommunication

Module code
wir857

Credit points
6.0 KP

Workload
180 h

Used in course of study
- Master's Programme Business Administration, Economics and Law (Master) > Schwerpunkt "Recht der Wirtschaft" (RdW)
- Master's Programme Business Informatics (Master) > Module der Wirtschafts- und Rechtswissenschaften (Master)

Contact person
Module responsibility
- Volker Boehme-Neßler

Authorized examiners
- Die im Modul Lehrenden

Entry requirements

Skills to be acquired in this module
The students:
- have in-depth insights into the economic conditions of media production, distribution and exploitation.
- know the legal basis and framework conditions of media production, media presentation and mediation (e.g. copyrights, performance rights, distribution of media).
- bring together economic and legal dimensions of media work.
- know the economic and legal framework conditions of media institutions (e.g. television, radio, media mediation).

Module contents
This module is about making a connection of the theoretical and practical acquired aesthetic competences with the economic and legal framework conditions. In the sense of professionalisation, prospective media producers and mediators should learn to assess their own future activities under economic and legal conditions.

Reader's advisory
Current case law and:
- Fechner, Medienrecht, 19.Aufl. 2018
- Petersen, Medienrecht, 2010.

Links
http://www.integrated-media.de/

Language of instruction
German

Duration (semesters)
1 Semester

Module frequency
jährlich

Module capacity
unlimited

Modulelevel
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Modulart
je nach Studiengang Pflicht oder Wahlpflicht

Vorkenntnisse / Previous knowledge

Examination
Time of examination
At the end of the term
Type of examination
Presentation with term paper

Course type
Lecture

SWS
4.00

Frequency
SuSe

Workload attendance
56 h
### wir860 - Data Protection Law

<table>
<thead>
<tr>
<th>Module label</th>
<th>Data Protection Law</th>
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<tbody>
<tr>
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<td>wir860</td>
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<td>6.0 KP</td>
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<td>Workload</td>
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| Used in course of study    | Master's Programme Business Administration, Economics and Law (Master) > Schwerpunkt "Recht der Wirtschaft" (RdW)
|                            | Master's Programme Business Informatics (Master) > Module der Wirtschafts- und Rechtswissenschaften (Master) |
| Contact person             | Module responsibility                                    |
|                            | - Jürgen Taeger                                         |
|                            | Authorized examiners                                    |
|                            | - Die im Modul Lehrenden                                |
|                            | Module counseling                                       |
|                            | - Sebastian Louven                                      |
| Skills to be acquired      | Upon completion of the module, students will be able to: |
| this module               | - recognize simple data protection incidents.           |
|                            | - apply existing protection mechanisms.                 |
|                            | - implement projects in accordance with the law.        |
|                            | - discuss and defend their plans in front of others.    |
| Module contents            | The module gives an overview on data protection laws. Basic knowledge of data protection regulations (DSGVO; BDSG) and existing protection mechanisms is imparted. Within the framework of the seminar, the discussed topics will be deepened with the help of seminar papers and individual aspects will be discussed in more detail. The event will highlight the new informational structures in modern society and their effects on data protection and data security. Questions concerning general personal rights, freedom of information, IT security and relevant criminal law regulations will be discussed on the basis of examples and legally provided protection mechanisms as well as the tasks of supervisory authorities will be discussed. In particular, the most important decisions on data protection will be covered in detail during the seminar. At the seminar, students will have the opportunity to prepare in-depth seminar papers on the various topics, which will then be discussed with all participants. |
| Reader's advisory          | Kühling/Klar/Sackmann, Datenschutzrecht, 2018. Further literature references will be given in the lecture. |
| Links                      | http://www.wto.org/                                     |
| Language of instruction    | German                                                   |
| Duration (semesters)       | 1 Semester                                               |
| Module frequency           | jährlich                                                 |
| Module capacity            | unlimited                                                |
| Modullevel                 | ---                                                     |
| Modularität                | je nach Studiengang Pflicht oder Wahlpflicht             |
| Lern-Lehrform / Type of program |                                        |
| Vorkenntnisse / Previous knowledge |                                                      |

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<tbody>
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<td>Final exam of module</td>
<td>typically 6 weeks after your presentation</td>
<td>Seminar paper and presentation or Term paper or Oral exam</td>
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<th>Comment</th>
<th>SWS</th>
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<th>Workload attendance</th>
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<td>28 h</td>
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<td>Seminar</td>
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| Total time of attendance for the module | 56 h |
<p><strong>wir875 - Forecasting Methods</strong></p>

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</tr>
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<td>6.0 KP</td>
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<td>Workload</td>
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</table>
| Used in course of study           | Master's Programme Business Administration, Economics and Law (Master) > Schwerpunkt "Volkswirtschaftslehre" (VWL)  
<p>|                                   | Master's Programme Business Informatics (Master) &gt; Module der Wirtschafts- und Rechtswissenschaften (Master) |
| Contact person                    | Module responsibility                                   |
|                                   |   • Ralf Werner Stecking                                  |
|                                   | Authorized examiners                                     |
|                                   |   • Die im Modul Lehrenden                                |
| Entry requirements                |                                                          |
| Skills to be acquired in this module | With successful completion of the course, students shall: |
|                                   |   • be aware of and be able to evaluate quantitative forecasting methods, |
|                                   |   • be able to select adequate methods in relevant fields of application, like time series and classification analysis, |
|                                   |   • be able to run computer-aided analyses and to interpret the results properly. |
| Module contents                   | Various aspects of quantitative forecasting methods such as: |
|                                   |   • Time series components,                              |
|                                   |   • Trend and seasonal methods,                          |
|                                   |   • Stationarity,                                         |
|                                   |   • Multivariate forecasting methods,                    |
|                                   |   • Autoregressive and moving average processes,         |
|                                   |   • Box-Jenkins method.                                  |
| Links                             |                                                          |
| Language of instruction           | German                                                   |
| Duration (semesters)              | 1 Semester                                               |
| Module frequency                  | halbjährlich                                             |
| Module capacity                   | unlimited                                                |
| Modulart                          | je nach Studiengang Pflicht oder Wahlpflicht              |
| Lern-/Lehrform / Type of program  |                                                          |
| Vorkenntnisse / Previous knowledge |                                                          |</p>
<table>
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<th>Examination</th>
<th>Time of examination</th>
<th>Type of examination</th>
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<tr>
<td>Final exam of module</td>
<td>end of semester</td>
<td>written exam or oral exam or term paper or seminar paper and presentation</td>
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<th>Workload attendance</th>
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<td>2.00</td>
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**Total time of attendance for the module**

56 h
wir904 - Environmental and Sustainability Policies

Module label
Environmental and Sustainability Policies

Module code
wir904

Credit points
6.0 KP

Workload
180 h

Used in course of study
- Master's Programme Business Informatics (Master) > Module der Wirtschafts- und Rechtswissenschaften (Master)
- Master's Programme Sustainability Economics and Management (Master) > Basic and Accentuation Modules

Contact person
Module responsibility
- Bernd Siebenhüner

Authorized examiners
- Die im Modul Lehrenden

Module counseling
- Bernd Siebenhüner
- Alkje Wegner
- Werner Joachim Müller

Entry requirements
Skills to be acquired in this module
students:
- have basic information about national and european environmental and sustainability governance
- describe the history of national and european environmental and sustainability governance
- reflect upon central principles, instruments, players and strategies in environmental and sustainability governance
- analyze selected topics of environmental and sustainability governance based upon central principles, instruments, players and strategies

