Module Handbook
Information Engineering and Management B.Sc.

SPO 2015

Summer term 2019

Date: 01.04.2019

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1 Welcome to the new module handbook of your study programme

We are delighted that you have decided to study at the KIT Department of Economics and Management and wish you a good start into the new semester!

The following contact persons are at your disposal for questions and problems at any time.

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2 About this handbook

2.1 Notes and rules

The program exists of several **subjects** (e.g. business administration, economics, operations research). Every subject is split into **modules** and every module itself consists of one or more interrelated **module component exams**. The extent of every module is indicated by credit points (CP), which will be credited after the successful completion of the module. Some of the modules are **obligatory**. According to the interdisciplinary character of the program, a great variety of **individual specialization and deepening possibilities** exists for a large number of modules. This enables the student to customize content and time schedule of the program according to personal needs, interest and job perspective. The **module handbook** describes the modules belonging to the program. It describes particularly:

- the structure of the modules
- the extent (in CP),
- the dependencies of the modules,
- the learning outcomes,
- the assessment and examinations.

The module handbook serves as a necessary orientation and as a helpful guide throughout the studies. The module handbook does not replace the **course catalog**, which provides important information concerning each semester and variable course details (e.g. time and location of the course).

2.1.1 Begin and completion of a module

Each module and each examination can only be selected once. The decision on the assignment of an examination to a module (if, for example, an examination in several modules is selectable) is made by the student at the moment when he / she is registered for the appropriate examination. A module is completed or passed when the module examination is passed (grade 4.0 or better). For modules in which the module examination is carried out over several partial examinations, the following applies: The module is completed when all necessary module partial examinations have been passed. In the case of modules which offer alternative partial examinations, the module examination is concluded with the examination with which the required total credit points are reached or exceeded. The module grade, however, is combined with the weight of the predefined credit points for the module in the overall grade calculation.

2.1.2 Module versions

It is not uncommon for modules to be revised due to, for example, new courses or cancelled examinations. As a rule, a new module version is created, which applies to all students who are new to the module. On the other hand, students who have already started the module enjoy confidence and remain in the old module version. These students can complete the module on the same conditions as at the beginning of the module (exceptions are regulated by the examination committee). The date of the student's "`binding declaration'" on the choice of the module in the sense of §5(2) of the Study and Examination Regulation is decisive. This binding declaration is made by registering for the first examination in this module.

In the module handbook, all modules are presented in their current version. The version number is given in the module description. Older module versions can be accessed via the previous module handbooks in the archive at **http://www.wiwi.kit.edu/Archiv_MHB.php**.

2.1.3 General and partial examinations

Module examinations can be either taken in a general examination or in partial examinations. If the module examination is offered as a general examination, the entire learning content of the module will be examined in a single examamination. If the module examination is subdivided into partial examinations, the content of each course will be examined in corresponding partial examinations. Registration for examinations can be done online at the campus management portal. The following functions can be accessed on **https://campus.studium.kit.edu/**:

- Register/unregister for examinations
- Check for examination results
- Create transcript of records

For further and more detailed information, **https://studium.kit.edu/Seiten/FAQ.aspx**.

2.1.4 Types of exams

Exams are split into written exams, oral exams and alternative exam assessments. Exams are always graded. Non exam assessments can be repeated several times and are not graded.

2.1.5 Repeating exams

Principally, a failed written exam, oral exam or alternative exam assessment can repeated only once. If the repeat examination (including an eventually provided verbal repeat examination) will be failed as well, the examination claim is lost. A request for a second repetition has to be made in written form to the examination committee two months after loosing the examination claim. A counseling interview is mandatory.

For further information see http://www.wiwi.kit.edu/hinweiseZweitwdh.php.

2.1.6 Additional accomplishments

Additional accomplishments are voluntarily taken exams, which have no impact on the overall grade of the student and can take place on the level of single courses or on entire modules. It is also mandatory to declare an additional accomplishment as such at the time of registration for an exam. Additional accomplishments with at most 30 CP may appear additionally in the certificate.

2.1.7 Further information

More detailed information about the legal and general conditions of the program can be found in the examination regulation of the program (http://www.sle.kit.edu/amtlicheBekanntmachungen.php).

3 The Bachelor's degree program in Information Engineering and Management

3.1 Qualification objectives of the Bachelor's degree in Information Engineering and Management

Graduates with a Bachelor's degree in Information Engineering and Management are equipped with strategically oriented basic knowledge in the fields of informatics (theoretical computer science, algorithms, programming technology and software engineering), economic sciences (business-related topics from the financial industry, information industry, production management, marketing and accounting as well as economic correlations of microeconomics) and law (basics of private law, private business law and of the constitutional and administrative law) as well as mathemaatics, statistics and operation research.

Through the comprehensive methodological basis, the graduates are in a position to acknowledge and apply specialized basic concepts, methods, models and approaches.

The graduates have an in-depth knowledge in computer science and law.

They can acknowledge, describe and communicate economic, IT and legal problems. This hereby entails planning, analyzing, comparing, reviewing and optimizing products, systems and processes. They make decisions, develop specialized solutions and implement their innovative ideas using methods and models from different disciplines within the framework of the available resources. They know how to illustrate, validate, review and guarantee the quality of the results achieved.

The practical use of their know-how also takes into account the social, scientific and ethical aspects.

Through the interdisciplinary nature of the course, the graduates can effectively respond at the interface of the different topics as well as set up targeted communication between the respective disciplines.

The graduates are in a position to work in a team and cope with challenges, e.g., those encountered in information and communication technology fields.

They have the ability to exercise career-related activities in the industry, service sector or in trade, start their own firms or take up a Master's degree program in Information Engineering and Management or any other related course.

3.2 Structure of the Bachelor's degree program in Information Engineering and Management SPO 2015

The Bachelor's degree program in **Information Engineering and Management** SPO 2015 has 6 terms. The first four terms have a methodological orientation and provides the student with the foundations of informatics, business administration, economics and law. Terms 5 and 6 aim at the specialization and application of this knowledge. Figure 2 shows the structure of the subjects and the credits (CP) allocated to the subjects.

According to the European Credit Transfer System, one credit corresponds to a workload of 30 hours.

Figure 2: Structure of Bachelor's degree program in Information Engineering and Management SPO2015 (recommendation)

Based on a solid mathematical education, the modules of the first four terms of the Bachelor programme in information engineering and management are allocated in the proportion 40/40/20 to informatics (informatics, applied informatics, and computer engineering), economic sciences (business administration, economics, operations research), and law. The internship prepares the student for his profession. Figure 3 shows the allocation of courses to modules and the curriculum for the first four terms.

ModulID	Course	Hours per week	CP
1st Term			
M-WIWI-101491	Business Administration: Finance and Accounting	2/0/2	4.0
M-WIWI-101431	Economics I	3/0/2	5.0
M-MATH-101311	Mathematics I	4/2/2	8.0
M-INFO-101170	Basic Notions of Computer Science	3/1/3	6.0
M-INFO-101174	Programming	2/0/2	5.0
M-INFO-101190	Civil Law for Beginners	4/0	4.0
			32.0
2nd Term			
M-WIWI-101491	Introduction to Information Engineering and Management	2/0/2	4.0
M-WIWI-101432	Statistics I	4/0/2	5.0
M-WIWI-101418	Introduction to Operations Research I	2/2/2	4.5
M-MATH-101312	Mathematics II	4/2/2	8.0
M-INFO-100030	Algorithms I	3/1/2	6.0
M-INFO-101191	Advanced Civil Law	2/0	3.0
			30.5
3rd Term			
M-WIWI-101492	Financial Accounting and Cost Accounting	2/2	4.0
M-WIWI-101432	Statistics II	4/0/2	5.0
M-WIWI-101418	Introduction to Operations Research II	2/2/2	4.5
M-INFO-101189	Theoretical Foundation of Computer Science	3/1/2	6.0
M-WIWI-101430	Applied Informatics I	2/1	4.0
M-INFO-101191	Commercial and Corporate Law	2/0	3.0
M-INFO-101192	Public Law I	2/0	3.0
			29.5
4th Term			
M-WIWI-101492	Business Administration: Production Economics and Marketing	2/0/2	4.0
M-WIWI-101430	Applied Informatics II	2/1/1	4.0
M-INFO-101175	Software Engineering I	3/1/2	6.0
M-INFO-101192	Public Law II	2/0	3.0
M-INFO-101191	Exercises in Civil Law	2/2/0	3.0
M-WIWI-101433	Internship		8.0
			28.0
			120.0

Figure 3: Curriculum in the terms 1-4

In the 3rd year (5th and 6th term) of the Bachelor program the student must pass

- module(s) with 18 credits in informatics
- a module with 9 credits in the subject Business Administration
- a module with 9 credits in the subject BA/OR/EC,
- a module with 6 credits in law,
- two out of the three seminar modules with 3 credits each,
- and the bachelor thesis with 12 credits.

4 Field of study structure

Mandatory	
Orientation Exam	
Bachelor Thesis	12 CR
Internship	8 CR
Business Administration	16 CR
Economics	5 CR
Informatics	37 CR
Mathematics	16 CR
Operations Research	9 CR
Statistics	10 CR
Law	19 CR
Advanced Studies in Informatics	18 CR
Advanced Studies in Economics and Management	18 CR
Advanced Studies in Law	6 CR
Research Course	6 CR

4.1 Orientation Exam

Mandatory		
M-WIWI-101528	Orientation Exam	0 CR

4.2 Bachelor Thesis

Credits
12

Mandatory		
M-WIWI-101611	Module Bachelor Thesis	12 CR

4.3 Internship

Credits
8

Mandatory		
M-WIWI-101433	Internship	8 CR

4.4 Business Administration

Credits
16

Mandatory		
M-WIWI-101491	Foundations in Business Administration	8 CR
M-WIWI-101492	Business Administration	8 CR

4.5 Economics

Credits
5

Mandatory		
M-WIWI-101431	Economics	5 CR

4.6 Informatics

Credits
37

Mandatory		
M-INFO-101170	Basic Notions of Computer Science	6 CR
M-INFO-101174	Programming	5 CR
M-INFO-100030	Algorithms I	6 CR
M-WIWI-101430	Applied Informatics	8 CR
M-INFO-101189	Theoretical Informatics	6 CR
M-INFO-101175	Software Engineering I	6 CR

4.7 Mathematics

Credits
16

Mandatory		
M-MATH-101311	Mathematics I	8 CR
M-MATH-101312	Mathematics II	8 CR

4.8 Operations Research

Credits
9

Mandatory		
M-WIWI-101418	Introduction to Operations Research	9 CR

4.9 Statistics

Credits
10

Mandatory		
M-WIWI-101432	Introduction to Statistics	10 CR

4.10 Law

Credits
19

Mandatory		
M-INFO-101190	Introduction to Civil Law	4 CR
M-INFO-101191	Commercial Law	9 CR
M-INFO-101192	Constitutional and Administrative Law	6 CR

Prerequisites
xxx

4.11 Advanced Studies in Informatics

Credits
18

Election block: Vertiefungsfach Informatik Wahl (at least 1 item as well as at least 18 credits)		
M-WIWI-101438	Semantic Knowledge Management	10 CR
M-WIWI-101439	Semantic Web and Applications	8 CR
M-WIWI-101440	Information Services in Networks	9 CR
M-WIWI-101476	Business Processes and Information Systems	9 CR
M-INFO-100809	Advanced Object Orientation	5 CR
M-INFO-100818	Computer Architecture	6 CR
M-INFO-100833	Software Engineering II	6 CR
M-INFO-100834	Security	6 CR
M-INFO-101173	Algorithms II	6 CR
M-INFO-101193	Foundations of Information Systems	9 CR
M-INFO-101194	Telematics	10 CR
M-INFO-101220	Algorithms for Planar Graphs	5 CR
M-INFO-101229	Database Systems in Theory and Practice	9 CR
M-INFO-101235	Introduction to Data and Information Management	9 CR
M-INFO-101237	Algorithmic Methods for Hard Optimization Problems	5 CR
M-INFO-101249	Mobile Computing and Internet of Things	5 CR
M-INFO-101178	Communication and Database Systems	8 CR
M-INFO-101836	Computer Engineering	6 CR
M-INFO-100757	Mechano-Informatics and Robotics	4 CR
M-INFO-100786	IT-Security Management for Networked Systems	5 CR
M-INFO-101184	Mobile Robots – Practical Course	4 CR
M-INFO-102557	Lego Mindstorms - Practical Course	4 CR
M-INFO-102978	Digital Circuits Design	6 CR
M-WIWI-104069	Information Security	9 CR

4.12 Advanced Studies in Economics and Management

Credits
18

Election block: Betriebswirtschaftslehre Wahl (1 item)		
M-WIWI-101434	eBusiness and Service Management	9 CR
M-WIWI-101421	Supply Chain Management	9 CR
M-WIWI-101402	eFinance	9 CR
M-WIWI-101460	CRM and Service Management	9 CR
M-WIWI-101422	Specialization in Customer Relationship Management	9 CR
M-WIWI-101425	Strategy and Organization	9 CR
M-WIWI-101437	Industrial Production I	9 CR
M-WIWI-101464	Energy Economics	9 CR
M-WIWI-101435	Essentials of Finance	9 CR
M-WIWI-101465	Topics in Finance I	9 CR
M-WIWI-101467	Design, Construction and Sustainability Assessment of Buildings	9 CR
M-WIWI-101466	Real Estate Management	9 CR
M-WIWI-101424	Foundations of Marketing	9 CR
M-WIWI-101513	Human Resources and Organizations	9 CR
M-WIWI-102752	Fundamentals of Digital Service Systems	9 CR
M-WIWI-101423	Topics in Finance II	9 CR
Election block: Wirtschaftswissenschaften Wahl (1 item)		
M-WIWI-101402	eFinance	9 CR
M-WIWI-101421	Supply Chain Management	9 CR
M-WIWI-101422	Specialization in Customer Relationship Management	9 CR
M-WIWI-101424	Foundations of Marketing	9 CR
M-WIWI-101425	Strategy and Organization	9 CR
M-WIWI-101434	eBusiness and Service Management	9 CR
M-WIWI-101435	Essentials of Finance	9 CR
M-WIWI-101437	Industrial Production I	9 CR
M-WIWI-101460	CRM and Service Management	9 CR
M-WIWI-101464	Energy Economics	9 CR
M-WIWI-101465	Topics in Finance I	9 CR
M-WIWI-101466	Real Estate Management	9 CR
M-WIWI-101467	Design, Construction and Sustainability Assessment of Buildings	9 CR
M-WIWI-101413	Applications of Operations Research	9 CR
M-WIWI-101499	Applied Microeconomics	9 CR
M-WIWI-101501	Economic Theory	9 CR
M-WIWI-101513	Human Resources and Organizations	9 CR
M-WIWI-101599	Statistics and Econometrics	9 CR
M-WIWI-101936	Methodical Foundations of OR	9 CR
M-WIWI-102752	Fundamentals of Digital Service Systems	9 CR
M-WIWI-103337	Optimization under Uncertainty	9 CR
M-WIWI-101403	Public Finance	9 CR
M-WIWI-101423	Topics in Finance II	9 CR
M-WIWI-101668	Economic Policy I	9 CR

4.13 Advanced Studies in Law

Credits
6

Mandatory		
M-INFO-101253	Intellectual Property and Data Protection	6 CR

4.14 Research Course

Credits
6

Election block: Forschungsfach Wahl (2 aus 3 Modulen) (2 items)		
M-WIWI-101826	Seminar Module Economic Sciences	3 CR
M-INFO-101218	Seminar Module Law	3 CR
M-INFO-102058	Seminar Module Informatics	3 CR

5 Modules

M 5.1 Module: Advanced Object Orientation [M-INFO-100809]

Responsible: Prof. Dr.-Ing. Gregor Snelting
Organisation: KIT Department of Informatics
Part of: Advanced Studies in Informatics

Credits	Recurrence	Duration	Language	Level	Version
5	Each summer term	1 semester	Deutsch	3	1

Mandatory			
T-INFO-101346	Advanced Object Orientation	5 CR	Snelting

Content

- Behaviour and semantics of dynamic dispatch
- Implementation of single and multiple inheritance
- Genericity, refactoring
- Traits and mixins, virtual classes
- Cardelli's type system
- Analyses on the call graph, points-to analyses
- operational semantics, type safety
- bytecode JVM, bytecode verifier, dynamic compilation

Annotation

This is not a lecture on object-oriented software development! Rather, knowledge of object-oriented software engineering (e.g. Java, UML, Design Patterns) is required.

| M | **5.2 Module: Algorithmic Methods for Hard Optimization Problems [M-INFO-101237]** |

Responsible: Prof. Dr. Dorothea Wagner
Organisation: KIT Department of Informatics
Part of: **Advanced Studies in Informatics**

Credits	Recurrence	Duration	Language	Level	Version
5	Irregular	1 semester	Deutsch	3	1

Mandatory			
T-INFO-103334	**Algorithmic Methods for Hard Optimization Problems**	5 CR	Wagner

Competence Goal

The goal of this course is to familiarize the students with hard problems and possible approaches to solve them. Online problems may also be part of the course.

Content

There are many practical problems that cannot be solved optimally - some not at all and some not in a resonable amount of time. An example is the "bin packing problem" where a collection of

objects must be packed using a possibly small number of bins. Moreover, problems sometimes arise where knowledge about the future (or even about the present) is incomplete, but a decision

is required neverthelss ("online problems"). Regarding bin packing, for example, there must be a point in time when you close the bins and send them away. Even if there are some more objects arriving later.

M 5.3 Module: Algorithms for Planar Graphs [M-INFO-101220]

Responsible:	Prof. Dr. Dorothea Wagner
Organisation:	KIT Department of Informatics
Part of:	**Advanced Studies in Informatics**

Credits	Recurrence	Duration	Language	Level	Version
5	Each winter term	1 semester	Deutsch	3	1

Mandatory			
T-INFO-101986	**Algorithms for Planar Graphs**	5 CR	Wagner

Content
A planar graph is defined as a graph that can be drawn in the plane such that no edges intersect. Planar graphs have many interesting properties that can be used to solve several problems in a particularly simple, fast and elegant way. In addition, some problems that are (NP-)hard in general graphs can be efficiently solved in planar graphs. The lecture presents a selection of these problems and corresponding algorithmic approaches.

Annotation
The module is offered irregularly.

Workload
approx. 150 h

M	**5.4 Module: Algorithms I [M-INFO-100030]**

Responsible: Prof. Dr. Peter Sanders
Organisation: KIT Department of Informatics
Part of: Informatics

Credits	Recurrence	Duration	Language	Level	Version
6	Each summer term	1 term	Deutsch	2	1

Mandatory			
T-INFO-100001	Algorithms I	6 CR	Sanders

| M | 5.5 Module: Algorithms II [M-INFO-101173] |

Responsible: Prof. Dr. Hartmut Prautzsch
Prof. Dr. Peter Sanders
Prof. Dr. Dorothea Wagner

Organisation: KIT Department of Informatics

Part of: **Advanced Studies in Informatics**

Credits	Recurrence	Duration	Language	Level	Version
6	Each winter term	1 semester	Deutsch	3	1

Mandatory			
T-INFO-102020	Algorithms II	6 CR	Prautzsch, Sanders, Wagner

M	**5.6 Module: Applications of Operations Research [M-WIWI-101413]**

Responsible: Prof. Dr. Stefan Nickel
Organisation: KIT Department of Economics and Management
Part of: Advanced Studies in Economics and Management (Wirtschaftswissenschaften Wahl)

Credits	Recurrence	Duration	Level	Version
9	Each term	1 semester	3	8

Election block: Wahlpflichtangebot (between 1 and 2 items)			
T-WIWI-102704	Facility Location and Strategic Supply Chain Management	4,5 CR	Nickel
T-WIWI-102714	Tactical and Operational Supply Chain Management	4,5 CR	Nickel
Election block: Ergänzungsangebot (at most 1 item)			
T-WIWI-102726	Global Optimization I	4,5 CR	Stein
T-WIWI-106199	Modeling and OR-Software: Introduction	4,5 CR	Nickel
T-WIWI-106545	Optimization under Uncertainty	5 CR	Rebennack

Competence Certificate

The assessment is carried out as partial exams (according to § 4(2), 1 of the examination regulation) of the single courses of this module, whose sum of credits must meet the minimum requirement of credits of this module.

The assessment procedures are described for each course of the module seperately.

The overall grade of the module is the average of the grades for each course weighted by the credits and truncated after the first decimal.

Competence Goal

The student

- is familiar with basic concepts and terms of Supply Chain Management,
- knows the different areas of Supply Chain Management and their respective optimization problems,
- is acquainted with classical location problem models (in the plane, on networks and discrete) as well as fundamental methods for distribution and transport planning, inventory planning and management,
- is able to model practical problems mathematically and estimate their complexity as well as choose and adapt appropriate solution methods.

Prerequisites

At least one of the courses*Facility Location and strategic Supply Chain Management*and*Tactical and operational Supply Chain Management*has to be taken.

Content

Supply Chain Management is concerned with the planning and optimization of the entire, inter-company procurement, production and distribution process for several products taking place between different business partners (suppliers, logistics service providers, dealers). The main goal is to minimize the overall costs while taking into account several constraints including the satisfaction of customer demands.

This module considers several areas of Supply Chain Management. On the one hand, the determination of optimal locations within a supply chain is addressed. Strategic decisions concerning the location of facilities like production plants, distribution centers or warehouses are of high importance for the rentability of supply chains. Thoroughly carried out, location planning tasks allow an efficient flow of materials and lead to lower costs and increased customer service. On the other hand, the planning of material transport in the context of Supply Chain Management represents another focus of this module. By linking transport connections and different facilities, the material source (production plant) is connected with the material sink (customer). For given material flows or shipments, it is considered how to choose the optimal (in terms of minimal costs) distribution and transportation chain from the set of possible logistics chains, which asserts the compliance of delivery times and further constraints.

Furthermore, this module offers the possibility to learn about different aspects of the tactical and operational planning level in Suppy Chain Management, including methods of scheduling as well as different approaches in procurement and distribution logistics. Finally, issues of warehousing and inventory management will be discussed.

Recommendation

The courses Introduction to Operations Research I and II are helpful.

Annotation
The planned lectures and courses for the next three years are announced online.

Workload
The total workload of the module is about 240 hours. The workload is proportional to the credit points of the individual courses.

M 5.7 Module: Applied Informatics [M-WIWI-101430]

Responsible:	Prof. Dr. Andreas Oberweis
	Prof. Dr. Ali Sunyaev
Organisation:	KIT Department of Economics and Management
Part of:	Informatics

Credits	Recurrence	Duration	Level	Version
8	Each term	2 semester	1	2

Mandatory			
T-WIWI-102652	Applied Informatics I - Modelling	4 CR	Oberweis, Sure-Vetter
T-WIWI-109445	Applied Informatics II - Principles of Internet Computing: Foundations for Emerging Technologies and Future Services	4 CR	Sunyaev

Competence Certificate
The learning controls for Applied Informatics I [2511030] and II [2511032] each take the form of a written examination (60 minutes) in accordance with § 4(2), 1 SPO.

The module grade consists of the credit-weighted average of the grades for Applied Informatics I and II.

Competence Goal
The student should:

- Becomes familiar with relevant modelling languages for describing application domains and aspects of early software system design.
- Gains insight into methods and systems of computer science for the design and development of distributed information systems (supporting electronic business),
- is able to select, design, and apply these methods and systems in a way that is appropriate for the application context.

Prerequisites
None.

Content
The course Applied Informatics I [2511030] mainly adresses the early phases of the development of database-supported information systems, distributed systems for information services, intelligent systems and software systems in general. Main topics are modelling concepts and languages for describing application domains as well as static and dynamic aspects of early software system design. The course addresses in detail the following approaches: Entity-Relationship model, advanced aspects of UML, description logic, relational model, Petri nets, and event-driven process chains.

The course Applied Informatics II [2511032] provides insights into fundamental concepts and future technologies of distributed systems and Internet computing. Students should be able to select, design and apply the presented concepts and technologies. The course first introduces basic concepts of distributed systems (e.g. design of architectures for distributed systems, internet architectures, web services, middleware).

In the second part of the course, emerging technologies of Internet computing will be examined in depth. These include, among others:

- Cloud Computing
- Edge & Fog Computing
- Internet of Things
- Blockchain
- Artificial Intelligence

Recommendation
Knowledge of the module *Basic Notions of Computer Science* as well as *Algorithms I* is expected.

Workload
See german version.

| M | 5.8 Module: Applied Microeconomics [M-WIWI-101499] |

Responsible: Prof. Dr. Johannes Philipp Reiß
Organisation: KIT Department of Economics and Management
Part of: Advanced Studies in Economics and Management (Wirtschaftswissenschaften Wahl)

Credits	Recurrence	Language	Level	Version
9	Each term	Deutsch	3	2

Election block: Wahlpflichtangebot (at least 9 credits)			
T-WIWI-102850	Introduction to Game Theory	4,5 CR	Puppe, Reiß
T-WIWI-102844	Industrial Organization	4,5 CR	Reiß
T-WIWI-100005	Competition in Networks	4,5 CR	Mitusch
T-WIWI-102739	Public Revenues	4,5 CR	Wigger
T-WIWI-102876	Auction & Mechanism Design	4,5 CR	Szech
T-WIWI-102892	Economics and Behavior	4,5 CR	Szech
T-WIWI-102792	Decision Theory	4,5 CR	Ehrhart
T-WIWI-102736	Economics III: Introduction in Econometrics	5 CR	Schienle

Competence Certificate
The assessment is carried out as partial exams (according to Section 4 (2), 1-3 SPO) of the courses of this module, whose sum of credits must meet the minimum requirement of credits of this module. The assessment procedures are described for each course of the module separately.

The overall grade of the module is the average of the grades for each course weighted by the credits and truncated after the first decimal.

Competence Goal
Students

- are introduced to the basic theoretical analysis of strategic interaction situations and shall be able to analyze situations of strategic interaction systematically and to use game theory to predict outcomes and give advice in applied economics settings, (course "Introduction to Game Theory");
- are exposed to the basic problems of imperfect competition and its implications for policy making; (course "Industrial Organization");
- are provided with the basic economics of network industries (e.g., telecom, utilities, IT, and transport sectors) and should get a vivid idea of the special characteristics of network industries concerning planning, competition, competitive distortion, and state intervention, (course "Competition in Networks").

Prerequisites
None.

Content
The module's purpose is to extend and foster skills in microeconomic theory by investigating a variety of applications. Students shall be able to analyze real-life problems using microeconomics.

Recommendation
None.

Workload
The total workload for this module is approximately 270 hours. For further information see German version.

M 5.9 Module: Basic Notions of Computer Science [M-INFO-101170]

Responsible: Dr. Sebastian Stüker
                   Thomas Worsch
Organisation: KIT Department of Informatics
Part of: Informatics

Credits	Recurrence	Duration	Language	Level	Version
6	Each winter term	1 term	Deutsch	1	1

Mandatory			
T-INFO-101965	Basic Notions of Computer Science I Pass	0 CR	Stüker, Worsch
T-INFO-101964	Basic Notions of Computer Science	6 CR	Stüker, Worsch

Competence Goal

- Students know the most important techniques for definitions and are able to read and understand such definitions.
- Students know the difference between syntax and semantics.
- Students know the most important notions from discrete mathematics and computer science and are able to use them for the description of problems and in proofs.

Content

- informal notion of algorithm, basics of correctness proofs
- computational complexity measures, hard problems
- big O notation, master theorem
- alphabets, words, formal languages
- finite acceptors, contextfree grammars
- inductive/recursive definitions, proofs by induction, closure
- relations and functions
- graphs

Workload

180 h

M	**5.10 Module: Business Administration [M-WIWI-101492]**

Responsible: Prof. Dr. Marliese Uhrig-Homburg
Prof. Dr. Christof Weinhardt
Organisation: KIT Department of Economics and Management
Part of: Business Administration

Credits	Recurrence	Duration	Level	Version
8	Each term	2 semester	1	1

Mandatory			
T-WIWI-102816	Financial Accounting and Cost Accounting	4 CR	Strych
T-WIWI-102818	Business Administration: Production Economics and Marketing	4 CR	Fichtner, Klarmann, Lützkendorf, Ruckes, Schultmann

Competence Certificate
The assessments of the courses are written examinations (90 minutes each) according to §4(2), 1 of the examination regulation.
The overall grade of the module is the average of the grades for each course weighted by the credits and truncated after the first decimal.

Competence Goal
The student should be able to

- deal with advanced topics in accounting,
- describe the impacts and features of marketing instruments,
- knows the problem formulation and theories of production management, including the areas of energy, construction, real-estate and ergonomics,
- evaluate information as a competitive factor and is in control of the terminology and the methods to asses information.

Prerequisites
None

Content
The institutional framework and the modelling and formal description of a company's decisions play an essential role in this module. This module contains problems in procurement and materials management as well as in logistics. Modern production processes for goods and services are systematically presented. Marketing research and knowledge of the range of marketing instruments are fundamental for decisions in a competitive market environment. Advanced topics in accounting are also taught.

Recommendation
It is highly recommended to fulfil this module only after completing the module *Foundations in Business Administration*.

Workload
See German version.

M   5.11 Module: Business Processes and Information Systems [M-WIWI-101476]

Responsible: Prof. Dr. Andreas Oberweis
Organisation: KIT Department of Economics and Management
Part of: **Advanced Studies in Informatics**

Credits	Recurrence	Duration	Level	Version
9	Each term	1 semester	3	3

Election block: Wahlpflichtangebot (between 1 and 2 items)			
T-WIWI-102697	**Business Process Modelling** neu	5 CR	Oberweis
T-WIWI-109799	**Process Mining** neu	5 CR	Oberweis
Election block: Ergänzungsangebot (at most 2 items)			
T-WIWI-102668	**Enterprise Architecture Management** neu	5 CR	Wolf
T-WIWI-102675	**Computing Lab Business Information Systems** neu	4 CR	Oberweis, Sure-Vetter
T-WIWI-102910	**Special Topics of Applied Informatics** neu	5 CR	Oberweis, Sack, Sunyaev, Sure-Vetter, Volkamer, Zöllner
T-WIWI-104679	**Foundations of Mobile Business** neu	5 CR	Oberweis, Schiefer

Competence Certificate
The assessment mix of each course of this module is defined for each course separately. The final mark for the module is the average of the marks for each course weighted by the credits and truncated after the first decimal.

Competence Goal
Students

- design architecture models of enterprise information systems and compare alternative designs,
- explain the concepts and principles of process modeling languages and methods, apply the methods in a concrete situation and evaluate the results,
- choose an appropriate modeling language according to a given context for analysing, modeling and improving business processes.

Prerequisites
*At least one of the coursesWorkflowmangement*or *Modellierung von Geschäftsprozessen*has to be attended.

Content
Modeling the relevant aspects of a business process is the basis for efficient and effective support of this process in an enterprise information system.Detailed knowledge of languages, methods and software tools for supporting business process modeling is taught in this module.

Additionally fundamentals of software quality management are considered in this module. Maturity models like CMMI or SPICE for evaluation and improvement of a software development process are introduced.

M   5.12 Module: Commercial Law [M-INFO-101191]

Responsible: Prof. Dr. Thomas Dreier
Organisation: KIT Department of Informatics
Part of: Law

Credits	Recurrence	Duration	Language	Level	Version
9	Each term	2 semester	Deutsch	2	2

Mandatory			
T-INFO-102013	Exercises in Civil Law neu	9 CR	Dreier, Matz

M 5.13 Module: Communication and Database Systems [M-INFO-101178]

Responsible: Prof. Dr.-Ing. Klemens Böhm
Prof. Dr. Martina Zitterbart
Organisation: KIT Department of Informatics
Part of: Advanced Studies in Informatics

Credits	Recurrence	Duration	Language	Level	Version
8	Each summer term	1 semester	Deutsch	3	1

Mandatory			
T-INFO-101497	Database Systems	4 CR	Böhm
T-INFO-102015	Introduction in Computer Networks	4 CR	Zitterbart

Competence Goal

The students will

- have learned fundamentals of data communication as well as the design of communication systems,
- be familiar with the composition of the different protocols and their mechanisms and be able to design simple protocols on their own,
- have understood the relationships between the different communication layers,
- be able to explain the benefits of database technology at the end of the course,
- have understood the development of database applications and be able to set up and access simple databases,
- be familiar with the terminology and the underlying database theory.