Module contents
- Introduction to environmental politics - Politics, Political Science, Policy Analysis
- Environment – Terms and Concepts - Historical Foundations of Environmental Politics
- Actors, institutions and governance structures; Actors in Environmental Policy
- Socio-ecological systems framework
- Environmental Policy in Germany
- Environmental Policy in the European Union
- Steering and principles in environmental policy
- Instruments in environmental policy
- Policy process and environmental policy
- Multi-level and reflexive governance - Multi-level governance
- International environmental governance
- Science-Policy Interface

Reader's advisory
Aden, Hartmut (2012): Umweltpolitik, Wiesbaden: VS-Verlag

Links
https://www.uni-oldenburg.de/wire/

Languages of instruction
German, English

Duration (semesters)
1 Semester

Module frequency
halbjährlich

Module capacity
unlimited

Modullevel
BM (Basismodul / Base)

Modulart
je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge
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<th>Examination</th>
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<tr>
<td>Workload attendance</td>
<td>56 h</td>
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</table>
wir885 - Operations and Supply Chain Management

Module label: Operations and Supply Chain Management
Module code: wir885
Credit points: 6.0 KP
Workload: 180 h

Used in course of study:
- Master's Programme Business Administration, Economics and Law (Master) > Schwerpunkt "Führung von Unternehmen und gesellschaftliche Organisationen" (FUGO)
- Master's Programme Business Informatics (Master) > Module der Wirtschafts- und Rechtswissenschaften (Master)

Contact person:
- Module responsibility: Christian Busse
- Authorized examiners: Die im Modul Lehrenden

Entry requirements:
Skills to be acquired in this module:
The lecture pertaining to the module focuses on the development and critical discussion of formal analytical models for modelling and optimizing problems in operations and supply chain management. The aim is to provide students with the skills they need to analyze value-added processes in reality and not only to understand them, but ideally also improve them. The accompanying seminar, held in English, serves to deepen and critically examine the topics from the lecture. Supplementary to the lecture, the seminar deals with conceptual and empirical research and cases. Hereby, students get to know scientific discourses on practically relevant issues that are difficult to model. Furthermore, there will be ample training in scientific work, in teamwork and in presentations in front of large groups.

Module contents:
- Introduction to Operations Management
- Demand Forecasting
- Location Planning
- Process Design
- Inventory Management
- Production Planning
- Scheduling
- Supply Chain Management
- Revenue Management
- Behavioral Operations Management

Reader's advisory:

Links:
Languages of instruction: German, English
Duration (semesters): 1 Semester
Module frequency: jährlich (yearly)
Module capacity: unlimited
Reference text:
The module takes place in the winter semester. Please refer to the syllabus available via Stud.IP for a more detailed description of content and procedure.

Modullevel: SPM (Schwerpunktmstud / Main emphasis)
Modulart: Wahlpflicht / Elective

Lern-/Lehrform / Type of program:
Vorkenntnisse / Previous knowledge:

Examination:

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<tr>
<th>Type of examination</th>
<th>Time of examination</th>
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<th>SWS</th>
<th>Frequency</th>
<th>Workload attendance</th>
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<td>Portfolio, likely consisting of short test and short presentation</td>
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<th>Frequency</th>
<th>Workload attendance</th>
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<tr>
<td>Lecture</td>
<td></td>
<td>2.00</td>
<td>SuSe and WiSe</td>
<td>28 h</td>
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<tr>
<td>Seminar or exercise</td>
<td></td>
<td>2.00</td>
<td>SuSe and WiSe</td>
<td>28 h</td>
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Total time of attendance for the module: 56 h
wir041 - Introduction to economics

Module label: Introduction to economics
Module code: wir041
Credit points: 6.0 KP
Workload: 180 h

Used in course of study:
- Bachelor's Programme Business Administration and Law (Bachelor) > Akzentsetzungsmodul
- Bachelor's Programme Business Informatics (Bachelor) > Akzentsetzungsmodul
- Bachelor's Programme Economics and Business Administration (Bachelor) > Basismodule
- Bachelor's Programme Mathematics (Bachelor) > Nebenfachmodule
- Bachelor's Programme Sustainability Economics (Bachelor) > Basismodule
- Dual-Subject Bachelor's Programme Economics and Business Administration (Bachelor) > Basismodule
- Master's Programme Business Informatics (Master) > Module der Wirtschafts- und Rechtswissenschaften (Master)

Contact person:
- Module responsibility: Christoph Böhringer
- Module counseling:
  - Dennis Drews
  - Ulrich Scheele
  - Anelise Rahmeier Seyffarth
  - Jan Schneider

Entry requirements: none

Skills to be acquired in this module:
By the end of the course, students shall:

- be aware of the fundamental principles of economics
- be able to approach basic questions of economic policy by applying concise economic reasoning and graphical intuition.

Module contents:
The course introduces students to economic thinking and gives an elementary overview of the fundamental themes in economics. Key causal relationships will be verbally, analytically and graphically elucidated and underpinned with real-world examples.

Main contents:
- Introduction to economic thinking;
- Explanation of basic concepts of economic theory;
- Economic cycle and national product;
- Interdependence and trade;
- Functioning and efficiency of markets;
- Market failures and government activity;
- Firms behavior in markets with diverse structures;
- Foundations of game theory.

Reader's advisory:

Links:
http://www.vwl.uni-oldenburg.de/

Language of instruction: German
Duration (semesters): 1 Semester
Module frequency: jährlich
Module capacity: unlimited
Reference text:
The module consists of lectures and tutorials. The contents of the course will be taught in the lecture. The tutorial sessions are aimed at solving problem sets or exercises to deepen students understanding. Lecture notes and other relevant materials will be uploaded to the learning management system (Stud IP).

Modullevel: ---
Modular: je nach Studiengang Pflicht oder Wahlpflicht

Vorkenntnisse / Previous knowledge:
<table>
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<tr>
<th>Examination</th>
<th>Time of examination</th>
<th>Type of examination</th>
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</thead>
<tbody>
<tr>
<td>Final exam of module</td>
<td>end of semester</td>
<td>written exam; voluntary contributions that improve grades may undertaken as ‘portfolio-presentations’ during tutorials</td>
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<table>
<thead>
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<th>SWS</th>
<th>Frequency</th>
<th>Workload attendance</th>
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<tr>
<td>Lecture</td>
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<td>42 h</td>
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<tr>
<td>Tutorial</td>
<td></td>
<td>1.00</td>
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<td>14 h</td>
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**Total time of attendance for the module**: 56 h
### Module label
Managerial Accounting

### Module code
wir032

### Credit points
6.0 KP

### Workload
180 h

### Used in course of study
- Bachelor's Programme Business Administration and Law (Bachelor) > Akzentsetzungsmodule
- Bachelor's Programme Business Informatics (Bachelor) > Akzentsetzungsmodule
- Bachelor's Programme Economics and Business Administration (Bachelor) > Basismodule
- Bachelor's Programme Mathematics (Bachelor) > Nebenfachmodule
- Dual-Subject Bachelor's Programme Economics and Business Administration (Bachelor) > Basismodule
- Master's Programme Business Informatics (Master) > Module der Wirtschafts- und Rechtswissenschaften (Master)

### Contact person
Module responsibility
- Bernd Siebenhüner

Authorized examiners
- Die im Modul Lehrenden

### Entry requirements
**Skills to be acquired in this module**
This course is an introduction to the use of accounting information by managers for decision-making, planning and control. It is designed to equip students with the concepts and techniques of management accounting for identifying and resolving strategic issues faced by managers in various business contexts.