Content

Distributed information systems are worldwide information repositories which are accessible by everybody at any place of the world at any time. The physical distance is bridged by telecommunication systems, while database management technology manages and coordinates data for arbitrary periods of time. In order to understand globally running processes, one has to understand both data transmission techniques and database technology. Besides the telecommunication and database technologies on their own, an understanding of their cooperation is required, too.

Workload

approx. 240 h

M	**5.14 Module: Computer Architecture [M-INFO-100818]**

Responsible: Prof. Dr.-Ing. Jörg Henkel
Prof. Dr. Wolfgang Karl

Organisation: KIT Department of Informatics

Part of: **Advanced Studies in Informatics**

Credits	Recurrence	Duration	Language	Level	Version
6	Each summer term	1 term	Deutsch	3	1

Mandatory			
T-INFO-101355	Computer Architecture	6 CR	Henkel, Karl

M 5.15 Module: Computer Engineering [M-INFO-101836]

Responsible: Prof. Dr. Wolfgang Karl
Organisation: KIT Department of Informatics
Part of: Advanced Studies in Informatics

Credits	Recurrence	Language	Level	Version
6	Each winter term	Deutsch	3	1

Mandatory			
T-INFO-103531	Computer Organization	6 CR	Karl

M 5.16 Module: Constitutional and Administrative Law [M-INFO-101192]

Responsible: Prof. Dr. Nikolaus Marsch
Organisation: KIT Department of Informatics
Part of: Law

Credits	Recurrence	Duration	Language	Level	Version
6	Each term	2 semester	Deutsch	3	1

Mandatory			
T-INFO-101963	Public Law I – Basic Principles	3 CR	Marsch
T-INFO-102042	Public Law II	3 CR	Marsch

Workload
See German version.

M 5.17 Module: CRM and Service Management [M-WIWI-101460]

Responsible: Prof. Dr. Andreas Geyer-Schulz
Organisation: KIT Department of Economics and Management
Part of: Advanced Studies in Economics and Management (Betriebswirtschaftslehre Wahl)
Advanced Studies in Economics and Management (Wirtschaftswissenschaften Wahl)

Credits	Recurrence	Duration	Level	Version
9	Each term	1 semester	3	1

Election block: Wahlpflichtangebot (2 items)			
T-WIWI-102596	Analytical CRM	4,5 CR	Geyer-Schulz
T-WIWI-102597	Operative CRM	4,5 CR	Geyer-Schulz
T-WIWI-102595	Customer Relationship Management	4,5 CR	Geyer-Schulz

Competence Certificate

The assessment is carried out as partial exams (according to § 4 (1) S. 2 2nd clause of the examination regulation) of the single courses of this module, whose sum of credits must meet the minimum requirement of credits of this module.

The overall grade of the module is the average of the grades for each course weighted by the credits and truncated after the first decimal.

Competence Goal

The student

- understands service management as the managerial foundation of customer relationship management and the resulting implications for strategic management, the organisational structure, and the functional areas of the comapany,
- develops and designs service concepts and service systems on a conceptual level,
- works in teams on case studies and respects project dates, integrates international literature of the discipline,
- knows the current developments in CRM in science as well as in industry,
- knows the scientific methods (from business administration, statistics, informatics) which are most relevant for analytic CRM and he autonomously applies these methods to standard cases,
- designs, implements, and analyzes operative CRM processes in concrete application domains (e.g. campaign management, call center management, ...).

Prerequisites

None

Content

In the module CRM and Service Management we teach the principles of modern customer-oriented management and its support by system architectures and CRM software packages. Choosing customer relationship management as a company's strategy requires service management and a strict implementation of service management in all parts of the company.

For operative CRM we present the design of customer-oriented, IT-supported business processes based on business process modelling and we explain these processes in concrete application scenarios (e.g. marketing campaign management, call center management, sales force management, field services, ...).

Analytic CRM is dedicated to improve the use of knowledge about customers in the broadest sense for decision-making (e.g. product-mix decisions, bonus programs based on customer loyalty, ...) and for the improvement of services. A requirement for this is the tight integration of operative systems with a data warehouse, the development of customer-oriented and flexible reporting systems, and – last but not least – the application of statistical methods (clustering, regression, stochastic models, ...).

Annotation

The lecture *Customer Relationship Management* [2540508] is given in English.

Workload
The total amount of work for this module is approximately 270 hours (9 credits). The subdivision is based on the credits of the courses of the module.
The total number of hours per course results from the time of visiting the lectures and exercises, as well as from the exam periods and the time that is required to achieve the objectives of the module as an average student with an average performance.

M	5.18 Module: Database Systems in Theory and Practice [M-INFO-101229]

Responsible: Prof. Dr.-Ing. Klemens Böhm
Organisation: KIT Department of Informatics
Part of: Advanced Studies in Informatics

Credits	Duration	Level	Version
9	2 semester	3	1

Mandatory			
T-INFO-103552	Lab: Working with Database Systems	4 CR	Böhm
Election block: Datenbanksysteme in Theorie und Praxis (at least 1 item as well as at least 5 credits)			
T-INFO-101317	Deployment of Database Systems	5 CR	Böhm
T-INFO-101305	Big Data Analytics	5 CR	Böhm

Modeled Conditions
The following conditions have to be fulfilled:

1. The course T-INFO-101497 – Database Systems must have been passed.

Workload
120 h

M   5.19 Module: Design, Construction and Sustainability Assessment of Buildings [M-WIWI-101467]

Responsible: Prof. Dr.-Ing. Thomas Lützkendorf
Organisation: KIT Department of Economics and Management
Part of: Advanced Studies in Economics and Management (Betriebswirtschaftslehre Wahl)
           Advanced Studies in Economics and Management (Wirtschaftswissenschaften Wahl)

Credits	Recurrence	Duration	Level	Version
9	Each term	2 semester	3	2

Mandatory			
T-WIWI-102742	Design, Construction and Sustainability Assessment of Buildings I	4,5 CR	Lützkendorf
T-WIWI-102743	Design, Construction and Sustainability Assessment of Buildings II	4,5 CR	Lützkendorf

Competence Certificate

The assessment is carried out as partial exams (according to Section 4 (2), 1-3 SPO) of the core course and further single courses of this module, whose sum of credits must meet the minimum requirement of credits of this module. The assessment procedures are described for each course of the module separately.
The overall grade of the module is the average of the grades for each course weighted by the credits and truncated after the first decimal.

Competence Goal

The student

- knows the basics of sustainable design, construction and operation of buildings with an emphasis on building ecology
- has knowledge of building ecology assessment procedures and tools for design and assessment
- is capable of applying this knowledge to assessing the ecological advantageousness of buildings as well as their contribution to a sustainable development.

Prerequisites

None

Content

Sustainable design, construction and operation of buildings currently are predominant topics of the real estate sector, as well as "green buildings". Not only designers and civil engineers, but also other actors who are concerned with project development, financing and insurance of buildings or portfolio management are interested in these topics.
On the one hand the courses included in this module cover the basics of energy-efficient, resource-saving and health-supporting design and construction of buildings. On the other hand fundamental assessment procedures for analysing and communicating the ecological advantageousness of technical solutions are discussed. With the basics of green building certification systems the lectures provide presently strongly demanded knowledge.

Additionally, videos and simulation tools are used for providing a better understanding of the content of teaching.

Recommendation

The combination with the module *Real Estate Management* is recommended.

Furthermore a combination with courses in the area of

- Industrial production (energy flow in the economy, energy politics, emissions)
- Civil engineering and architecture (building physics, building construction)

is recommended.

Workload

The total workload for this module is approximately 270 hours. For further information see German version.

M 5.20 Module: Digital Circuits Design [M-INFO-102978]

Responsible: Prof. Dr.-Ing. Uwe Hanebeck
Organisation: KIT Department of Informatics
Part of: Advanced Studies in Informatics

Credits	Recurrence	Language	Level	Version
6	Each winter term	Deutsch	3	1

Mandatory			
T-INFO-103469	Digital Circuits Design	6 CR	Karl

M 5.21 Module: eBusiness and Service Management [M-WIWI-101434]

Responsible:	Prof. Dr. Christof Weinhardt
Organisation:	KIT Department of Economics and Management
Part of:	Advanced Studies in Economics and Management (Betriebswirtschaftslehre Wahl)
	Advanced Studies in Economics and Management (Wirtschaftswissenschaften Wahl)

Credits	Language	Level	Version
9	Deutsch	3	7

Election block: Wahlpflichtangebot (9 credits)			
T-WIWI-109938	Digital Services neu	4,5 CR	
T-WIWI-109941	eFinance: Information Systems for Securities Trading neu	4,5 CR	Weinhardt
T-WIWI-109816	Foundations of Interactive Systems neu	4,5 CR	Mädche
T-WIWI-109936	Platform Economy neu	4,5 CR	Weinhardt
T-WIWI-109940	Special Topics in Information Systems neu	4,5 CR	Weinhardt
T-WIWI-109808	Wildcard eBusiness and Service Management neu	4,5 CR	

Competence Certificate

The assessment is carried out as partial exams (according to Section 4 (2), 1-3 SPO) of the single courses of this module, whose sum of credits must meet the minimum requirement of credits of this module. The assessment procedures are described for each course of the module separately.

The overall grade of the module is the average of the grades for each course weighted by the credits and truncated after the first decimal.

Competence Goal

The students

- understand the strategic and operative design of information and information products,
- analyze the role of information on markets,
- evaluate case studies regarding information products,
- develop solutions in teams.

Prerequisites

None

Content

This module gives an overview of the mutual dependencies of strategic management and information systems. The central role of information is exemplified by the structuring concept of the information life cycle.

The single phases of this life cycle from generation over allocation until dissemination and use of the information are analyzed from a business and microeconomic perspective, applying classical and new theories. The state of the art of economic theory on aspects of the information life cycle are presented. The lecture is complemented by exercise courses. The courses "Platform Economy", "eFinance: Information systems in finance" and "eServices" constitute three different application domains in which the basic principles of the Internet Economy are deepened. In the core lecture "Platform Economy" the focus is set on markets between two parties that act through an intermediary on an Internet platform. Topics discussed are network effects, peer-to-peer markets, blockchains and marketdesign. The course is held in English and teaches parts of the syllabus with the support of a case study in which students analyze a platform.

The course "eFinance: information systems for securities trading" provides theoretically profound and also practical-oriented background about the functioning of international financial markets. The focus is placed on the economic and technical design of markets as information processing systems.

In "eServices" the increasing impact of electronic services compared to the traditional services is outlined. The Information- und Communication Technologies enable the provision of services, which are mainly characterized by interactivity and individuality. This course provides basic knowledge about the development and management of ICT-based servies.

The theoretic fundamentals of Information systems can be enriched by a practical experience in Special Topics in Information Engineering and Management. Any practical Seminar at the IM can be chosen for the course Special Topics in Information systems.

Annotation

All practical Seminars offered at the IM can be chosen for *Special Topics in Information Systems*. Please update yourself on www.iism.kit.edu/im/lehre

Workload

The total workload of the module is about 240 hours. The workload is proportional to the credit points of the individual courses.

M   5.22 Module: Economic Policy I [M-WIWI-101668]

Responsible: Prof. Dr. Ingrid Ott
Organisation: KIT Department of Economics and Management
Part of: Advanced Studies in Economics and Management (Wirtschaftswissenschaften Wahl)

Credits	Recurrence	Language	Level	Version
9	Each term	Deutsch	3	7

Election block: Wahlpflichtangebot (9 credits)			
T-WIWI-103213	Basic Principles of Economic Policy	4,5 CR	Ott
T-WIWI-109121	Macroeconomic Theory	4,5 CR	Brumm
T-WIWI-102739	Public Revenues	4,5 CR	Wigger
T-WIWI-102908	Personnel Policies and Labor Market Institutions	4,5 CR	Nieken
T-WIWI-100005	Competition in Networks	4,5 CR	Mitusch

Competence Certificate

The assessment is carried out as partial written exams (according to Section 4(2), 1 of the examination regulation) of the single courses of this module, whose sum of credits must meet the minimum requirement of credits of this module. The exams are offered at the beginning of the recess period about the subject matter of the latest held lecture. Re-examinations are offerd at every ordinary examination date. The assessment procedures are described for each course of the module seperately.

The overall grade for the module is the average of the grades for each course weighted by the credits and truncated after the first decimal.

Competence Goal

Students shall be given the ability to

- understand and deepen basic concepts of micro- and macroeconomic theories
- apply those theories to economic policy issues
- understand government interventions in the market and their legitimation from the perspective of economic welfare
- learn how theory-based policy recommendations are derived

Prerequisites

None.

Content

- Intervention in the market: micro-economic perspective
- Intervention in the market: macroeconomic perspective
- Institutional economic aspects
- Economic policy and welfare economics
- Carriers of economic policy: political-economic aspects

Recommendation

Basic knowledge of micro- and macroeconomics is assumed, as taught in the courses Economics I [2610012], and Economics II [2600014].

Workload

Total expenditure of time for 9 credits: 270 hours.

Attendance time per lecture: 3x14h

Preparation and wrap-up time per lecture: 3x14h

Rest: Exam Preparation

The exact distribution is subject to the credits of the courses of the module.

M 5.23 Module: Economic Theory [M-WIWI-101501]

Responsible: Prof. Dr. Clemens Puppe
Organisation: KIT Department of Economics and Management
Part of: Advanced Studies in Economics and Management (Wirtschaftswissenschaften Wahl)

Credits	Recurrence	Duration	Level	Version
9	Each term	2 semester	3	2

Election block: Wahlpflichtangebot (9 credits)			
T-WIWI-102609	Advanced Topics in Economic Theory	4,5 CR	Mitusch
T-WIWI-102876	Auction & Mechanism Design	4,5 CR	Szech
T-WIWI-102892	Economics and Behavior	4,5 CR	Szech
T-WIWI-102850	Introduction to Game Theory	4,5 CR	Puppe, Reiß
T-WIWI-102844	Industrial Organization	4,5 CR	Reiß
T-WIWI-109121	Macroeconomic Theory	4,5 CR	Brumm
T-WIWI-102610	Welfare Economics	4,5 CR	Puppe

Competence Certificate

The assessment is carried out as partial exams (according to Section 4(2), 1 or 2 of the examination regulation) of the single courses of this module, whose sum of credits must meet the minimum requirement of credits of this module. The assessment procedures are described for each course of the module seperately.

The overall grade of the module is the average of the grades for each course weighted by the credits and truncated after the first decimal.

Competence Goal

See German version.

Prerequisites

None

Content

The lecture Introduction to Game Theory focuses on the basics of non-cooperative game theory. Model assumptions, solution concepts and applications are discussed in detail both for simultaneous games (normal form games) and for sequential games (extensive form games). Classical equilibrium concepts like the Nash equilibrium or the subgame perfect equilibrium, but also advanced concepts will be discussed in detail. If necessary, a brief insight into cooperative game theory will also be given.

The course Auction & Mechanism Design starts with the basic theory of equilibrium behavior and yield management in single object standard auctions. After introducing the yield equivalence theorem for standard auctions, the focus shifts to mechanism design and its applications for single-object auctions and bilateral exchanges.

The course Economics and Behavior introduces fundamental topics of behavioural economics in terms of content and methodology. Students will also gain insight into the design of economic experimental studies. Students will also be introduced to the reading of and critical examination of current research in behavioural economics.

Recommendation

None

Annotation

The course T-WIWI-102609 - Advanced Topics in Economic Theory is currently not available.

M 5.24 Module: Economics [M-WIWI-101431]

Responsible:	Prof. Dr. Clemens Puppe
Organisation:	KIT Department of Economics and Management
Part of:	Economics

Credits	Recurrence	Duration	Level	Version
5	Each term	1 semester	1	2

Mandatory		
T-WIWI-102708	Economics I: Microeconomics	5 CR	Puppe, Reiß

Competence Certificate
The assessment of the module is a written examination according to §4(2), 1 of the examination regulation. The grade of the module corresponds to the grade of this examination.
The main exam takes place subsequent to the lectur. The re-examination is offered at the same examination period. Only repeating candidates are entitled for taking place the re-examination. For a detailed description on the exam regulations see the information of the respective chair.

Attention: This module is part of the Orientierungsprüfung according to §10 (1), SPO 2009 resp. §8 (1) SPO 2005. The examen needs to be passed until the end of the examination period of the second semester or in case of repetition until the the end of the examination period of the third semester.

Competence Goal
It is the main aim of this module to provide basic knowledge in economic modelling. In particular, the student should be able to analyze market processes and the determinants of market results. Furthermore, she should be able to evaluate the effects of economic policy measures on market behavior and propose alternative, more effective policy measures.
In particular, the student should learn

- to apply simple microeconomic concepts,
- to analyze the structure of real world economic phenomena,
- to judge the possible effects of economic policy measures on the behavior of economic agents (in simple decision problems),
- to suggest alternative policy measures,
- to analyze as a participant of a tutorial simple economic problems by solving written exercises and to present the results of the exercises on the blackboard,
- to become familiar with the basic literature on microeconomics.

The student should gain basic knowledge in order to help in practical problems

- to analyze the structure of microeconomics relationships and to present own problem solutions,
- solve simple economic decision problems.

Prerequisites
None

Content
In the two main parts of the course, problems of microeconomic decision making (household and firm behavior) and problems of commodity allocation on markets (market equilibria and their efficiency properties of markets) are discussed. In the final part of the course, basics of imperfect competition (oligopolistic markets) and of game theory as well as welfare economics are presented.

Annotation
When personal resources are available students' tutorials will be established.

Workload
See German version.

M 5.25 Module: eFinance [M-WIWI-101402]

Responsible:	Prof. Dr. Christof Weinhardt
Organisation:	KIT Department of Economics and Management
Part of:	Advanced Studies in Economics and Management (Betriebswirtschaftslehre Wahl)
	Advanced Studies in Economics and Management (Wirtschaftswissenschaften Wahl)

Credits	Recurrence	Duration	Level	Version
9	Each term	2 semester	3	5

Mandatory			
T-WIWI-109941	eFinance: Information Systems for Securities Trading neu	4,5 CR	Weinhardt
Election block: Ergänzungsangebot (4,5 credits)			
T-WIWI-102625	Exchanges neu	1,5 CR	Franke
T-WIWI-102643	Derivatives neu	4,5 CR	Uhrig-Homburg
T-WIWI-102646	International Finance neu	3 CR	Uhrig-Homburg

Competence Certificate

The assessment is carried out as partial exams (according to Section 4 (2), 1-3 SPO) of the core course and further single courses of this module, whose sum of credits must meet the minimum requirement of credits of this module. The assessment procedures are described for each course of the module separately.

The overall grade of the module is the average of the grades for each course weighted by the credits and truncated after the first decimal.

Competence Goal

The students

- are able to understand and analyse the value creation chain in stock broking,
- are able to adequately identify, design and use methods and systems to solve problems in finance,
- are able to evaluate and criticize investment decisions by traders,
- are able to apply theoretical methods of econometrics,
- learn to elaborate solutions in a team.

Prerequisites

The course *eFinance: Information Systems for Securities Trading* [2540454] is compulsory and must be examined.

Content

The module "eFinance: Information engineering and management in finance" addresses current problems in the finance sector. It is investigated the role of information and knowledge in the finance sector and how information systems can solve or extenuate them. Speakers from practice will contribute to lectures with their broad knowledge. Core courses of the module deal with the background of banks and insurance companies and the electronic commerce of stocks in global finance markets. In addtion the course Derivatives offers an insight into future and forward contracts as well as the assesment of options. Exchanges and International Finance are also alternatives which provide a suplementary understanding for capital markets.

Information management topics are in the focus of the lecture "eFinance: information engineering and management for securities trading". For the functioning of the international finance markets, it is necessary that there is an efficient information flow. Also, the regulatory frameworks play an important role. In this context, the role and the functioning of (electronic) stock markets, online brokers and other finance intermediaries and their platforms are presented. Not only IT concepts of German finance intermediaries are presented, but also international system approaches will be compared. The lecture is supplemented by speakers from the practice (and excursions, if possible) coming from the Deutsche Börse and the Stuttgart Stock Exchange.

Annotation

The current seminar courses for this semester, which are complementary to this module, are listed on following webpage: the http://www.iism.kit.edu/im/lehre

Workload

The total workload of the module is about 240 hours. The workload is proportional to the credit points of the individual courses.

M	**5.26 Module: Energy Economics [M-WIWI-101464]**

Responsible: Prof. Dr. Wolf Fichtner
Organisation: KIT Department of Economics and Management
Part of: Advanced Studies in Economics and Management (Betriebswirtschaftslehre Wahl)
Advanced Studies in Economics and Management (Wirtschaftswissenschaften Wahl)

Credits	Recurrence	Duration	Level	Version
9	Each term	1 semester	3	2

Mandatory			
T-WIWI-102746	Introduction to Energy Economics	5,5 CR	Fichtner
Election block: Ergänzungsangebot (3,5 credits)			
T-WIWI-100806	Renewable Energy-Resources, Technologies and Economics	3,5 CR	Jochem, McKenna
T-WIWI-102607	Energy Policy	3,5 CR	Wietschel

Competence Certificate
The assessment is carried out as partial written exams (according to Section 4(2), 1 of the examination regulation) about the lecture *Introduction into Energy Economics* [2581010] and one optional lecture of the module. The examinations are offered every semester. Re-examinations are offered at every ordinary examination date. The assessment procedures are described for each course of the module seperately.

The overall grade of the module is the average of the grades for each course weighted by the credits and truncated after the first decimal.

Competence Goal
The student

- is able to understand interdependencies in energy economics and to evaluate ecological impacts in energy supply,
- is able to assess the different energy carriers and their characteristics,
- knows the energy political framework conditions,
- gains knowledge about new market-based conditions and the cost and potentials of renewable energies in particular.

Prerequisites
The lecture *Introduction into Energy Economics* [2581010] has to be examined.

Content
Introduction to Energy Economics: Characterisation (reserves, suppliers, cost, technologies) of different energy carriers (coal, gas, oil, electricity, heat etc.)

Renewable Energy - Resources, Technology and Economics: Characterisation of different renewable energy carriers (wind, solar, hydro, geothermal etc.)

Energy Policy: Management of energy flows, energy-political targets and instruments (emission trading etc.)

Recommendation
The courses are conceived in a way that they can be attended independently from each other. Therefore, it is possible to start the module in winter and summer term.

Annotation
Additional study courses (E.g. from other universities) can be transferred to the grade of the module on special request at the institute.

Workload
The total workload for this module is approximately 270 hours. For further information see German version.

M 5.27 Module: Essentials of Finance [M-WIWI-101435]

Responsible: Prof. Dr. Martin Ruckes
Prof. Dr. Marliese Uhrig-Homburg

Organisation: KIT Department of Economics and Management

Part of: Advanced Studies in Economics and Management (Betriebswirtschaftslehre Wahl)
Advanced Studies in Economics and Management (Wirtschaftswissenschaften Wahl)

Credits	Recurrence	Duration	Level	Version
9	Each summer term	1 semester	3	1

Mandatory			
T-WIWI-102604	Investments	4,5 CR	Uhrig-Homburg
T-WIWI-102605	Financial Management	4,5 CR	Ruckes

Competence Certificate

The assessment is carried out as partial written exams (according to Section 4(2), 1 of the examination regulation) of the single courses of this module, whose sum of credits must meet the minimum requirement of credits of this module. The examinations are offered every semester. Re-examinations are offered at every ordinary examination date. The assessment procedures are described for each course of the module seperately.

The overall grade of the module is the average of the grades for each course weighted by the credits and truncated after the first decimal.

Competence Goal

The student

- has fundamental skills in modern finance
- has fundamental skills to support investment decisions on stock, bond and derivative markets
- applies concrete models to assess investment decisions on financial markets as well as corporate investment and financing decisions.

Prerequisites

None

Content

The module *Essentials of Finance* deals with fundamental issues in modern finance. The courses discuss fundamentals of the valuation of stocks. A further focus of this module is on modern portfolio theory and analytical methods of capital budgeting and corporate finance.

Workload

The total workload of the module is about 240 hours. The workload is proportional to the credit points of the individual courses.

M   5.28 Module: Foundations in Business Administration [M-WIWI-101491]

Responsible: Prof. Dr. Marliese Uhrig-Homburg
                   Prof. Dr. Christof Weinhardt
Organisation: KIT Department of Economics and Management
Part of: Business Administration

Credits	Recurrence	Duration	Level	Version
8	Each term	2 semester	1	1

Mandatory			
T-WIWI-102819	Business Administration: Finance and Accounting	4 CR	Ruckes, Uhrig-Homburg, Wouters
T-WIWI-102757	Introduction to Information Engineering and Management	4 CR	Geyer-Schulz, Weinhardt

Competence Certificate
The assessment is carried out as partial exams (according to §4(2), 1-3 of the examination regulation) of the single courses of this module. The assessment procedures are described for each course of the module separately. The overall grade of the module is the average of the grades for each course weighted by the credits and truncated after the first decimal.

Competence Goal
The objectives of this module are that the student is capable of dealing with issues in finance, investments, accounting and information engineering and management.

Prerequisites
None

Content
The institutional framework and the modelling and formal description of a company's decisions play an essential role in this module. The basic idea and the foundations of static and dynamic investment rules are presented and applied to problems in procurement and materials management as well as in logistics. Modern production processes for goods and services are systematically presented. Marketing research and knowledge of the range of marketing instruments are fundamental for decisions in a competitive market environment. The foundations of corporate finance are treated with a strong emphasis of the links to the capital market. Investment rules and corporate finance are instrumental for answering questions of source and application of funds, comparable to the lending and deposit business in banking. also an introduction to financial and management accoutning is provided. The organisation of company and the problems of management and control constitute an other important aspect of business administration and management science. Finally, the process of value creation and distribution as well as the principles of the taxation of a company are treated with an emphasis on the analysis of the profit and loss statement.

Two case studies, namely the foundation of an innovative information service company and the process chain of a B2B direct marketing company from the customer to the producer, focus on the interdisciplinary links between legal framework, advanced information technology, and the resulting design options for business processes.

Workload
See German version.

M 5.29 Module: Foundations of Information Systems [M-INFO-101193]

Responsible: Prof. Dr.-Ing. Klemens Böhm
Organisation: KIT Department of Informatics
Part of: Advanced Studies in Informatics

Credits	Recurrence	Duration	Level	Version
9	Each term	1 semester	3	3

Election block: Grundlagen von Informationssystemen (at least 1 item as well as at least 4 credits)			
T-INFO-101977	Selling IT-Solutions Professionally	1,5 CR	Böhm
T-INFO-101975	Consulting in Practice	1,5 CR	Böhm
T-INFO-101976	Project Management in Practice	1,5 CR	Böhm
T-INFO-103552	Lab: Working with Database Systems	4 CR	Böhm
T-INFO-105742	Big Data Analytics 2	3 CR	Böhm
T-INFO-101305	Big Data Analytics	5 CR	Böhm
T-INFO-101317	Deployment of Database Systems	5 CR	Böhm
T-INFO-101257	Mechanisms and Applications of Workflow Systems	5 CR	Mülle
Election block: Grundlagen von Informationssystemen -- Pflichtblock (at least 1 item as well as at least 5 credits)			
T-INFO-101305	Big Data Analytics	5 CR	Böhm
T-INFO-101317	Deployment of Database Systems	5 CR	Böhm
T-INFO-101257	Mechanisms and Applications of Workflow Systems	5 CR	Mülle

Competence Goal
The students

- see the necessity of specialised systems for information management and are able to define and deploy decision criteria for purchasing such software,
- are aware of the fundamental approaches in information systems and are able to judge their potential applications,
- understand database applications and develop simple database applications on their own,
- are able to communicate at a professional level about technical aspects of information and knowledge management.

Prerequisites
None

Content
This module aims at exposing students to modern information systems. Beyond fundamental theory and concepts, this module covers the deployment of such technology.

Recommendation
It is recommended to take this module after completition of the module *Communication and Database Systems* [IW3INKD].

Annotation
The courses in this module are offered irregularly, however, the exam can be taken anytime.

Workload
approx. 300 h
For further details see the German version.

M	**5.30 Module: Foundations of Marketing [M-WIWI-101424]**

Responsible: Prof. Dr. Martin Klarmann
Organisation: KIT Department of Economics and Management
Part of: Advanced Studies in Economics and Management (Betriebswirtschaftslehre Wahl)
Advanced Studies in Economics and Management (Wirtschaftswissenschaften Wahl)

Credits	Recurrence	Duration	Level	Version
9	Each term	1 semester	3	4

Mandatory			
T-WIWI-102805	Managing the Marketing Mix ^{neu}	4,5 CR	Klarmann
Election block: Ergänzungsangebot (at least 4,5 credits)			
T-WIWI-102806	Services Marketing and B2B Marketing ^{neu}	3 CR	Klarmann
T-WIWI-102807	International Marketing ^{neu}	1,5 CR	Feurer

Competence Certificate
The assessment is carried out as partial exams (according to Section 4 (2), 1-3 SPO) of the core course and further single courses of this module, whose sum of credits must meet the minimum requirement of credits of this module. The assessment procedures are described for each course of the module separately.

The overall grade of the module is the average of the grades for each course weighted by the credits and truncated after the first decimal.

Prerequisites
The course *Marketing Mix* is compulsory and must be examined.

Content
The core course of the module is "Marketing Mix". This course is compulsory and must be examined. "Marketing Mix" contains instruments and methods that enable you to goal-oriented decisions in the operative marketing management (product management, pricing, promotion and sales management).

To deepen the marketing knowledge students can complete the courses "Services- and B2B-Marketing" and "International Marketing".

Annotation
For further information please contact Marketing & Sales Research Group (marketing.iism.kit.edu).

Workload
The total workload for this module is approximately 270 hours. For further information see German version.

M 5.31 Module: Fundamentals of Digital Service Systems [M-WIWI-102752]

Responsible:	Prof. Dr. Gerhard Satzger
	Prof. Dr. Christof Weinhardt
Organisation:	KIT Department of Economics and Management
Part of:	Advanced Studies in Economics and Management (Betriebswirtschaftslehre Wahl)
	Advanced Studies in Economics and Management (Wirtschaftswissenschaften Wahl)

Credits	Language	Level	Version
9	Deutsch	3	4

Election block: Wahlpflichtangebot (9 credits)			
T-WIWI-109938	Digital Services ^{neu}	4,5 CR	
T-WIWI-109816	Foundations of Interactive Systems ^{neu}	4,5 CR	Mädche
T-WIWI-105711	Practical Seminar Digital Services ^{neu}	4,5 CR	Fichtner, Mädche, Nickel, Satzger, Sure-Vetter, Weinhardt

Competence Certificate

The assessment is carried out as partial exams (according to Section 4 (2), 1-3 SPO), whose sum of credits must meet the minimum requirement of credits of this module. The assessment procedures are described for each course of the module separately.

The overall grade of the module is the average of the grades for each course weighted by the credits and truncated after the first decimal.