**Module contents**
See leading textbook

**Reader's advisory**
Seal et al., Management Accounting, Mcgraw-Hill Education Ltd, 5. Edition

**Links**
http://www.uni-oldenburg.de/accounting/

**Language of instruction**
English

**Duration (semesters)**
1 Semester

**Module frequency**
jährlich

**Module capacity**
unlimited

**Reference text**
Vorlesung auf Englisch

**Module level**
---

**Modulart**
je nach Studiengang Pflicht oder Wahlpflicht

**Vorkenntnisse / Previous knowledge**
Erste Erfahrungen mit Konzepten der Kostenrechnung.

### Examination

<table>
<thead>
<tr>
<th>Examination</th>
<th>Time of examination</th>
<th>Type of examination</th>
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</thead>
<tbody>
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<td>end of term</td>
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### Final exam of module

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<th>SWS</th>
<th>Frequency</th>
<th>Workload attendance</th>
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</thead>
<tbody>
<tr>
<td>Lecture</td>
<td></td>
<td>2.00</td>
<td></td>
<td>28 h</td>
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<tr>
<td>Tutorial</td>
<td></td>
<td>2.00</td>
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<td>28 h</td>
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### Total time of attendance for the module
56 h
wir060 - Financial Accounting

<table>
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<tbody>
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<td>Module code</td>
<td>wir060</td>
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<tr>
<td>Credit points</td>
<td>6.0 KP</td>
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<td>Workload</td>
<td>180 h</td>
</tr>
<tr>
<td>Used in course of study</td>
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<tr>
<td>Bachelor's Programme Business Administration and Law (Bachelor) &gt; Aufbaumodule</td>
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</tr>
<tr>
<td>Bachelor's Programme Business Informatics (Bachelor) &gt; Akzentsetzungsmodule</td>
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<tr>
<td>Bachelor's Programme Economics and Business Administration (Bachelor) &gt; Aufbaumodule</td>
<td></td>
</tr>
<tr>
<td>Bachelor's Programme Mathematics (Bachelor) &gt; Nebenfachmodule</td>
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<tr>
<td>Dual-Subject Bachelor's Programme Economics and Business Administration (Bachelor) &gt; Aufbaumodule</td>
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<tr>
<td>Master's Programme Business Informatics (Master) &gt; Module der Wirtschafts- und Rechtswissenschaften (Master)</td>
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</table>

Contact person

Module responsibility
- Bernd Siebenhüner

Authorized examiners
- Die im Modul Lehrenden

Entry requirements

none

Skills to be acquired in this module

- The students obtain knowledge on IFRS accounting in general and specific topics such as financial instruments, intangible assets and provisions;
- understand the framework of IFRS;
- understand the international focus and necessity of IFRS;
- obtain knowledge on IFRS from both a legal and economic perspective.

Module contents

This module is based on accounting and annual financial statement, while focusing exclusively on the international financial reporting standards (IFRS). In terms of content, the course covers subjects such as the most important concepts, tangible and intangible assets as well as liability items on the basis of the fundamental standards and case studies.

Reader's advisory

International Financial Reporting Standards (IFRS)
Lecture notes with additional references will be provided via the e-learning platform Stud.IP.

Links

http://www.uni-oldenburg.de/accounting/

Language of instruction

English

Duration (semesters)

1 Semester

Module frequency

jährlich

Module capacity

unlimited

Reference text

Lectures are held in English; tutorials are held in English or German.

Modulelevel

---

Modulart

je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge

Buchhaltung und Abschluss

Examination

Time of examination

Type of examination

Final exam of module

At the end of the semester; a midterm exam might be held during the semester. written exam

Course type

Comment

SWS

Frequency

Workload attendance

Lecture

2.00

written exam

28 h

Tutorial

2.00

28 h

Seminar

0 h

Total time of attendance for the module

56 h
**wir070 - Principles of Marketing**

**Module label**  
Principles of Marketing

**Module code**  
wir070

**Credit points**  
6.0 KP

**Workload**  
180 h

**Used in course of study**
- Bachelor's Programme Business Administration and Law (Bachelor) > Akzentsetzungsmodule
- Bachelor's Programme Business Informatics (Bachelor) > Akzentsetzungsmodule
- Bachelor's Programme Economics and Business Administration (Bachelor) > Aufbaumodule
- Dual-Subject Bachelor's Programme Economics and Business Administration (Bachelor) > Aufbaumodule
- Master of Education Programme (Vocational and Business Education) Economics and Business Administration (Master of Education) > Mastermodule
- Master's Programme Business Informatics (Master) > Module der Wirtschafts- und Rechtswissenschaften (Master)

**Contact person**
Module responsibility
- Thorsten Raabe

**Authorized examiners**
- Die im Modul Lehrenden

**Entry requirements**
keine

**Skills to be acquired in this module**
Upon completion of the module, students will be able to:
- recognize and provide solutions to challenges in market-oriented business management
- reflect on market-oriented business management with regard to practise, as well as related societal and ethical implications
- actively participate in scholarly marketing discourse
- build their own capacities to acquire knowledge and skills within the discipline

**Module contents**
The module focuses on the fundamentals of marketing in the sense of market-orientated management by linking philosophy and theoretical connections, as well as the necessary analytical and methodical knowledge with concrete case studies.

**Reader's advisory**

**Links**
www.uni-oldenburg.de/marketing

**Language of instruction**
German

**Duration (semesters)**
1 Semester

**Module frequency**
jährlich

**Module capacity**
unlimited

**Modullevel**
---

**Modulart**
je nach Studiengang Pflicht oder Wahlpflicht

**Lern-/Lehrform / Type of program**

**Vorkenntnisse / Previous knowledge**

**Examination**
Time of examination | Type of examination
--- | ---
end of term | written exam; voluntary contributions that improve grades may undertaken as 'portfolio-presentations' during tutorials

**Course type**
- Lecture 2.00 Frequency 28 h
- Seminar und Tutorium 2.00 WiSe 28 h

**Total time of attendance for the module**
56 h
wir082 - Corporate Finance

Module label Corporate Finance
Module code wir082
Credit points 6.0 KP
Workload 180 h

Used in course of study
- Bachelor's Programme Business Administration and Law (Bachelor) > Akzentsetzungsmodule
- Bachelor's Programme Business Informatics (Bachelor) > Akzentsetzungsmodul
- Bachelor's Programme Economics and Business Administration (Bachelor) > Akzentsetzungsmodul
- Bachelor's Programme Mathematics (Bachelor) > Nebenfachmodule
- Dual-Subject Bachelor's Programme Economics and Business Administration (Bachelor) > Aufbaumodule
- Dual-Subject Bachelor's Programme Economics and Business Administration (Bachelor) > Schwerpunkt Management und Ökonomie
- Master of Education Programme (Vocational and Business Education) Economics and Business Administration (Master of Education) > Mastermodule
- Master’s Programme Business Informatics (Master) > Module der Wirtschafts- und Rechtswissenschaften (Master)

Contact person
Module responsibility
- Jörg Prokop

Authorized examiners
- Die im Modul Lehrenden

Entry requirements
Skills to be acquired in this module
- Students
  - understand the role corporate finance plays in today’s business environment,
  - are able to make consistent investment decisions based on established financial models both under certainty and under uncertainty,
  - are able to place these models in within the broader context of economic theory, including both neoclassical theory and principal-agent theory,
  - are able to assess the limitations of these models,
  - analyze firm’s main sources of (long-term) financing.

Module contents
Course outline:
1. Introduction
2. Valuation and Capital Budgeting
3. Risk and Return
4. Long-Term Financing
This course is an introduction to corporate finance. It covers typical tools and techniques used in making investment and financing decisions, and it provides insights into their theoretical foundations. The concept of time value of money and net present value is discussed in detail, first under certainty, and then in the presence of uncertainty. We will examine the relationship between an investment’s risk and its return, and discuss ways to derive risk-adjusted cost of equity capital. In addition, the course provides insights into firms’ main sources of (long-term) financing.

The topics covered in this course are relevant for financial decision-making in various areas of business management, including operations management, marketing, and in particular corporate strategy.

Reader's advisory
Main textbook:
Hillier, Ross, Westerfield, Jaffe & Jordan, Corporate Finance, current edition, McGraw-Hill (especially chapters 1, 2, 4-10, 14).
Supplementary readings:
Berk & DeMarzo, Corporate Finance, current edition, Boston (Mass.).
Brealey, Myers & Allen, Principles of Corporate Finance, current edition, Boston (Mass.).

Links
http://www.uni-oldenburg.de/fiwi_bbl/

Language of instruction
English

Duration (semesters)
1 Semester

Module frequency
jährlich

Module capacity
unlimited

Modulart
je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program
Financial Accounting (wir060)
Statistik I (wir150)
Managerial Accounting (wir032)
### Einführung in die VWL (wir041)
### Mikroökonomische Theorie (wir120)

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<td>written exam</td>
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<th>Workload attendance</th>
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<td>28 h</td>
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<tr>
<td>Tutorial</td>
<td></td>
<td>2.00</td>
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<td>28 h</td>
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**Total time of attendance for the module**: 56 h
wir090 - Human Resource Management

<table>
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<tr>
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<tr>
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<td>6.0 KP</td>
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<td>Workload</td>
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**Used in course of study**
- Bachelor's Programme Business Administration and Law (Bachelor) > Akzentsetzungsmodul
- Bachelor's Programme Business Informatics (Bachelor) > Akzentsetzungsmodul
- Bachelor's Programme Economics and Business Administration (Bachelor) > Akzentsetzungsmodul
- Dual-Subject Bachelor's Programme Economics and Business Administration (Bachelor) > Aufbaumodule
- Dual-Subject Bachelor's Programme Economics and Business Administration (Bachelor) > Schwerpunkt Management und Ökonomie
- Master of Education Programme (Vocational and Business Education) Economics and Business Administration (Master of Education) > Mastermodule
- Master's Programme Business Informatics (Master) > Module der Wirtschafts- und Rechtswissenschaften (Master)

**Contact person**

- **Module responsibility**
  - Thomas Breisig

- **Authorized examiners**
  - Die im Modul Lehrenden

- **Module counseling**
  - Mareike Junker-Michel
  - Thomas Breisig

**Entry requirements**

- keine

**Skills to be acquired in this module**

Upon completion of the module (two complementary lectures), students will be able to:

- understand the complex issues, challenges and fields of action in organisational Human Resource (HR) Management;
- analyse, interpret and manage HR issues within heterogeneous fields of stakeholders and environments;
- effectively analyse and apply HR instruments according to the specific practical context;
- develop skills to self-reflection by dealing with theoretical as well as practical issues in HR Management and are able to press their point within the scientific discussion;
- are able to locate a specific research question within the scientific discussion in the field of Human Resource Management and to interlink, reflect and evaluate it accordingly.

By attending the non-compulsory tutorials and participating in lecture discussions, students can develop their own position on the inter-linkages between theoretical approaches and practical courses of action. Students will thus be able to identify problems, analyse them critically, and develop solutions. As they have the opportunity to work in small groups within the tutorials and to participate during lecture discussions, students may also learn to handle different points of view and discuss constructively. Overall they will be prepared for the specific requirements faced in the field of HR Management.

**Module contents**

Students develop theoretical as well as practical insights into the backgrounds and specific characteristics of “Human Resource” Management, in particular the following:

- origins and theoretical basis
- development and framework requirements
- workforce planning
- recruitment and selection
- work organisation
- working time organisation
- leadership
- performance reviews
- training and development
- compensation
- staff reduction

**Reader's advisory**


Further literature will be announced during the semester according to the particular lecture/seminar content.
<table>
<thead>
<tr>
<th>Links</th>
<th><a href="http://www.uol.de/orgpers">www.uol.de/orgpers</a></th>
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<tbody>
<tr>
<td>Language of instruction</td>
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</tr>
<tr>
<td>Duration (semesters)</td>
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</tr>
<tr>
<td>Module frequency</td>
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<td>Module capacity</td>
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</tr>
<tr>
<td>Module level</td>
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<tr>
<td>Modulart</td>
<td>je nach Studiengang Pflicht oder Wahlpflicht</td>
</tr>
<tr>
<td>Lern-/Lehrform / Type of program</td>
<td>Vorlesung</td>
</tr>
<tr>
<td>Vorkenntnisse / Previous knowledge</td>
<td>Praktische Erfahrungen im Personalbereich; Grundkenntnisse der Betriebswirtschaftslehre</td>
</tr>
<tr>
<td>Examination</td>
<td>Time of examination</td>
</tr>
<tr>
<td>Final exam of module</td>
<td>Type of examination</td>
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<td>Course type</td>
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**wir100 - Corporate Strategy**

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<tr>
<td>Workload</td>
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**Used in course of study**
- Bachelor's Programme Business Administration and Law (Bachelor) > Akzentsetzungsmodule
- Bachelor's Programme Business Informatics (Bachelor) > Akzentsetzungsmodule
- Bachelor's Programme Economics and Business Administration (Bachelor) > Studienrichtung Betriebswirtschaftslehre
- Dual-Subject Bachelor's Programme Economics and Business Administration (Bachelor) > Aufbaumodule
- Master of Education Programme (Vocational and Business Education) Economics and Business Administration (Master of Education) > Mastermodule
- Master's Programme Business Informatics (Master) > Module der Wirtschafts- und Rechtswissenschaften (Master)

**Contact person**
- Module responsibility
  - Jörn Hoppmann
- Authorized examiners
  - Die im Modul Lehrenden

**Entry requirements**
- The goal of the course is that students are able to
  - know and understand basic concepts, instruments, and theories of strategic management
  - analyze company strategies by applying conceptual frameworks
  - understand the advantages and disadvantages of common instruments and models and critically evaluate their applicability
  - independently develop strategic options and derive recommendations for their implementation in real-life settings

**Module contents**
- The course offers a comprehensive overview of the models and instruments of strategic management. The first part of the course introduces important concept and models of strategic management and discusses their application using examples from corporate practice. Central topics that are being discussed in this context are the relation between firm strategies and competitive advantage, strategy analysis, strategy formulation, strategy implementation, and strategies in the context of internationalization and innovation. In the second part of the course, students apply and deepen their knowledge by writing a thesis that analyzes the strategy of a specific company.