Competence Goal

Students

- understand services from different perspectives and the concept of value creation in service networks
- know about the concepts, methods and tools for the design, modelling, development and management of digital services and are able to use them
- understand the basic characteristics and effects of integrated information system as a an integral element of digital services
- gain experience in group work as well as in the analysis of case studies and the professional presentation of research results
- practice skills in the English language in preparation of jobs in an international environment

Prerequisites

None

Content

Global economy is increasingly determined by services: in industrialized countries nearly 70% of gross value added is achieved in the tertiary sector. Unfortunately, for the design, development and the management of services traditional concepts focused on goods are often insufficient or inappropriate. Besides, the rapid technical advance in the information and communication technology sector pushesthe economic importance of digital services even further thus changing the competition environment. ICT-based interaction and individualization open up completely new dimensions of shared value between clients and providers, dynamic and scalable "service value networks" replace established value chains, digital services are provided globally crossing geographical boundaries. This module establishes a basis for further specialization in service innovation, service economics, service design, service modelling, service analytics as well as the transformation and coordination of service networks.

Recommendation

None

Annotation

This module is part of the KSRI teaching profile "Digital Service Systems". Further information on a service-specific profiling is available under www.ksri.kit.edu/teaching.

Workload
The total workload for this module is approximately 270 hours. For further information see German version.

M 5.32 Module: Human Resources and Organizations [M-WIWI-101513]

Responsible:	Prof. Dr. Petra Nieken
Organisation:	KIT Department of Economics and Management
Part of:	Advanced Studies in Economics and Management (Betriebswirtschaftslehre Wahl)
	Advanced Studies in Economics and Management (Wirtschaftswissenschaften Wahl)

Credits	Recurrence	Level	Version
9	Each term	3	3

Mandatory			
T-WIWI-102909	Human Resource Management	4,5 CR	Nieken
Election block: Ergänzungsangebot (between 4,5 and 5,5 credits)			
T-WIWI-102908	Personnel Policies and Labor Market Institutions	4,5 CR	Nieken
T-WIWI-102630	Managing Organizations	3,5 CR	Lindstädt
T-WIWI-102871	Problem Solving, Communication and Leadership	2 CR	Lindstädt

Competence Certificate

The assessment is carried out as partial written exams (according to Section 4(2), 1 of the examination regulation) of the single courses of this module, whose sum of credits must meet the minimum requirement of credits of this module. The examinations are offered every semester. Re-examinations are offered at every ordinary examination date. The assessment procedures are described for each course of the module seperately.

The overall grade of the module is the average of the grades for each course weighted by the credits and truncated after the first decimal.

Competence Goal

The student

- knows and analyzes basic concepts, instruments, and challenges of present human resource and organizational management.
- uses the techniques he / she has learned to evaluate strategic situations which occur in human resource and organizational management.
- evaluates the strengths and weaknesses of existing structures and rules based on systematic criterions.
- Discusses and evaluates the practical use of models and methods by using case studies.
- has basic knowledge of fit and challenges of different scientific methods in the context of personnel and organizational economics.

Prerequisites

The course Personalmanagement (Human Resource Management) is compulsory and must be examined.

Content

Students acquire basic knowledge in the field of human resource and organizational management. Strategic as well as operative aspects of human resource management practices are analyzed. The module offers an up-to-date overview over basic concepts and models. It also shows the strengths and weaknesses of rational concepts in human resources and organizational management.

The students learn to apply methods and instruments to plan, select, and manage staff. Current issues of organizational management or selected aspects of personnel politics are examined and evaluated.

The focus lies on the strategic analysis of decisions and the use microeconomic or behavioral approaches. Empirical results of field or lab studies are discussed critically.

Recommendation

Completion of module Business Administration is recommended.
Basic knowledge of microeconomics, game theory and statistics is recommended.

Workload

The total workload for this module is approximately 270 hours.

M 5.33 Module: Industrial Production I [M-WIWI-101437]

Responsible: Prof. Dr. Frank Schultmann
Organisation: KIT Department of Economics and Management
Part of: Advanced Studies in Economics and Management (Betriebswirtschaftslehre Wahl)
Advanced Studies in Economics and Management (Wirtschaftswissenschaften Wahl)

Credits	Recurrence	Duration	Level	Version
9	Each term	2 semester	3	2

Mandatory			
T-WIWI-102606	Fundamentals of Production Management	5,5 CR	Schultmann
Election block: Ergänzungsangebot (3,5 credits)			
T-WIWI-102820	Production Economics and Sustainability	3,5 CR	Rimbon
T-WIWI-102870	Logistics and Supply Chain Management	3,5 CR	Wiens

Competence Certificate

The assessment is carried out as partial exams (according to section 4 (2), 1 SPO) of the core course "Fundamentals of Production Management" [2581950] and one further single course of this module, whose sum of credits must meet the minimum requirement of credits of this module. The assessment procedures are described for each course of the module separately.

The overall grade of the module is the average of the grades for each course weighted by the credits and truncated after the first decimal.

Competence Goal

- Students shall be aware of the important role of industrial production and logistics for production management.
- Students shall use relevant concepts of production management and logistics in an adequate manner.
- Students shall be able to reflect on decision principles in firms and their circumstances in the light of the production management aspects studied.
- Students shall be proficient in describing essential tasks, difficulties and solutions to problems in production management and logistics
- Students shall be able to describe relevant approaches of modeling production and logistic systems.
- Students shall be aware of the important role of material and energy-flows in production systems.
- Students shall be proficient in using exemplary methods for solving selected problems.

Prerequisites

The course "Fundamentals of Production Management" [2581950] and one additional activity have to be chosen.

Content

This module is designed to introduce students into the wide area of industrial production and logistics management. It focuses on strategic production management under the aspect of sustainability. The courses use interdisciplinary approaches of systems, also theory to describe the central tasks of industrial production management and logistics. Herein, attention is drawn upon strategic corporate planning, research and development as well as site selection. Students will obtain knowledge in solving internal and external transport and storage problems with respect to supply chain management and disposal logistics.

Workload

Total effort will account to 270 hours (9 credit points) and can be allocated according to the credit point rating. Therefore, a course with 3.5 credits requires an effort of approximately 105h and a course with 5.5 credits 165h.

The total effort for each course consists of attending lectures and tutorials, examination times and the time an average student needs to prepare himself in order to pass the exam with an average grade.

M 5.34 Module: Information Security [M-WIWI-104069]

Responsible: Prof. Dr. Melanie Volkamer
Organisation: KIT Department of Economics and Management
Part of: **Advanced Studies in Informatics**

Credits	Recurrence	Duration	Level	Version
9	Each term	1 semester	3	2

Election block: Wahlpflichtangebot (at least 9 credits)			
T-WIWI-108387	**Information Security**	5 CR	Volkamer
T-WIWI-108439	**Advanced Lab Security, Usability and Society**	4 CR	Volkamer
T-WIWI-109786	**Advanced Lab Security**	4 CR	Volkamer

Competence Certificate
The module examination is carried out in the form of partial examinations on the selected courses of the module, with which the minimum requirement at creditpoints is fulfilled. The learning control is described in each course. The overall score of the module is made up of the sub-scores weighted with creditpoints and is cut off after the first comma point.

Competence Goal
The student

- can explain and apply the basics of information security
- knows appropriate measures to achieve different protection goals and can implement these measures
- can assess the quality of organisational protective measures, i. e. among other things knows what has to be taken into account when using the individual measures
- Understanding the differences between information security in the enterprise and in the private context
- knows the areas of application of a variety of relevant standards and knows their weaknesses
- knows and can explain the problems of information security which may arise from human-machine interaction
- can assess messages about detected security problems in a critical way
- can structure a software project in the field of information security and explain and present results in oral and written form
- can use the techniques of Human Centred Security and Privacy by Design to create user-friendly software.

Prerequisites
None

Content

- Basics and concepts of information security
- Understanding the protection objectives of information security and various attack models (including associated assumptions)
- introduction of measures to achieve the respective protection goals, taking into account different attack models
- Note: In contrast to the IT Security lecture, measures such as encryption algorithms are treated only abstractly, i. e. the idea of the measure, assumptions to the attacker and the deployment environment.
- Presentation and analysis of problems of information security arising from human-machine interaction and presentation of the Human Centered Security by Design approach.
- Introduction into organisational protective measures and standards to be observed for companies.

Annotation
This new module can be chosen from summer term 2018.

Workload
The total workload for this module is approximately 270 hours.

M 5.35 Module: Information Services in Networks [M-WIWI-101440]

Responsible: N.N.
Prof. Dr. Hartmut Schmeck

Organisation: KIT Department of Economics and Management

Part of: Advanced Studies in Informatics

Credits	Recurrence	Duration	Level	Version
9	Each term	1 semester	3	2

Election block: Wahlpflichtangebot (between 9 and 10 credits)			
T-WIWI-102874	Semantic Web Technologies	5 CR	Sure-Vetter
T-WIWI-103523	Advanced Lab Informatics	4 CR	Oberweis, Sack, Sunyaev, Sure-Vetter, Volkamer, Zöllner
T-INFO-101284	Integrated Network and Systems Management	4 CR	Neumair
T-INFO-101276	Data and Storage Management	4 CR	Neumair

Competence Certificate

The assessment mix of each course of this module is defined for each course separately. The final mark for the module is the average of the marks for each course weighted by the credits and truncated after the first decimal.

Prerequisites

None

Workload

The total workload for this module is approximately 270 hours. For further information see German version.

M	**5.36 Module: Intellectual Property and Data Protection [M-INFO-101253]**

Responsible: Prof. Dr. Thomas Dreier
Organisation: KIT Department of Informatics
Part of: **Advanced Studies in Law**

Credits	Recurrence	Duration	Language	Level	Version
6	Each winter term	1 semester	Deutsch	3	1

Mandatory			
T-INFO-101304	**Industrial Property and Copyright Law**	3 CR	Dreier
T-INFO-101303	**Data Protection Law**	3 CR	Marsch

Content

Building onto what the students have learned in law during the first two years of Bachelor studies, the module *Law* in the third Bachelor years has the purpose of both deepening and specialising the legal studies in areas of practical importance for information economics and management…

M 5.37 Module: Internship [M-WIWI-101433]

Responsible:	Prof. Dr. Sebastian Abeck Studiendekan der KIT-Fakultät für Wirtschaftswissenschaften
Organisation:	KIT Department of Economics and Management
Part of:	Internship

Credits	Recurrence	Level	Version
8	Once	1	1

Mandatory			
T-WIWI-103093	Internship	8 CR	Abeck, Lindstädt

Competence Certificate
The assessment is in the form of a certificate of employment about at least 6 weeks, a written report (typewritten, not handwritten) and a short presentation. The internship is not graded.

Competence Goal
This module serves to impart interdisciplinary key qualifications:

The student

- carries out professional tasks in the context of Information Engineering and Management to learn about the requirements on the engineer,
- describes in a short report the executed activities precisely and coherent, and judges about them critically,
- presents effectively is experiences gained during the internship using appropriate media support and gets involved professionally in the subsequent discussion, and
- trains via concrete and constructive criticism his/her competence for problem solving.

The presentation primarily serves for the communication between student, company, and examiner with the goal of initiating further cooperation in the context of the Bachelor thesis and/or a project

Prerequisites
None

Content
It is the responsibility of the students to apply for an internship in a suitable company or public organization at which the internship can be fulfilled.
The process for the internship has the following (sequential) steps:

1. **Choice of the examiner and of the company or organization by the student.**
   During the internship each student is attended by an examiner of the degree programme and by an advisor of the company. In case a student does not succeed in finding an examiner for the internship, he can request the assignment of an examiner from the examination board of the Bachelor programme in Information Engineering and Management. When enrolling for the internship, the student fills the form for the internship and he hands the form over to the examiner and the students' secretary. If required, the students' secretary certifies the compulsory character of the internship as part of the Bachelor programme in Information Engineering and Management.
2. **Internship**
   The student passes the internship in the chosen company or organization.
3. **Preparation of a short report and presentation:**
   At the end of the internship, the employment is proven by a certificate of employment. The examiner receives a report (maximal 2 A4 pages) and the student gives feedback on the internship with a short presentation (approx. 15 minutes) followed by a short discussion (approx. 5 minutes).
4. **Presentation and proof of performance.**
   The short presentation may by given in the form of a talk with the examiner, in a colloquium or in a seminar. The form is fixed at the registration of the internship with the examiner. The certificate of employment of the company and the short report must be delivered at the examiner *before* the presentation. Based on these, a certificate of performance if produced and transferred to the office of study ("Studienbüro").

Recommendation
It is recommended that the internship is taken between the 4th and the 5th term of the Bachelor programme Information Engineering and Management.

Annotation

The internship is regulated in §14a of the examination regulation.

Examiners are all lecturers of the degree programme.

The choice of the examiner has to be **prior** to the start of the internship (cf. content description).

The form for the internship is available at the examination offices of the two faculties participating in the programme.

Workload

See German version.

M	**5.38 Module: Introduction to Civil Law [M-INFO-101190]**

Responsible: Prof. Dr. Thomas Dreier
Organisation: KIT Department of Informatics
Part of: Law

Credits	Recurrence	Duration	Language	Level	Version
4	Each winter term	1 semester	Deutsch	1	1

Mandatory			
T-INFO-103339	Civil Law for Beginners	4 CR	Dreier

M 5.39 Module: Introduction to Data and Information Management [M-INFO-101235]

Responsible: Prof. Dr.-Ing. Klemens Böhm
Organisation: KIT Department of Informatics
Part of: **Advanced Studies in Informatics**

Credits	Recurrence	Duration	Level	Version
9	Once	1 semester	3	1

Mandatory			
T-INFO-101497	**Database Systems**	4 CR	Böhm
Election block: Grundlagen des Daten- und Informationsmanagements (at least 1 item as well as at least 5 credits)			
T-INFO-101305	**Big Data Analytics**	5 CR	Böhm
T-INFO-101317	**Deployment of Database Systems**	5 CR	Böhm
T-INFO-101977	**Selling IT-Solutions Professionally**	1,5 CR	Böhm
T-INFO-101975	**Consulting in Practice**	1,5 CR	Böhm
T-INFO-101976	**Project Management in Practice**	1,5 CR	Böhm
T-INFO-101257	**Mechanisms and Applications of Workflow Systems**	5 CR	Mülle
T-INFO-103552	**Lab: Working with Database Systems**	4 CR	Böhm

Competence Goal
The students

- see the necessity of specialised systems for information and data management and are able to define and deploy decision criteria for purchasing such software,
- are aware of the fundamental approaches in information and database systems and are able to judge their potential applications,
- understand database applications and develop simple database applications on their own,
- are able to communicate at a professional level about technical aspects of information and knowledge management

Prerequisites
None

Content
This module aims at exposing students to modern information and database systems. Beyond fundamental theory and concepts, this module covers the deployment of such technology.

M   5.40 Module: Introduction to Operations Research [M-WIWI-101418]

Responsible:	Prof. Dr. Stefan Nickel
	Prof. Dr. Steffen Rebennack
	Prof. Dr. Oliver Stein
Organisation:	KIT Department of Economics and Management
Part of:	Operations Research

Credits	Recurrence	Duration	Level	Version
9	Each summer term	2 semester	1	1

Mandatory			
T-WIWI-102758	Introduction to Operations Research I and II	9 CR	Nickel, Rebennack, Stein

Competence Certificate
The assessment of the module is carried out by a written examination (120 minutes) according to Section 4(2), 1 of the examination regulation.
In each term (usually in March and July), one examination is held for both courses.

Competence Goal
The student

- names and describes basic notions of the essential topics in Operations Research (Linear programming, graphs and networks, integer and combinatorial optimization, nonlinear programming, dynamic programming and stochastic models),
- knows the indispensable methods and models for quantitative analysis,
- models and classifies optimization problems and chooses the appropriate solution methods to solve optimization problems independently,
- validates, illustrates and interprets the obtained solutions.

Module grade calculation
The overall grade of the module is the grade of the written examination.

Prerequisites
None

Content
This module treats the following topics: linear programming, network models, integer programming, nonlinear programming, dynamic programming, queuing theory, heuristic models.
This module forms the basis of a series of advanced lectures with a focus on both theoretical and practical aspects of Operations Research.

Workload
The total workload of the module is about 240 hours. The workload is proportional to the credit points of the individual courses.