**Reader's advisory**

**Links**
- Language of instruction: German
- Duration (semesters): 1 Semester
- Module frequency: jährlich
- Module capacity: unlimited
- Modullevel: ---
- Modulart: je nach Studiengang Pflicht oder Wahlpflicht
- Lern-/Lehrform / Type of program: Vorlesung mit begleitendem Tutorium
- Vorkenntnisse / Previous knowledge:

**Examination**

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**Total time of attendance for the module**: 56 h
wir130 - Civil Law and Commercial Law

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<tr>
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</table>

**Used in course of study**
- Bachelor's Programme Business Informatics (Bachelor) > Akzentsetzungsmodul
- Bachelor's Programme Economics and Business Administration (Bachelor) > Akzentsetzungsmodul
- Dual-Subject Bachelor's Programme Economics and Business Administration (Bachelor) > Schwerpunkt Berufliche Bildung
- Dual-Subject Bachelor's Programme Economics and Business Administration (Bachelor) > Schwerpunkt Management und Ökonomie
- Master's Programme Business Informatics (Master) > Module der Wirtschafts- und Rechtswissenschaften (Master)

**Contact person**
Module responsibility
- Jürgen Taeger

Authorized examiners
- Die im Modul Lehrenden

Module counseling
- Sebastian Louven

**Entry requirements**
Skills to be acquired in this module
- The students:
  - are familiar with the legal working methods, basic concepts of law in general and of civil law and commercial law in particular,
  - are familiar with the law of obligation and law of property, in particular with contract law, as well as with commercial law, which are the main fields of interest in the future professional practice,
  - are able to solve legal cases in a goal-oriented way,
  - are able to find approaches for legal problems as well as recognize liability risks and how to deal with them,
  - are in case of contract negotiations able to recognize the requirements for regulations and to evaluate consequences of regulation.

**Module contents**
In this module students will learn the basic concepts of civil law, commercial law and company law. The mail focus are the first two books and to some extent the third book of the BGB. After an introduction to the legal system and the legal sources of private law, the course will deal with the persons and objects of legal relations (legal subjects and objects). An introduction into general contract law (among others: transaction doctrine, representation, termination of obligations, arrears, defaults) follows then. Subsequently, the lecture will handle the main types of contracts of civil law, commitment and performance of transactions and ownership. The focus of the commercial law will be the determination of traits of merchandiser, the company law, the commercial register and legal liability issues as well as cross-border trade. This is followed by an introduction into company law.

Subjects of the module: Introduction into legal studies, basic principles of law, private law / public law, legal sources, general part of the civil code, law of obligations (without law of torts): contracts, type of contracts, defaults / breaches, law of terms and conditions; parts of property law. Traits of merchandiser; commercial register; Representation in commercial law (procuration, action and charging power of attorney); commercial transactions; forms and consequences of the change of the owner; commercial agents and brokers; customary law / trade terms; CISG; partnership / corporate law.

The module will enable students to evaluate complex legal relationships in the economy discretely.

**Reader's advisory**

**Links**
http://www.privatrecht.uni-oldenburg.de/

**Language of instruction**
German

**Duration (semesters)**
2 Semester

**Module capacity**
unlimited

**Module frequency**
jährlich

**Module level**
---

**Modulart**
je nach Studiengang Pflicht oder Wahlpflicht

**Lern-/Lehrform / Type of program**
keine

**Vorkenntnisse / Previous knowledge**

**Examination**
Time of examination
Type of examination
Final exam of module
end of semester
written exam
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### Module label
Entrepreneurship

### Module code
wir160

### Credit points
6.0 KP

### Workload
180 h

### Used in course of study
- Bachelor's Programme Business Administration and Law (Bachelor) > Akzentsetzungsmodule
- Bachelor's Programme Business Informatics (Bachelor) > Akzentsetzungsmodule
- Bachelor's Programme Economics and Business Administration (Bachelor) > Studienrichtung Betriebswirtschaftslehre
- Master of Education Programme (Vocational and Business Education) Economics and Business Administration (Master of Education) > Mastermodule
- Master's Programme Business Informatics (Master) > Module der Wirtschafts- und Rechtswissenschaften (Master)

### Contact person
Module responsibility
- Alexander Nicolai

Authorized examiners
- Die im Modul Lehrenden

### Entry requirements
none

### Skills to be acquired in this module
Upon completion of the module, students will be able to:
- understand the challenges of launching an enterprise,
- strategically analyse the structure of market,
- understand how employees are able to behave like an entrepreneur in established enterprises,
- develop innovative business ideas,
- shape the key factors for realizing a business idea,
- demonstrate a knowledge of the entrepreneurial process,
- demonstrate a knowledge of cost accounting (especially break-even analysis, etc.) and will be able to calculate costs by themselves,
- analyse and evaluate business models.

### Module contents
The module combines the lecture "Strategie und Entrepreneurship" with a tutorial. It investigates the challenges of launching enterprises and entrepreneurial behaviour in large companies as well. The content of the module follows the process of an entrepreneur. It starts with business ideas, their perception, and evaluation. In addition, it deals with the most important questions of development and management of new business models. The contents of the courses include the following topics:
- historical, institutional, and theoretical context
- development, evaluation, and pitching ideas
- business models
- building entrepreneurial teams
- entrepreneurship in large enterprises
- resources and finance
- management of growth

### Reader's advisory


### Links
http://www.uni-oldenburg.de/wire/entrepreneurship/lehrgang/veranstaltungen/lehrgang-weise-20162017/

### Language of instruction
German

### Duration (semesters)
1 Semester

### Module frequency
jährlich

### Module capacity
unlimited

### Reference text
The lecture “Strategie und Entrepreneurship” must be attended in combination with the “Tutorium”.

### Modulelevel
---
Modulart: je nach Studiengang Pflicht oder Wahlpflicht

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge

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<td>Tutorial</td>
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Total time of attendance for the module: 56 h
wir200 - Principles of Organisation

Module label
Principles of Organisation

Module code
wir200

Credit points
6.0 KP

Workload
180 h

Used in course of study
- Bachelor's Programme Business Informatics (Bachelor) > Akzentsetzungsmodule
- Bachelor's Programme Economics and Business Administration (Bachelor) > Studienrichtung Betriebswirtschaftslehre
- Master of Education Programme (Vocational and Business Education) Economics and Business Administration (Master of Education) > Mastermodule
- Master's Programme Business Informatics (Master) > Module der Wirtschafts- und Rechtswissenschaften (Master)

Contact person
Module responsibility
- Thomas Breisig
- Jörg Prokop

Authorized examiners
- Die im Modul Lehrenden

Module counseling
- Teodora Todorova
- Thomas Breisig

Entry requirements
Keine

Skills to be acquired in this module
Upon completion of the module, students will be able to:

- explain and apply the approaches and instruments of organisational sciences;
- demonstrate a familiarity with the basic assumptions, strategies, and core themes of organisational theories and are able to compare and reflect upon them;
- know different forms of organisational design and are able to differentiate them;
- know how to identify and predict issues and developments within operational and organisational structures and processes;
- demonstrate an awareness of the relevance of organisational culture, can describe its characteristics and discuss different analytical techniques;
- describe and analyse processes of organizational change, can point out their influences on strategy, organisational culture, operational and organisational structure, and estimate the relevance of change process initiation;
- work cooperatively and self-dependant within teams and to present complex professional contents precisely and with profound arguments (if chosen to present a topic within the seminar).

Furthermore, the students are able:
• to locate a specific research question within the scientific discussion in this research area and to interlink, reflect and evaluate it accordingly
• to press their point within the scientific discussion in this research area.

Module contents
The module contents are arranged in the following way:

- Basic concepts and conceptual demarcation
- Objectives of an organisation
- Dimensions in formal organisation
- Organisational culture
- Organisational structure
- Operational structure and processes

These basic principles of organisation are presented and discussed within the lectures. Current economic and business developments are included. Seminars and tutorials are offered to deepen the lecture presentations and to relate them to examples and cases.

Reader's advisory

Further literature will be announced during the semester according to the particular lecture/seminar content.