M 5.41 Module: Introduction to Statistics [M-WIWI-101432]

Responsible: Prof. Dr. Oliver Grothe
Prof. Dr. Melanie Schienle
Organisation: KIT Department of Economics and Management
Part of: Statistics

Credits	Recurrence	Duration	Level	Version
10	Each term	2 semester	1	2

Mandatory			
T-WIWI-102737	Statistics I	5 CR	Grothe, Schienle
T-WIWI-102738	Statistics II	5 CR	Grothe, Schienle

Competence Certificate

The assessment of this module consists of two written examinations according to Section 4(2), 1 of the examination regulation (one for each of the courses Statistics I and II).

The overall grade of the module is the average of the grades of these two written examinations.

Competence Goal

See German version.

Module grade calculation

The overall grade of the module is the average of the grades of these two written examinations.

Prerequisites

Keine

Content

The module contains the fundamental methods and scopes of Statistics.

A. Descriptive Statistics: univariate und bivariate analysis

B. Probability Theory: probability space, conditional and product probabilities, transformation of probabilities, parameters of location and dispersion, most important discrete and continuous distributions, covariance and correlation, limit distributions

C. Theory of estimation and testing: suffiency of statistics, point estimation (optimality, ML-method), internal estimations, linear regression

Workload

The total workload for this module is approximately 300 hours. For further information see German version.

M	**5.42 Module: IT-Security Management for Networked Systems [M-INFO-100786]**

Responsible: Prof. Dr. Hannes Hartenstein
Organisation: KIT Department of Informatics
Part of: **Advanced Studies in Informatics**

Credits	**Recurrence**	**Duration**	**Language**	**Level**	**Version**
5	Each winter term	1 term	Deutsch	3	1

Mandatory			
T-INFO-101323	**IT-Security Management for Networked Systems**	5 CR	Hartenstein

| M | **5.43 Module: Lego Mindstorms - Practical Course [M-INFO-102557]** |

Responsible: Prof. Dr.-Ing. Tamim Asfour
Organisation: KIT Department of Informatics
Part of: **Advanced Studies in Informatics**

Credits	**Language**	**Level**	**Version**
4	Deutsch	3	2

Mandatory			
T-INFO-107502	**Practical Course: Lego Mindstorms**	4 CR	Asfour

Competence Goal

The participants are able to design and construct a robot with motors and sensors using the Lego Mindstorms kit. The students are familiar with programming the Lego EV3 components using the Java programming language. They are able to understand and solve several key problems in mobile robotics, such as autonomous navigation, detection of landmarks and objects as well as obstacle avoidance. The students know how to efficiently and independently solve problems in a small group in a given time frame and are able to systematically document their work and results.

Content

In this practical course, teams of three students build and program a mobile robot using Lego Mindstorms and the Java programming language. The robots are challenged to complete a versatile parkour including sections like the traversal of a maze, following a line, crossing a bridge or avoiding obstacle. After initial building of the robots, a section of the parkour will be set up each week and tackled by the robots, for which the students have to prepare their code beforehand. A final race of the robots on the entire parkour will be held at the end of the semester.

Recommendation

Basic knowledge in JAVA is necessary for successful completion of this course.

M 5.44 Module: Mathematics I [M-MATH-101311]

Responsible: Prof. Dr. Andreas Rieder
                   Prof. Dr. Christian Wieners
Organisation: KIT Department of Mathematics
Part of: **Mathematics**

Credits	Recurrence	Duration	Level	Version
8	Once	1 semester	1	1

Mandatory			
T-MATH-102266	Mathematics I for Information Engineering and Management - Exam	7 CR	Rieder, Weiß, Wieners
T-MATH-102267	Mathematics I for Information Engineering and Management - Exercise	1 CR	Rieder, Weiß, Wieners

Competence Certificate
The assessment in this module consists of

1. a graded certificate of exercise following §4(2), 3 of the examination regulation from the exercises to mathematics I (1 credit) and
2. a written examination of 60 minutes on the lectures mathematics I following §4(2), 1 of the examination regulations (7 credits).

The grade of the module is computed as a weighted sum, where the grade of the written examiniation has a weight of 80% and the certificate a weight of 20%.

Competence Goal
Mathematical models are an important part in economical sciences. Therefore, the students need a basic knowledge in mathematics. The aim is the instruction in a comprehension of basic methods in analysis and linear algebra.

The students learn

- to use simple concepts and structures in mathematics;
- to recognize the mathematical structure of practical applications and to solve in simple cases mathematical problems;
- to comprehend the mathematical structure of more complex applications;
- to understand the mathematical basics to develop mathematical models for applications in cooperation with experts;
- to explain as a group member in the tutorial elementary mathematical structures and to stimulate in the discussion of examples the success of the group;
- to be in time for the tutorial group and for the preparation of homeworks;
- to work with basic mathematical literature.

The provides the foundations for

- comprehending the mathematical structure of more complex applications;
- developing mathematical models for applications in cooperation with experts;
- constructing algorithmical solutions of mathematical models for applications in cooperation with experts.

Prerequisites
None

Content
The lectures mathematics I and II give an overview in basic mathematical knowledge which is required to understand modern computer science and economical sciences. Part I consist of linear algebra including the basic algebraic structures, vector spaces and linear mappings. Many algebraic concepts are important for computer science. Part II consists of analysis including an introduction into the calculus of functions of one or several variables.

Annotation
None.

Workload
See German version.

M 5.45 Module: Mathematics II [M-MATH-101312]

Responsible:	Prof. Dr. Andreas Rieder
	Prof. Dr. Christian Wieners
Organisation:	KIT Department of Mathematics
Part of:	**Mathematics**

Credits	Recurrence	Duration	Level	Version
8	Once	1 semester	1	1

Mandatory			
T-MATH-102269	**Mathematics II for Information Engineering and Management - Exam**	7 CR	Rieder, Weiß, Wieners
T-MATH-102268	**Mathematics II for Information Engineering and Management - Exercise**	1 CR	Rieder, Weiß, Wieners

Competence Certificate
The assessment in this module consists of

1. a graded certificate of exercise following §4(2), 3 of the examination regulation from the exercises to mathematics II (1 credit) and
2. a written examination of 60 minutes on the lectures mathematics II following §4(2), 1 of the examination regulations (7 credits).

The grade of the module is computed as a weighted sum, where the grade of the written examiniation has a weight of 80% and the certificate a weight of 20%.

Competence Goal
Mathematical models are an important part in economical sciences. Therefore, the students need a basic knowledge in mathematics. The aim is the instruction in a comprehension of basic methods in analysis and linear algebra.

The students learn

- to use simple concepts and structures in mathematics;
- to recognize the mathematical structure of practical applications and to solve in simple cases mathematical problems;
- to comprehend the mathematical structure of more complex applications;
- to understand the mathematical basics to develop mathematical models for applications in cooperation with experts;
- to explain as a group member in the tutorial elementary mathematical structures and to stimulate in the discussion of examples the success of the group;
- to be in time for the tutorial group and for the preparation of homeworks;
- to work with basic mathematical literature.

The provides the foundations for

- comprehending the mathematical structure of more complex applications;
- developing mathematical models for applications in cooperation with experts;
- constructing algorithmical solutions of mathematical models for applications in cooperation with experts.

Content
The lectures mathematics I and II give an overview in basic mathematical knowledge which is required to understand modern computer science and economical sciences. Part I consist of linear algebra including the basic algebraic structures, vector spaces and linear mappings. Many algebraic concepts are important for computer science. Part II consists of analysis including an introduction into the calculus of functions of one or several variables.

Workload
See German version.

M   5.46 Module: Mechano-Informatics and Robotics [M-INFO-100757]

Responsible:	Prof. Dr.-Ing. Tamim Asfour
Organisation:	KIT Department of Informatics
Part of:	**Advanced Studies in Informatics**

Credits	Recurrence	Duration	Language	Level	Version
4	Each winter term	1 term	Deutsch/Englisch	3	1

Mandatory		
T-INFO-101294 **Mechano-Informatics and Robotics**	4 CR	Asfour

Competence Goal

Based on the example of robotics students understand the synergistic effects and interdisciplinarity of mechatronics and informatics, the embedded systems, the control, and the methods and the algorithms. They are acquainted with the basic terminology and the methods which are common in robotics, signal processing, action representation, machine learning and cognitive systems. They are capable of applying fundamental state-of-the-art methods and tools for the development and programming of robots. Based on examples originating from current research conducted in the fields of humanoid robotics, the students interactively learn how to identify and formalize problems and tasks and how to develop solutions in an analytical and goal-directed way.

Content

The lecture addresses various engineering and algorithmic aspects and topics in robotics which are illustrated and explained based on examples originating from current research conducted in the field of humanoid robotics. First, this lecture gives an introduction into the mathematical fundamentals which are needed to describe a robotic system as well as the basic algorithms commonly applied in motion planning.

Subsequently, models and methods are introduced with which dynamical systems can be formalized and which can be used to encode and represent robot actions. To do so, we will discuss linear time-invariant systems in statespace as well as non-linear systems described as a set of differential equations which are driven by canonical systems. Further topics include perception, exploration, and classification of objects using haptics, and the basics as well as advanced applications of (deep) neural networks. Applications and approaches are presented which address current problems in robotics such as grasping, walking, visual and tactile visual servoing, and the classification of actions.

Recommendation

Siehe Teilleistung.

M 5.47 Module: Methodical Foundations of OR [M-WIWI-101936]

Organisation: KIT Department of Economics and Management
Part of: Advanced Studies in Economics and Management (Wirtschaftswissenschaften Wahl)

Credits	Recurrence	Duration	Level	Version
9	Each term	1 semester	3	7

Election block: Wahlpflichtangebot (at least 1 item as well as between 4,5 and 9 credits)			
T-WIWI-102726	Global Optimization I	4,5 CR	Stein
T-WIWI-103638	Global Optimization I and II	9 CR	Stein
T-WIWI-102724	Nonlinear Optimization I	4,5 CR	Stein
T-WIWI-103637	Nonlinear Optimization I and II	9 CR	Stein
Election block: Ergänzungsangebot (at most 1 item)			
T-WIWI-102727	Global Optimization II	4,5 CR	Stein
T-WIWI-102725	Nonlinear Optimization II	4,5 CR	Stein
T-WIWI-102704	Facility Location and Strategic Supply Chain Management	4,5 CR	Nickel

Competence Certificate
The assessment is carried out as partial written exams (according to Section 4(2), 1 of the examination regulation) of the single courses of this module, whose sum of credits must meet the minimum requirement of credits of this module. The assessment procedures are described for each course of the module seperately.
The overall grade of the module is the average of the grades for each course weighted by the credits and truncated after the first decimal.

Competence Goal
The student

- names and describes basic notions for optimization methods, in particular from nonlinear and from global optimization,
- knows the indispensable methods and models for quantitative analysis,
- models and classifies optimization problems and chooses the appropriate solution methods to solve also challenging optimization problems independently and, if necessary, with the aid of a computer,
- validates, illustrates and interprets the obtained solutions.

Prerequisites
At least one of the courses "Nonlinear Optimization I" and "Global Optimization I" has to be examined.

Content
The modul focuses on theoretical foundations as well as solution algorithms for optimization problems with continuous decision variables. The lectures on nonlinear programming deal with local solution concepts, whereas the lectures on global optimization treat approaches for global solutions.

Annotation
The planned lectures and courses for the next three years are announced online (http://www.ior.kit.edu).

Workload
The total workload for this module is approximately 270 hours. For further information see German version.

M   5.48 Module: Mobile Computing and Internet of Things [M-INFO-101249]

Responsible: Prof. Dr.-Ing. Michael Beigl
Organisation: KIT Department of Informatics
Part of: **Advanced Studies in Informatics**

Credits	Recurrence	Duration	Language	Level	Version
5	Each winter term	1 semester	Deutsch	3	1

Mandatory			
T-INFO-102061	**Mobile Computing and Internet of Things**	5 CR	Beigl

Prerequisites
None

M	5.49 Module: Mobile Robots – Practical Course [M-INFO-101184]

Responsible: Prof. Dr.-Ing. Tamim Asfour
Organisation: KIT Department of Informatics
Part of: **Advanced Studies in Informatics**

Credits	Recurrence	Duration	Language	Level	Version
4	Each summer term	1 semester	Deutsch/Englisch	3	2

Mandatory			
T-INFO-101992	Mobile Robots – Practical Course ^{neu}	4 CR	Asfour

Competence Goal

The student is able to understand circuit diagrams and can assemble, test and debug complex PCBs. The student is familiar with programming microcontroller-based embedded systems using the C language and cross compilers. The student is able to use methods for controlling robotic sensors and actuators, can conduct experiments with robots and solve tasks in this context independently and in small groups.

Content

In this practical course, students assemble an ASURO robot in groups of two. Each student will be provided with his own robot, which he has to put into operation. While using the robots, a new set of problems will be solved each week. The students will need to prepare for each weak given the provided material. Sets of problem be solved using the C language and focus on controlling the robot's sensors and actuators as well as on the generation of reflex-based behavior. The course ends with a race, where the robots have to tackle an obstacle course.

M | 5.50 Module: Module Bachelor Thesis [M-WIWI-101611]

Responsible: Studiendekan der KIT-Fakultät für Informatik
                   Studiendekan der KIT-Fakultät für Wirtschaftswissenschaften
Organisation: KIT Department of Economics and Management
Part of: Bachelor Thesis

Credits	Language	Level	Version
12	Deutsch	3	2

Mandatory			
T-WIWI-103095	Bachelor Thesis		12 CR	Abeck, Lindstädt

Competence Certificate
The Bachelor thesis is examined by an examiner following the examination regulation. The examiner has to be involved in the degree programme. Involved in the degree programme are the persons that coordinate a module or a lecture of the degree programme.

Competence Goal
The student can independently work on a relevant topic in accordance with scientific criteria within the specified time frame.

He/she is in a position to research, analyze the information, abstract and identify basic principles and regulations from less structured information.

He/she reviews the task ahead, can select scientific methods and techniques and apply them to solve a problem or identify further potential. This is basically also done under consideration of social and/or ethical aspects.

He/she can interpret, evaluate and if required, graphically present the obtained results.

He/she is in a position to clearly structure a research paper and communicate in writing using the technical terminology.

Prerequisites
The regulations for the Bachelor thesis can be found in §14 of the examination regulation.

Modeled Conditions
The following conditions have to be fulfilled:

1. You need to earn at least 120 credits in the following fields:
   - Internship
   - Business Administration
   - Research Course
   - Informatics
   - Operations Research
   - Law
   - Statistics
   - Advanced Studies in Informatics
   - Advanced Studies in Law
   - Advanced Studies in Economics and Management
   - Economics
2. The field **Business Administration** must have been passed.
3. The field **Economics** must have been passed.
4. The field **Informatics** must have been passed.
5. The field **Mathematics** must have been passed.
6. The field **Operations Research** must have been passed.
7. The field **Statistics** must have been passed.
8. The field **Law** must have been passed.

Content
The Bachelor thesis is a written report which shows that the student can autonomously investigate a scientific problem in Information Engineering and Management. The work load for the Bachelor thesis should be 360h. The recommended project time is 6 months, the maximal project time is 9 months. The Bachelor thesis may also be written in English.

Workload
The total workload for this module is approximately 360 hours. For further information see German version.

M 5.51 Module: Optimization under Uncertainty [M-WIWI-103337]

Responsible: Prof. Dr. Steffen Rebennack
Organisation: KIT Department of Economics and Management
Part of: Advanced Studies in Economics and Management (Wirtschaftswissenschaften Wahl)

Credits	Recurrence	Duration	Level	Version
9	Each term	1 semester	3	2

Mandatory			
T-WIWI-106546	Introduction to Stochastic Optimization	4,5 CR	Rebennack
Election block: Ergänzungsangebot (at most 1 item)			
T-WIWI-102724	Nonlinear Optimization I	4,5 CR	Stein
T-WIWI-102714	Tactical and Operational Supply Chain Management	4,5 CR	Nickel

Competence Certificate
The assessment is carried out as partial exams (according to § 4(2), 1 of the examination regulation) of the single courses of this module, whose sum of credits must meet the minimum requirement of credits of this module.
The assessment procedures are described for each course of the module seperately.

The overall grade of the module is the average of the grades for each course weighted by the credits and truncated after the first decimal.

Competence Goal
The student

- denominates and describes basic notions for optimization methods under uncertainty, in particular from stochastic optimization,
- knows the indispensable methods and models for quantitative analysis,
- models and classifies optimization problems under uncertainty and chooses the appropriate solution methods to solve also challenging optimization problems independently and, if necessary, with the aid of a computer,
- validates, illustrates and interprets the obtained solutions, in particular of
- stochastic optimization problems.

Prerequisites
The course *Introduction to Stochastic Optimization* has to be taken.

Content
The module focuses on modeling and analyzing mathematical optimization problems where certain data is not fully present at the time of decision-making. The lectures on the introduction to stochastic optimization deal with methods to integrate distribution information into the mathematical model. The lectures on the optimization approaches under uncertainty offer alternative approaches such as robust optimization.

Recommendation
Knowledge from the lectures "Introduction to Operations Research I" and "Introduction to Operations Research II" are helpful.

Annotation
The curriculum, planned for three years in advance, can be found on the Internet at http://sop.ior.kit.edu/28.php.

Workload
The total workload for this module is approximately 270 hours (9 credits). The allocation is made according to the credit points of the courses of the module. The total number of hours per course is determined by the amount of time spent attending the lectures and exercises, as well as the exam times and the time required to achieve the module's learning objectives for an average student for an average performance.

M 5.52 Module: Orientation Exam [M-WIWI-101528]

Organisation: University
Part of: Orientation Exam

	Credits	Language	Level	Version
	0	Deutsch	3	1

Mandatory			
T-INFO-101964	**Basic Notions of Computer Science**	6 CR	Stüker, Worsch
T-INFO-101531	**Programming**	5 CR	Koziolek, Reussner
T-WIWI-102708	**Economics I: Microeconomics**	5 CR	Puppe, Reiß
T-INFO-101965	**Basic Notions of Computer Science I Pass**	0 CR	Stüker, Worsch
T-INFO-101967	**Programming Pass**	0 CR	Koziolek, Reussner

Modelled deadline
This module must be passed until the end of the **3. term**.

Prerequisites
None

M	**5.53 Module: Programming [M-INFO-101174]**

Responsible: Prof. Dr.-Ing. Anne Koziolek
                     Prof. Dr. Ralf Reussner
                     Prof. Dr.-Ing. Gregor Snelting
Organisation: KIT Department of Informatics
Part of: **Informatics**

Credits	Recurrence	Duration	Language	Level	Version
5	Each winter term	1 semester	Deutsch	1	1

Mandatory			
T-INFO-101967	**Programming Pass**	0 CR	Koziolek, Reussner
T-INFO-101531	**Programming**	5 CR	Koziolek, Reussner

Competence Goal
Students should learn

- basic structures of the programming language Java and how to apply them; in particular control and simple data structures, object orientation and implementation of basic algorithms
- basics of programming methodology and the ability to autonomously write executable small to medium sized Java programs

Content

- objects and classes
- types, values and variables
- methods
- control structures
- recursion
- references, lists
- inheritance
- input and output
- exceptions
- programming methodology
- implementation of basic algorithms in Java (such as sorting algorithms)

M	**5.54 Module: Public Finance [M-WIWI-101403]**

Responsible: Prof. Dr. Berthold Wigger
Organisation: KIT Department of Economics and Management
Part of: Advanced Studies in Economics and Management (Wirtschaftswissenschaften Wahl)

Credits	Recurrence	Duration	Level	Version
9	Each term	1 semester	3	4

Election block: Wahlpflichtangebot (9 credits)			
T-WIWI-102877	Introduction to Public Finance	4,5 CR	Wigger
T-WIWI-108711	Basics of German Company Tax Law and Tax Planning	4,5 CR	Gutekunst, Wigger
T-WIWI-102739	Public Revenues	4,5 CR	Wigger
T-WIWI-109590	Public Sector Finance	4,5 CR	Wigger

Competence Certificate
The assessment is carried out as partial written exams (according to Section 4(2), 1 of the examination regulation) of the single courses of this module, whose sum of credits must meet the minimum requirement of credits of this module. The exams are offered at the beginning of the recess period about the subject matter of the latest held lecture. Re-examinations are offerd at every ordinary examination date. The assessment procedures are described for each course of the module seperately.

The overall grade for the module is the average of the grades for each course weighted by the credits and truncated after the first decimal.

Competence Goal
See German version.

Prerequisites
None.

Content
As a branch of Economics, Public Finance is concerned with the theory and policy of the public sector and its interrelations with the private sector. It analyzes the economic role of the state from a normative as well as from a positive point of view. The normative view examines efficiency- and equity-oriented motives for government intervention and develops fiscal policy guidelines. The positive view explains the actual behavior of economic agents in public sector affairs. Special fields of Public Finance are public revenues, i.e. taxes and public debt, public expenditures for publicly provided goods, and welfare programs.

Recommendation
It is recommended to attend the course 2560129 after having completed the course 2560120.

Annotation
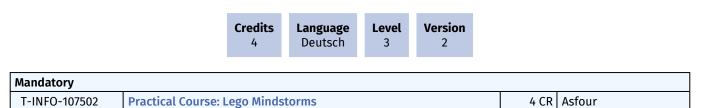The course T-WIWI-102790 "Specific Aspects in Taxation" will no longer be offered in the module as of winter semester 2018/2019.

Workload
The total workload for this module is approximately 270 hours. For further information see German version.

M 5.55 Module: Real Estate Management [M-WIWI-101466]

Responsible: Prof. Dr.-Ing. Thomas Lützkendorf
Organisation: KIT Department of Economics and Management
Part of: Advanced Studies in Economics and Management (Betriebswirtschaftslehre Wahl)
Advanced Studies in Economics and Management (Wirtschaftswissenschaften Wahl)

Credits	Recurrence	Duration	Level	Version
9	Each term	2 semester	3	1

Mandatory			
T-WIWI-102744	Real Estate Management I	4,5 CR	Lützkendorf
T-WIWI-102745	Real Estate Management II	4,5 CR	Lützkendorf

Competence Certificate
The assessment is carried out as partial exams (according to Section 4 (2), 1-3 SPO) of the core course and further single courses of this module, whose sum of credits must meet the minimum requirement of credits of this module. The assessment procedures are described for each course of the module separately.
The overall grade of the module is the average of the grades for each course weighted by the credits and truncated after the first decimal.

Competence Goal
The student

- possesses an overview concerning the different facets and interrelationships within the real estate business, the important decision points in real estate lifecycle and the different views and interests of the actors concerned, and
- is capable of applying basic economic methods an procedures to problems within the real estate area.

Prerequisites
None

Content
The real estate business offers graduates very interesting jobs and excellent work- and advancement possibilities. This module provides an insight into the macroeconomic importance of this industry, discusses problems concerned to the administration of real estate and housing companies and provides basic knowledge for making decisions both along the lifecycle of a single building and the management of real estate portfolios. Innovative operating and financing models are illustrated, as well as the current development when looking at real estate as an asset-class.
This module is also suitable for students who want to discuss macroeconomic, business-management or financial problems in a real estate context.

Recommendation
The combination with the module *Design Constructions and Assessment of Green Buildings* is recommended.

Furthermore a combination with courses in the area of

- Finance
- Insurance
- Civil engineering and architecture (building physics, building construction, facility management)

is recommended.

Workload
The total workload for this module is approximately 270 hours. For further information see German version.

M 5.56 Module: Security [M-INFO-100834]

Responsible: Prof. Dr. Jörn Müller-Quade
Organisation: KIT Department of Informatics
Part of: Advanced Studies in Informatics

Credits	Recurrence	Duration	Language	Level	Version
6	Each summer term	1 term	Deutsch	3	1

Mandatory			
T-INFO-101371	Security	6 CR	Hofheinz, Müller-Quade

M   5.57 Module: Semantic Knowledge Management [M-WIWI-101438]

Responsible: Prof. Dr. York Sure-Vetter
Organisation: KIT Department of Economics and Management
Part of: Advanced Studies in Informatics

Credits	Recurrence	Duration	Level	Version
10	Each term	1 semester	3	7

Mandatory			
T-WIWI-102874	Semantic Web Technologies neu	5 CR	Sure-Vetter
Election block: Ergänzungsangebot (at least 5 credits)			
T-WIWI-109263	Applications of Artificial Intelligence neu	5 CR	Sure-Vetter
T-WIWI-102697	Business Process Modelling neu	5 CR	Oberweis
T-WIWI-103523	Advanced Lab Informatics neu	4 CR	Oberweis, Sack, Sunyaev, Sure-Vetter, Volkamer, Zöllner
T-WIWI-102701	Seminar in Applied Informatics (Bachelor) neu	3 CR	Oberweis, Sunyaev, Sure-Vetter, Volkamer, Zöllner

Competence Certificate
The assessment mix of each course of this module is defined for each course separately. The final mark for the module is the average of the marks for each course weighted by the credits and truncated after the first decimal.

Competence Goal
Students

- know the motives for the application of knowledge management in organizations
- know the basic design dimensions of holistic knowledge management (organization, human, information technology, corporate culture)
- know the main group of IT systems for knowledge management and are able to describe the relevant application scenarios and basic operating modes of these systems
- know how to use the different IT systems for knowledge management in practice
- know the basic standards for the modeling of information and processes and are able to describe their formal structures
- know how to apply the different modeling languages
- know criteria to evaluate the success of knowledge management systems and are able to apply them to assess defined knowledge management scenarios

Prerequisites
Lecture *Semantic Web Technologien [2511310]* is mandatory.

Content
In modern companies the availability and usability of knowledge is an essential factor of success for central managerial tasks and duties such as the improvement of business processes, product innovation and the amelioration of customer satisfaction.

This module illustrates the typical problems of knowledge management in organizations and presents IT methods to approach these questions. The relevant groups of knowledge management systems are analyzed and expanded in the subject areas knowledge representation/semantic modeling and document management/groupware systems.

Annotation
Detailed information on the recognition of examinations in the field of Informatics can be found at http://www.aifb.kit.edu/web/Auslandsaufenthalt.

Workload
The workload is app. 300 hours.

M 5.58 Module: Semantic Web and Applications [M-WIWI-101439]

Responsible: Prof. Dr. York Sure-Vetter
Organisation: KIT Department of Economics and Management
Part of: **Advanced Studies in Informatics**

Credits	Recurrence	Duration	Level	Version
8	Each term	1 semester	3	1

Mandatory			
T-WIWI-102874	**Semantic Web Technologies**	5 CR	Sure-Vetter
T-WIWI-102701	**Seminar in Applied Informatics (Bachelor)**	3 CR	Oberweis, Sunyaev, Sure-Vetter, Volkamer, Zöllner

Competence Certificate
The assessment mix of each course of this module is defined for each course separately. The final mark for the module is the average of the marks for each course weighted by the credits and truncated after the first decimal.

Competence Goal
The student

- understands the koncepts behind Semantic Web and Linked Data technologies
- develops ontologies to be employed in semantic web-based applications and chooses suitable representation languages,
- is familiar with approaches in the area of knowledge representation and modelling,
- is able to transfer the methods and technologies of semantic web technologies to new application sectors,
- evaluates the potential of semantic web for new application sectors,
- understands the challenges in the areas of Data and system integration on the web is able to develop solutions.

Prerequisites
None

Content
The following topics are covered:

- Resource Description Framework (RDF) and RDF Schema (RDFS)
- Web Architecture and Linked Data
- Web Ontology Language (OWL)
- Inquiry language SPARQL
- rule languages
- applications

Workload
The total workload for this module is approximately 240 hours. For further information see German version.

M	**5.59 Module: Seminar Module Economic Sciences [M-WIWI-101826]**

Responsible: Studiendekan der KIT-Fakultät für Wirtschaftswissenschaften
Organisation: KIT Department of Economics and Management
Part of: Research Course

Credits	Language	Level	Version
3	Deutsch	3	1

Election block: Wahlpflichtangebot (1 item)			
T-WIWI-103486	Seminar in Business Administration (Bachelor)	3 CR	Professorenschaft des Fachbereichs Betriebswirtschaftslehre
T-WIWI-103487	Seminar in Economics (Bachelor)	3 CR	Professorenschaft des Fachbereichs Volkswirtschaftslehre
T-WIWI-103488	Seminar in Operations Research (Bachelor)	3 CR	Nickel, Rebennack, Stein
T-WIWI-103489	Seminar in Statistics (Bachelor)	3 CR	Grothe, Schienle

Competence Certificate
The assessment is done by a seminar with at least 3 CP.
The assessment of the seminar (following §4(2), 3 ER) is described at the course description.

Competence Goal

- Students are able to independently deal with a defined problem in a specialized field based on scientific criteria.
- They are able to research, analyze the information, abstract and derive basic principles and regularities from unstructured information.
- They can solve the problems in a structured manner using their interdisciplinary know-how.
- They know how to validate the obtained results.
- Finally, they are able to logically and systematically present the results both orally and in written form in accordance with scientific guidelines (structuring, technical terminology, referencing). They can argue and defend the results professionally in the discussion.

Prerequisites
None.

Content
The module consists of a seminar, that is related to the research field of economic sciences. A complete list of available seminars is published in the internet.

Annotation
The mentioned seminars in this module handbook are place holders. For each semester, a complete list of seminars are published in the Vorlesungsverzeichnis or at the web pages of the participating institutes. Often, the seminar topics for a given semester are publishedat the end of the preceding semester. Some seminars require an early sign-in deadline at the end of the of the preceding semester.

Workload
The total workload for this module is approximately 90 hours.

M	**5.60 Module: Seminar Module Informatics [M-INFO-102058]**

Organisation: KIT Department of Informatics
KIT Department of Economics and Management
Part of: Research Course

Credits	Recurrence	Language	Level	Version
3	Each term	Deutsch/Englisch	3	1

Election block: Seminar Informatik (1 item)			
T-INFO-104336	Seminar Informatics A	3 CR	Abeck
T-WIWI-103485	Seminar in Informatics (Bachelor)	3 CR	Professorenschaft des Fachbereichs Informatik

M 5.61 Module: Seminar Module Law [M-INFO-101218]

Responsible: Prof. Dr. Thomas Dreier
Organisation: KIT Department of Informatics
Part of: Research Course

Credits	Recurrence	Duration	Language	Level	Version
3	Each term	1 semester	Deutsch	3	1

Mandatory			
T-INFO-101997	Seminar: Legal Studies I	3 CR	Dreier

M 5.62 Module: Software Engineering I [M-INFO-101175]

Responsible:	Prof. Dr.-Ing. Anne Koziolek
	Prof. Dr. Ralf Reussner
	Prof. Dr. Walter Tichy
Organisation:	KIT Department of Informatics
Part of:	Informatics

Credits	Recurrence	Duration	Language	Level	Version
6	Each summer term	1 semester	Deutsch	2	1

Mandatory			
T-INFO-101968	Software Engineering I	6 CR	Koziolek, Reussner, Tichy
T-INFO-101995	Software Engineering I Pass	0 CR	Tichy

Competence Goal

The students acquire basic knowledge about the principles, methods and tools of software engineering. They learn how to build and to maintain complex software systems in a systematic way.

Content

The content of the lecture is the entire lifecycle of software, spanning project planning, system analysis, cost estimation, design, implementation, validation, verification, and finally the maintaining of software. The covered topics include UML, design patterns, software tools, programming environments and configuration control/versioning systems.