Links
www.uol.de/orgpers

Language of instruction
German

Duration (semesters)
1 Semester

Module frequency
jährlich

Module capacity
unlimited
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| Total time of attendance for the module | 56 h |
**Module label**: Corporate Environmental Management  
**Module code**: wir210  
**Credit points**: 6.0 KP  
**Workload**: 180 h  
**Used in course of study**
- Bachelor's Programme Business Informatics (Bachelor) > Akzentsetzungsmodule  
- Bachelor's Programme Economics and Business Administration (Bachelor) > Studienrichtung Betriebswirtschaftslehre  
- Bachelor's Programme Economics and Business Administration (Bachelor) > Studienrichtung Ökologie und Nachhaltigkeit  
- Master of Education Programme (Vocational and Business Education) Economics and Business Administration (Master of Education) > Mastermodule  
- Master's Programme Business Informatics (Master) > Module der Wirtschafts- und Rechtswissenschaften (Master)

**Contact person**
- Module responsibility: Bernd Siebenhüner
- Module counseling: Lars Hochmann

**Entry requirements**
- The students:  
  - understand the goals and concepts of sustainable development;  
  - discuss the importance of sustainability for companies;  
  - know basic strategies and instruments that enable companies to achieve sustainable development;  
  - acquire conceptual and practical skills using case studies, in particular about which instruments can be used to prepare companies for the challenges of sustainable development.

**Module contents**
- The module consists of a lecture and a seminar. While the lecture presents and explains concepts, instruments and strategies for sustainable development, the seminar focuses on the practical relevance of the various instruments, concepts and strategies and discusses these based on case studies.  
  - Concepts and goals of sustainable development  
  - Introduction to the current discussion on sustainable development  
  - Current sustainability instruments and strategies for companies  
  - Case studies

**Reader's advisory**

**Links**
- https://www.uni-oldenburg.de/wire/

**Language of instruction**: German  
**Duration (semesters)**: 1 Semester  
**Module frequency**: jährlich  
**Module capacity**: unlimited  
**Modullevel**: ---  
**Modulart**: je nach Studiengang Pflicht oder Wahlpflicht  
**Lern-/Lehrform / Type of program**: Vorlesung mit begleitendem Seminar  
**Vorkenntnisse / Previous knowledge**

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**Course type**

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<td>Workload</td>
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**Used in course of study**
- Bachelor's Programme Business Informatics (Bachelor) > Akzentsetzungsmodule
- Bachelor's Programme Economics and Business Administration (Bachelor) > Studienrichtung Ökologie und Nachhaltigkeit
- Bachelor's Programme Economics and Business Administration (Bachelor) > Studienrichtung Volkswirtschaftslehre
- Bachelor's Programme Sustainability Economics (Bachelor) > Vertiefungsmodule
- Master's Programme Business Informatics (Master) > Module der Wirtschafts- und Rechtswissenschaften (Master)

**Contact person**
- Module responsibility
  - Christoph Böhringer
- Authorized examiners
  - Die im Modul Lehrenden
  - Christoph Böhringer

**Entry requirements**
- The undergraduates
  - understand the basic subjects of environmental economics
  - know essentials of economic theory in environmental policy
  - know environmental problems and are able to analyze and interpret them economically
  - know the mechanics of instruments in environmental policy and also their conditions of usage
  - are able to evaluate instruments of environmental policy
  - know about the problems of transnational environmental burdens
  - know methods of environmental assessment

**Module contents**
- Following topics will be discussed:
  - definition and differentiation of environmental economics
  - economic interpretations of environmental problems
  - objectives and instruments of environmental policy
  - market economy instruments of environmental policy
  - conditions of implementation of environmental politics
  - International environmental problems
  - environmental assessment

**Reader's advisory**

**Links**
- [https://www.uni-oldenburg.de/wire/](https://www.uni-oldenburg.de/wire/)

**Language of instruction**
- German

**Duration (semesters)**
- 1 Semester

**Module frequency**
- jährlich

**Module capacity**
- unlimited

**Modullevel**
- ---

**Modulart**
- je nach Studiengang Pflicht oder Wahlpflicht

**Lern-/Lehrform / Type of program**
- Einführung in die VWL und Mikroökonomische Theorie

**Examination**
- Time of examination: Zum Ende der Vorlesungszeit
- Type of examination: KL

**Course type**
- Lecture

**SWS**
- 4.00

**Frequency**
- Workload attendance: 56 h
wir400 - Strategic and International Marketing

Module label: Strategic and International Marketing
Module code: wir400
Credit points: 6.0 KP
Workload: 180 h

Used in course of study:
- Bachelor's Programme Business Administration and Law (Bachelor) > Akzentsetzungsmodul
- Bachelor's Programme Business Informatics (Bachelor) > Akzentsetzungsmodul
- Bachelor's Programme Economics and Business Administration (Bachelor) > Studienrichtung Betriebswirtschaftslehre
- Master of Education Programme (Vocational and Business Education) Economics and Business Administration (Master of Education) > Mastermodule
- Master's Programme Business Informatics (Master) > Module der Wirtschafts- und Rechtswissenschaften (Master)

Contact person:
- Module responsibility: Thorsten Raabe
- Authorized examiners:
  - Die im Modul Lehrenden
- Module counseling: Sören Sundermann

Entry requirements:
- Skills to be acquired in this module:
  - recognize challenges facing marketing strategy in the field of markets and societies and draw conclusions for business management
  - elaborate and reflect upon the theoretical and conceptual foundations of strategic marketing planning
  - come up with examples that exemplify the systemic connection between strategic and instrumental marketing planning
  - discuss core assumptions of internationalization in the context of strategy planning and critically reflect upon its implications
  - build market research skills in an international context using different methods
  - develop their own perspectives on the conceptualization and implementation of international marketing strategies and advance them in discourses

Module contents:
The core of the module is the application of strategic planning methods in Marketing. A broadened understanding of Marketing in the areas of competitors, market agents and stakeholder orientation will be substantiated in theoretical and practical-normative view. International marketing forms an integrated part of strategic marketing planning; its basics and internal conception are formulated precisely in this course.

Reader's advisory:
Latest editions of:
- Meffert, H., Marketing-Management, Analyse - Strategie - Implementierung, Wiesbaden
- Kreikebaum, H., Strategische Unternehmensplanung, Stuttgart/ Berlin/ Köln
- Benkenstein, M., Strategisches Marketing, Stuttgart/ Berlin/ Köln

Links:
www.uni-oldenburg.de/marketing

Language of instruction: German
Duration (semesters): 1 Semester
Module frequency: jährlich
Module capacity: unlimited

Modulart: je nach Studiengang Pflicht oder Wahlpflicht

Lern-Lehrform / Type of program:

Vorkenntnisse / Previous knowledge:
Erfolgreicher Besuch des Moduls "Einführung in das Marketing" (wir070);
Ausnahmeregelungen nach Absprache mit dem Modulverantwortlichen

Examination:
- Time of examination: end of term
- Type of examination: written exam; voluntary contributions that improve grades may undertaken as 'portfolio-presentations' during tutorials

Course type: SWS
Comment: Frequency: Workload attendance:

144 / 156
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<th>Comment</th>
<th>SWS</th>
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<td>Seminar</td>
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**Total time of attendance for the module**: 56 h
wir902 - International Sustainability Management

Module label  
International Sustainability Management

Module code  
wir902

Credit points  
6.0 KP

Workload  
180 h

Used in course of study
- Master's Programme Business Informatics (Master) > Module der Wirtschafts- und Rechtswissenschaften (Master)
- Master's Programme Sustainability Economics and Management (Master) > Basic and Accentuation Modules
- Master's Programme Water and Coastal Management (Master) > Socioeconomics

Contact person
Module responsibility
- Bernd Siebenhüner

Authorized examiners
- Die im Modul Lehrenden
- Alkje Wegner
- Stefanie Sievers-Glotzbach

Entry requirements  
No

Skills to be acquired in this module
- Knowledge on the basic concepts and strategies of sustainability management related to corporate practice:
  * Sustainability: Basic concepts, strategies,
  * Domestic and international challenges for business,
  * Business case for sustainable development,
  * Integrative concepts of sustainable corporations,
  * Sustainable strategies,
  * Management instruments
- Discussing topics of international sustainability management with students from different scientific disciplines.
- Ability to present and evaluate different concepts and instruments of international sustainability management

Module contents
This module consists of a one lecture and one seminar (2 weekly contact hours per lecture/seminar) dealing with basic concepts and strategies of sustainability management within corporations. Both, lecture and seminar give an overview of current sustainability strategies for companies and present a variety of instruments to integrate and initiate sustainable development within corporations. While the lecture focuses more on theoretical approaches and introduces basic concepts of corporate sustainability management, the seminar provides a variety of case studies and business cases to demonstrate different concepts and instruments of sustainability management. The seminar provides the possibilities for inter- and transdisciplinary exchange and discussions.

Reader's advisory
BMU/BDI (Eds.) 2002: Sustainability Management in Business Enterprises. CSM, University of Lueneburg (Schaltegger, Herzig, Kleiber, Müller), http://www2.leuphana.de/umanagement/csm/content/nama/downloads/pdf-dateien/nmu_fs_engl_final.pdf
Charter, Martin/Tischner, Ursula (Eds.) (2001): Sustainable Solutions, Developing Products and Services for the Future, Sheffield: Greenleaf;
Hutchinson, Andrew, and Frances Hutchinson, 1997 Environmental Business Management: Sustainable Development in the New Millennium. London u.a.; McGraw-Hill;

Links
Language of instruction  
English
Duration (semesters)  
1 Semester
Module frequency  
jährlich
Module capacity  
unlimited
Modulelevel  
BM (Basismodul / Base)
Modulart  
je nach Studiengang Pflicht oder Wahlpflicht
Lern-Lehrform / Type of program
Vorkenntnisse / Previous knowledge

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<th>Examination</th>
<th>Time of examination</th>
<th>Type of examination</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Final exam of module</strong></td>
<td>By the end of the lecture period</td>
<td>Presentation and written summary</td>
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<table>
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<tr>
<th>Course type</th>
<th>Comment</th>
<th>SWS</th>
<th>Frequency</th>
<th>Workload attendance</th>
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<tbody>
<tr>
<td>Lecture</td>
<td></td>
<td>2.00</td>
<td></td>
<td>28 h</td>
</tr>
<tr>
<td>Seminar</td>
<td></td>
<td>2.00</td>
<td></td>
<td>28 h</td>
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**Total time of attendance for the module** 56 h
wir909 - Strategic Sustainability Management

Module label: Strategic Sustainability Management
Module code: wir909
Credit points: 6.0 KP
Workload: 180 h

Used in course of study:
- Master's Programme Business Informatics (Master) > Module der Wirtschafts- und Rechtswissenschaften (Master)
- Master's Programme Sustainability Economics and Management (Master) > Basic and Accentuation Modules

Contact person:
Module responsibility: Christian Busse
Authorized examiners: Die im Modul Lehrenden
Module counseling: Claudia Stüwe

Entry requirements:
Skills to be acquired in this module:
This module provides students with the opportunity to scrutinize firms’ sustainability management from a strategic perspective. Specifically, students learn to evaluate sustainability-related management practices critically, and they are enabled to relate corporate sustainability to a firm’s conventional performance objectives. To this aim, students also familiarize themselves with the scholarly discourse on sustainability that is published in leading management journals. In addition to broader strategic considerations students become acquainted with the specific sustainability-related challenges in global supply chains and begin looking at sustainability from an inter-organizational perspective. Furthermore, students will be enabled to frame sustainability aspects as springboards for more innovative and entrepreneurial firm behavior. The theoretical foundations of the module will be supplemented by practical examples. Students will also refine their reading, writing, presentation, and discussion skills in the module. Moreover, the exposition to some major theoretical developments and to empirical research methods applied in academic studies can prepare students for their master thesis.

Module contents:
Firms’ motivation for sustainable business conduct; Conception of sustainability; Stakeholder theory; Legitimacy; Decoupling; Agency; Sustainable innovation and entrepreneurship; Sustainability and supply chain management: A brief introduction; Closed-loop supply chain management; Supply chain sustainability risks; Supplier management for sustainability; Standards for fostering sustainability in the supply chain

Reader’s advisory:
We will work with various academic paper publications, rather than a text book.

Links:
Language of instruction: English
Duration (semesters): 1 Semester

Module frequency:
unlimited

Reference text:
This module is offered in the summer term. For a more detailed description of course content and organization, please note the syllabus that will be made available via Stud.IP before the beginning of the course.

Modul level:
AS (Aktzentsetzung / Accentuation)

Modulart:
Wahlpflicht / Elective

Lern-/Lehrform / Type of program

Vorkenntnisse / Previous knowledge:

Examination:
Type of examination:
Final exam of module: Portfolio, presumably consisting of a final report (graded) and a presentation (compulsory but ungraded)

Course type:
Comment:
SWS:
Frequency:
Workload attendance:
Lecture: 2.00: SuSe and WiSe: 28 h
Seminar: 2.00: SuSe and WiSe: 28 h

Total time of attendance for the module: 56 h
Kernmodule

inf900 - Group Project

<table>
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<tr>
<th>Module label</th>
<th>Group Project</th>
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<tbody>
<tr>
<td>Module code</td>
<td>inf900</td>
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<tr>
<td>Credit points</td>
<td>24.0 KP</td>
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<tr>
<td>Workload</td>
<td>720 h</td>
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Used in course of study
- Master's Programme Business Informatics (Master) > Kernmodule
- Master's Programme Computing Science (Master) > Kernmodule
- Master's Programme Embedded Systems and Microrobotics (Master) > Kernmodule
- Master's Programme Engineering of Socio-Technical Systems (Master) > Systems Engineering

Contact person
- Module responsibility
  - Die im Modul Lehrenden
- Authorized examiners
  - Die im Modul Lehrenden

Entry requirements

Skills to be acquired in this module
The students get familiar with different software development aspects in a team. Apart from software engineering knowledge and skills they develop key competences like project management, teamwork, problem solving competence and conflict management.

Additionally, students develop special knowledge, skills and competences from the project group topic.

Professional competence
The students:
- characterise and apply computer science basics (algorithms, data structures, programming, basics of practical, technical and theoretical computer science)
- define and describe essential mathematical, logical and physical basics of computer science
- define and illustrate the core disciplines of computer science (theoratical, practical and technical computer science)

Methodological competence
The students:
- examine problems, use formal methods to phrase and analyze them appropriately
- evaluate problems by the use of technical and scientific literature
- reflect on a scientific topic and write a scientific seminar paper under guidance and present their findings

Social competence
The students:
- integrate criticism into their own actions
- respect team decisions
- communicate with users and experts convincingly

Self-competence
The students:
- take on project management tasks
- pursue the overall and special computer science development critically
- implement innovative professional activities effectively and independently
- recognise their abilities and extend them purposely
- reflect their self-perception and actions with regard to professional, methodological and social aspects
- develop and reflect self-developed hypotheses to theories independently
- work in their field independently

Module contents
Cooperative development of a large-scale computer science project. This project generally includes the (further) development of a hard or software system.

Reader's advisory
According to the assigned task

Links
https://www.uni-oldenburg.de/informatik/studium-lehre/infos-zum-studium/projektgruppen-im-masterstudium/
<table>
<thead>
<tr>
<th><strong>Languages of instruction</strong></th>
<th>German, English</th>
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<tr>
<td><strong>Duration (semesters)</strong></td>
<td>2 Semester</td>
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<tr>
<td><strong>Module frequency</strong></td>
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<td><strong>Module capacity</strong></td>
<td>unlimited</td>
</tr>
<tr>
<td><strong>Reference text</strong></td>
<td>Dieses Modul ist im Rahmen der Projekte FiF und FoL konzipiert worden</td>
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<tr>
<td><strong>Modul level</strong></td>
<td>AS (Akzentsetzung / Accentuation)</td>
</tr>
<tr>
<td><strong>Modulart</strong></td>
<td>Pflicht o. Wahlpflicht / compulsory or optional</td>
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<tr>
<td><strong>Lern-/Lehrform / Type of program</strong></td>
<td>PG</td>
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</table>
| **Vorkenntnisse / Previous knowledge** | - Programmierkurs  
- Softwaretechnik  
- Soft Skills |
| **Examination**              | Time of examination  
Type of examination |
| **Final exam of module**     | Im Stud.IP nach Bekanntgabe der einzelnen Gruppen und Themen  
Active involvement, presentation, final report, project assessment |
| **Course type**              | Project group   |
| **SWS**                      | 8.00            |
| **Frequency**                | SuSe and WiSe  |
| **Workload attendance**      | 112 h           |
inf903 - Research Project I

Module label | Research Project I
Module code | inf903
Credit points | 12.0 KP
Workload | 360 h

Used in course of study
- Master’s Programme Business Informatics (Master) > Kernmodule
- Master’s Programme Engineering of Socio-Technical Systems (Master) > Systems Engineering

Contact person
Module responsibility
- Jorge Marx Gomez
- Martin Georg Fränzle
Authorized examiners
- Die im Modul Lehrenden

Entry requirements
Skills to be acquired in this module
The Module practices the scientific competencies in preparation of the master thesis. It is intended to replace the project group with the two “Research Project” modules to ensure studibility and to enable students to perform research projects at foreign universities. Additionally, it is also intended to embed the student into the research activities of the supervisor in preparation of a potential doctoral work after finishing the program.

Module contents
Definition of a research question, identifying the state of the art, development of a research plan, performing research tasks, scientific writing, presentation of results.

Professional competence
The students:
- will extend their competences in the required technologies of the research area

Methodological competence
The students:
- will extend their competences in scientific methodologies, methods, and tools regarding the research area

Social competence
The students:
- will be integrated in the working group of the supervisor of the work and have to present as well as discuss the results within the working group

Self-competence:
The students:
- Recognise their abilities and extend them purposefully
- Reflect their self-perception and actions with regard to professional, methodological and social aspects
- Develop and reflect self-developed hypothesis to theories independently
- Work in their field independently

Reader's advisory
Will be announced by the supervisor according to the research topic.

Links
Languages of instruction | English , German
Duration (semesters) | 1 Semester
Module frequency | Sommer und Winter
Module capacity | unlimited
Modullevel | BC (Basiscurriculum / Base curriculum)
Modullevel | BC (Basiscurriculum / Base curriculum)
Modulart | je nach Studiengang Pflicht oder Wahlpflicht
Modulart | je nach Studiengang Pflicht oder Wahlpflicht
Lern-Lehrform / Type of program | P
Lern-Lehrform / Type of program | P

Vorkenntnisse / Previous knowledge
Examination Time of examination Type of examination
Final exam of module | Projekt
<table>
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<tr>
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</tr>
<tr>
<td>Frequency</td>
<td>SuSe and WiSe</td>
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<tr>
<td>Workload attendance</td>
<td>84 h</td>
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inf904 - Research Project II

<table>
<thead>
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<tbody>
<tr>
<td>Module code</td>
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<tr>
<td>Credit points</td>
<td>12.0 KP</td>
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<tr>
<td>Workload</td>
<td>360 h</td>
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<tr>
<td>Used in course of study</td>
<td>Master's Programme Business Informatics (Master) &gt; Kernmodule</td>
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**Contact person**
- Module responsibility
  - Axel Hahn
  - Die im Modul Lehrenden
- Authorized examiners
  - Axel Hahn
  - Die im Modul Lehrenden

**Entry requirements**

**Skills to be acquired in this module**
The Module improves the scientific competencies in preparation of the master thesis. It is intended to replace the project group with the two “Research Project” modules to ensure studibility and to enable students to perform research projects at foreign universities. Additionally, it is also intended to embed the student into the research activities of the supervisor in preparation of a potential doctoral work after finishing the program.

**Professional competence**
The students:
- will improve their competences in the required technologies of the research area.

**Methodological competence**
The students:
- will improve their competences in scientific methodologies, methods, and tools regarding the research area.

**Social competence**
The students:
- will be integrated in the working group of the supervisor of the work and have to present as well as discuss the results within the working group.

**Self-competence:**
The students:
- know their abilities and extend them purposefully
- reflect their self-perception and actions with regard to professional, methodological and social aspects
- develop and reflect self-developed hypothesis to theories independently
- work in their field independently

**Module contents**
Definition of a research question, identifying the state of the art, development of a research plan, performing research tasks, scientific writing, presentation of results

**Reader’s advisory**
Will be announced by the supervisor according to the research topic.

**Languages of instruction**
German, English

**Duration (semesters)**
1 Semester

**Module frequency**
Sommer und Winter

**Module capacity**
unlimited

**Modullevel**
BC (Basiscurriculum / Base curriculum)

**Modulart**
je nach Studiengang Pflicht oder Wahlpflicht

**Vorkenntnisse / Previous knowledge**
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<th>Examination</th>
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<th>Type of examination</th>
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<tbody>
<tr>
<td>Final exam of module</td>
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<td>Projekt</td>
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<tr>
<td>Course type</td>
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<td></td>
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<tr>
<td>Frequency</td>
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<td>56 h</td>
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mam - Master Thesis

### Module label
Master Thesis

### Module code
mam

### Credit points
30.0 KP

### Workload
900 h

### Used in course of study
- Master's Programme Business Informatics (Master) > Kernmodule

### Contact person
- Module responsibility
  - Michael Sonnenschein
  - Andreas Hein
  - Jorge Marx Gomez
- Lehrende der Informatik

### Entry requirements

**Skills to be acquired in this module**

**Module contents**
Entsprechendes Thema aus der Wirtschaftsinformatik

**Reader’s advisory**
Wird entsprechend des konkreten Themas spezifiziert

**Links**

**Language of instruction**
German

**Duration (semesters)**
1 Semester

**Module frequency**
halbjährlich

**Module capacity**
unlimited

**Modullevel**
Abschlussmodul (Abschlussmodul)

**Modulart**
Pflicht

### Lern-/Lehrform / Type of program

### Vorkenntnisse / Previous knowledge

### Examination

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<thead>
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<th>Type of examination</th>
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### Course type

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### SWS

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### Workload attendance

| 28 h |

155 / 156