Workload

approx. 180 h

| M | **5.63 Module: Software Engineering II [M-INFO-100833]** |

Responsible: Prof. Dr.-Ing. Anne Koziolek
Prof. Dr. Ralf Reussner
Prof. Dr. Walter Tichy

Organisation: KIT Department of Informatics

Part of: **Advanced Studies in Informatics**

Credits	Recurrence	Duration	Language	Level	Version
6	Each winter term	1 semester	Deutsch	3	1

Mandatory			
T-INFO-101370	**Software Engineering II**	6 CR	Koziolek, Reussner, Tichy

Content

Requirements engineering, software development processes, software quality, software architectures, MDD, Enterprise Software Patterns software maintainability, software security, dependability, embedded software, middleware, statistic testing

M 5.64 Module: Specialization in Customer Relationship Management [M-WIWI-101422]

Responsible: Prof. Dr. Andreas Geyer-Schulz
Organisation: KIT Department of Economics and Management
Part of: Advanced Studies in Economics and Management (Betriebswirtschaftslehre Wahl)
Advanced Studies in Economics and Management (Wirtschaftswissenschaften Wahl)

Credits	Language	Level	Version
9	Deutsch	3	3

Election block: Wahlpflichtangebot (between 1 and 2 items)			
T-WIWI-102596	Analytical CRM neu	4,5 CR	Geyer-Schulz
T-WIWI-102597	Operative CRM neu	4,5 CR	Geyer-Schulz
Election block: Ergänzungsangebot (at most 1 item)			
T-WIWI-109938	Digital Services neu	4,5 CR	
T-WIWI-100005	Competition in Networks neu	4,5 CR	Mitusch

Competence Certificate
The assessment is carried out as partial exams (according to Section 4(1), S. 2 2nd clause of the examination regulation) of the single courses of this module, whose sum of credits must meet the minimum requirement of credits of this module. The assessment procedures are described for each course of the module seperately.
The overall grade of the module is the average of the grades for each course weighted by the credits and truncated after the first decimal.

Competence Goal
The student

- knows the scientific methods (from business administration, statistics, informatics) which are most relevant for analytic CRM and he autonomously applies these methods to standard cases,
- gains an overview of the market for CRM software,
- designs, implements, and analyzes operative CRM processes in concrete application domains (e.g. campaign management, call center management, ...),
- is aware of the problems of protecting the privacy of customers and the implications of privacy law.

Prerequisites
It is only possible to choose this module in combination with the module *CRM and Servicemanagement*. The module is passed only after the final partial exam of *CRM and Servicemanagement* is additionally passed.

At least, one of the courses *Analytic CRM* [2540522] and *Operative CRM* [2540520] has to be taken.

Modeled Conditions
The following conditions have to be fulfilled:

1. The module M-WIWI-101460 - CRM and Service Management must have been started.

Content

In this module, analysis methods and techniques for the management and improvement of customer relations are presented. Furthermore, modelling, implementation, introduction, change, analysis and valuation of operative CRM processes are treated. Regarding the first part, we teach analysis methods and techniques suitable for the management and improvement of customer relations. For this goal we treat the principles of customer- and service-oriented management as the foundation of successful customer relationship management. In addition, we show how knowledge of the customer can be used for decision-making at an aggregate level (e.g. planning of sortiments, analysis of customer loyality, ...). A basic requirement for this is the integration and collection of data from operative processes in a suitably defined data-warehouse in which all relevant data is kept for future analysis. The process of transfering data from the operative systems into the data warehouse is known as the ETL process (Extract / Transform / Load). The process of modelling a data-warehouse as well as the so-called extraction, transformation, and loading process for building and maintaining a data-warehouse are discussed in-depth. The data-warehouse serves as a base for flexible management reporting. In addition, various statistic methods (e.g. cluster analysis, regression analysis, stochastic models, ...) are presented which help in computing suitable key performance indicators or which support decision-making.

Regaring the operative part, we emphasize the design of operative CRM processes. This includes the modelling, implementation, introduction and change, as well as the analysis and evaluation of operative CRM processes. Petri nets and their extensions are the scientific foundation of process modelling. The link of Petri nets to process models used in industry as e.g. UML activity diagrams is presented. In addition, a framework for process innovation which aims at a radical improvement of key business processes is introduced. The following application areas of operative CRM processes are presented and discussed:

Strategic marketing processes

Operative marketing processes (campaign managament, permission marketing, ...)

Customer service processes (sales force management, field services, call center management, ...)

Workload

The total amount of work for this module is approximately 270 hours (9 credits). The subdivision is based on the credits of the courses of the module.

The total number of hours per course results from the time of visiting the lectures and exercises, as well as from the exam periods and the time that is required to achieve the objectives of the module as an average student with an average performance.

M 5.65 Module: Statistics and Econometrics [M-WIWI-101599]

Responsible:	Prof. Dr. Oliver Grothe Prof. Dr. Melanie Schienle
Organisation:	KIT Department of Economics and Management
Part of:	Advanced Studies in Economics and Management (Wirtschaftswissenschaften Wahl)

Credits 9	**Recurrence** Each term	**Language** Deutsch	**Level** 3	**Version** 2

Election block: Wahlpflichtangebot (1 item)			
T-WIWI-102736	Economics III: Introduction in Econometrics	5 CR	Schienle
T-WIWI-106623	Technical Conditions Met	0 CR	
Election block: Ergänzungsangebot (between 1 and 2 items)			
T-WIWI-103063	Analysis of Multivariate Data	4,5 CR	Grothe
T-WIWI-103064	Financial Econometrics	4,5 CR	Schienle
T-WIWI-103065	Statistical Modeling of Generalized Regression Models	4,5 CR	Heller
T-WIWI-103066	Data Mining and Applications	4,5 CR	Nakhaeizadeh

Competence Certificate

The assessment is carried out as partial written exams (according to Section 4(2), 1 of the examination regulation) of the single courses of this module, whose sum of credits must meet the minimum requirement of credits of this module. The examinations are offered every semester. Re-examinations are offered at every ordinary examination date. The assessment procedures are described for each course of the module seperately.

The overall grade of the module is the average of the grades for each course weighted by the credits and truncated after the first decimal.

Competence Goal

The student

- shows an advanced understanding of Econometric techniques and statistical model building.
- is able to develop Econometric models for applied problems based on available data
- is able to apply techniques and models with statistical software, to interpret results and to judge on different approaches with appropriate statistical criteria.

Prerequisites

The course „Economics III: Introduction in Econometrics" is compulsory and must be examined. In case the course „Economics III: Introduction in Econometrics" has already been examined within the module „Applied Microeconomics", the course „Economics III: Introduction in Econometrics" is not compulsory.

Content

The courses provide a solid Econometric and statistical foundation of techiques necessary to conduct valid regression, time series and multivariate analysis.

Workload

The total workload for this module is approximately 270 hours.

M 5.66 Module: Strategy and Organization [M-WIWI-101425]

Responsible: Prof. Dr. Hagen Lindstädt
Organisation: KIT Department of Economics and Management
Part of: Advanced Studies in Economics and Management (Betriebswirtschaftslehre Wahl)
Advanced Studies in Economics and Management (Wirtschaftswissenschaften Wahl)

Credits	Language	Level	Version
9	Deutsch	3	3

Election block: Strategie und Organisation (at least 9 credits)			
T-WIWI-102629	Management and Strategy	3,5 CR	Lindstädt
T-WIWI-102630	Managing Organizations	3,5 CR	Lindstädt
T-WIWI-102871	Problem Solving, Communication and Leadership	2 CR	Lindstädt

Competence Certificate
The assessment is carried out as partial written exams (according to Section 4(2), 1 of the examination regulation) of the single courses of this module, whose sum of credits must meet the minimum requirement of credits of this module. The examinations are offered every semester. Re-examinations are offered at every ordinary examination date. The assessment procedures are described for each course of the module seperately.
The overall grade of the module is the average of the grades for each course weighted by the credits and truncated after the first decimal.

Competence Goal

- The student describes both central concepts of strategic management as well as concepts and models for the design of organizational structures.
- He / she evaluates the strengths and weaknesses of existing organizational structures and regulations on the basis of systematic criteria.
- The management of organizational changes discusses and examines the students by means of case studies to what extent the models can be used in practice and what conditions must apply to them.
- In addition, students plan to use IT to support corporate governance.

Prerequisites
None

Content
The module has a practical and action-oriented structure and provides the student with an up-to-date overview of basic skills concepts and models of strategic management and a realistic picture of possibilities and limitations rational design approaches of the organization.
The focus is firstly on internal and external strategic analysis, concept and sources of competitive advantage, Formulation of competitive and corporate strategies as well as strategy assessment and implementation. Secondly strengths and weaknesses of organizational structures and regulations are assessed on the basis of systematic criteria. Concepts for the organization of organizational structures, the regulation of organizational processes and the control organizational changes are presented.

Workload
The total workload of the module is about 240 hours. The workload is proportional to the credit points of the individual courses.

M	**5.67 Module: Supply Chain Management [M-WIWI-101421]**

Responsible: Prof. Dr. Stefan Nickel
Organisation: KIT Department of Economics and Management
Part of: Advanced Studies in Economics and Management (Betriebswirtschaftslehre Wahl)
Advanced Studies in Economics and Management (Wirtschaftswissenschaften Wahl)

Credits	Recurrence	Duration	Level	Version
9	Each term	1 semester	3	7

Mandatory			
T-WIWI-107506	**Platform Economy**	4,5 CR	Straub, Weinhardt
Election block: Ergänzungsangebot (at most 4 items)			
T-WIWI-102704	**Facility Location and Strategic Supply Chain Management**	4,5 CR	Nickel
T-WIWI-102714	**Tactical and Operational Supply Chain Management**	4,5 CR	Nickel
T-MACH-102089	**Logistics - Organisation, Design and Control of Logistic Systems**	6 CR	Furmans
T-WIWI-109802	**Wildcard Supply Chain Management** neu	4,5 CR	
T-WIWI-109803	**Wildcard Supply Chain Management** neu	4,5 CR	

Competence Certificate
The assessment is carried out as partial exams (according to Section 4 (2), 1-3 SPO) of the single courses of this module, whose sum of credits must meet the minimum requirement of credits of this module. The assessment procedures are described for each course of the module separately.
The overall grade of the module is the average of the grades for each course weighted by the credits and truncated after the first decimal.

Competence Goal
The students

- are able to understand and evaluate the control of cross-company supply chains based on a strategic and operative view,
- are able to analyse the coordination problems within the supply chains,
- are able to identify and integrate adequate information system infrastructures to support the supply chains,
- are able to apply theoretical methods from the operations research and the information management,
- learn to elaborate solutions in a team

Prerequisites
The courseT-WIWI-107506 "Platform Economy"has to be taken.

Content
The module "Supply Chain Management" gives an overview of the mutual dependencies of information systems and of supply chains spanning several enterprises. The specifics of supply chains and their information needs set new requirements for the operational information management. In the core lecture "Platform Economy" the focus is set on markets between two parties that act through an intermediary on an Internet platform. Topics discussed are network effects, peer-to-peer markets, blockchains and market design. The course is held in English and teaches parts of the syllabus with the support of a case study in which students analyze a platform.

The module is completed by an elective course addressing appropriate optimization methods for the Supply Chain Management and for modern logistic approaches.

Annotation
The planned lectures in the next terms can be found on the websites of the respective institutes IISM, IFL and IOR.

Workload
The total workload of the module is about 240 hours. The workload is proportional to the credit points of the individual courses.

| M | **5.68 Module: Telematics [M-INFO-101194]** |

Responsible: Prof. Dr. Martina Zitterbart
Organisation: KIT Department of Informatics
Part of: **Advanced Studies in Informatics**

Credits	Recurrence	Duration	Level	Version
10	Each term	1 semester	3	1

Mandatory			
T-INFO-102015	**Introduction in Computer Networks**	4 CR	Zitterbart
T-INFO-101338	**Telematics**	6 CR	Zitterbart

Competence Goal

The students will broaden their knowledge of computer networks initially learnt in the module Telematics [IW3INTM].
They learn about problems and solutions in the domains of wireless, multimedia, or secure communications and they will
be able to analyse and evaluate specific solutions in those domains.

Prerequisites

None

Content

Selected protocols, architectures, mechanisms, and algorithms in the chosen domains will be analysed in detail. The student
hereby may choose among mobile and wireless communications, principles of the design of secure communication
protocols, and protocols and techniques for multimedia communication.

Recommendation

The lecture *Telematics* [24128] builds on the content of the lecture *Introduction in Computer Networks* [24519] and should
therefore only be taken after successful completion of the lecture *Introduction in Computer Networks* [24519].

Workload

approx. 300 h
For further details see the German version.

M 5.69 Module: Theoretical Informatics [M-INFO-101189]

Responsible:	Prof. Dr. Jörn Müller-Quade
	Prof. Dr. Dorothea Wagner
Organisation:	KIT Department of Informatics
Part of:	Informatics

Credits	Recurrence	Duration	Level	Version
6	Once	1 semester	2	1

Mandatory		
T-INFO-103235	Theoretical Foundations of Computer Science	6 CR	Müller-Quade, Sanders, Wagner

Competence Certificate
The assessment of the module consists of a written examination according to §4(2), 1 of the examination regulations. The grade of the module corresponds to the grade of the written examination. Further details see the german section.

Competence Goal
The student

- has a deeper insight into the fundamentals of theoretical computer science and knows the computation models and proof techniques,
- understands the limits and possibilities of computer science in relation to the solution of definable but only partially predictable problems
- knows basic aspects of computer science in contrast to specific circumstances, such as specific computers or programming languages and also can phrase general statements about the solvability of problems
- is able to apply the proof techniques learned for the specification of systems of computer science and for the systematic design of programs and algorithms

Content
There are important problems whose solutions can clearly be defined but one will never be able to calculate such a solution systematically. Other problems are "likely" to be solved only through trial and error. Other topics of the module provide the basis for circuit design, design of compilers, and many others. Most results are rigorously proved. The proof techniques learned by the way are important for the specification of systems of computer science and for the systematic design of programs and algorithms.

The module provides a deep insight into the principles and methods of theoretical computer science. In particular, this will be discussed on the basic properties of Formal Languages as foundations of programming languages and communication protocols (regular, context-free Chomsky hierarchy), machine models (finite automata, pushdown automata, Turing machines, non determinism, and relations to families of formal languages), equivalence of sufficiently powerful computation models (Church's thesis), non computable important functions (halting problem,…), Gödel's incompleteness theorem and introduction to complexity theory, NP-complete problems and polynomial reductions.

Workload
approx. 210 h

M 5.70 Module: Topics in Finance I [M-WIWI-101465]

Responsible: Prof. Dr. Martin Ruckes
Prof. Dr. Marliese Uhrig-Homburg

Organisation: KIT Department of Economics and Management

Part of: Advanced Studies in Economics and Management (Betriebswirtschaftslehre Wahl)
Advanced Studies in Economics and Management (Wirtschaftswissenschaften Wahl)

Credits	Recurrence	Duration	Level	Version
9	Each term	1 semester	3	5

Election block: Wahlpflichtangebot (9 credits)			
T-WIWI-108445	Applied Asset Management neu	3 CR	Sauer
T-WIWI-102625	Exchanges neu	1,5 CR	Franke
T-WIWI-102643	Derivatives neu	4,5 CR	Uhrig-Homburg
T-WIWI-109941	eFinance: Information Systems for Securities Trading neu	4,5 CR	Weinhardt
T-WIWI-102623	Financial Intermediation neu	4,5 CR	Ruckes
T-WIWI-107505	Financial Accounting for Global Firms neu	4,5 CR	Luedecke
T-WIWI-102626	Business Strategies of Banks neu	3 CR	Müller
T-WIWI-108711	Basics of German Company Tax Law and Tax Planning neu	4,5 CR	Gutekunst, Wigger
T-WIWI-102646	International Finance neu	3 CR	Uhrig-Homburg

Competence Certificate

The assessment is carried out as partial exams (according to Section 4(2) of the examination regulation) of the single courses of this module, whose sum of credits must meet the minimum requirement of credits of this module. The examinations are offered every semester. Re-examinations are offered at every ordinary examination date. The assessment procedures are described for each course of the module seperately.

The overall grade of the module is the average of the grades for each course weighted by the credits and truncated after the first decimal.

Competence Goal

The student

- has advanced skills in modern finance
- is able to apply these skills in practice in the fields of finance and accounting, financial markets and banking

Prerequisites

It is only possible to choose this module in combination with the module *Essentials in Finance*. The module is passed only after the final partial exam of *Essentials in Finance* is additionally passed.

Modeled Conditions

The following conditions have to be fulfilled:

1. The module M-WIWI-101435 - Essentials of Finance must have been started.

Content

The module *Topics in Finance I* is based on the module *Essentials of Finance.* The courses deal with advanced issues concerning the fields of finance and accounting, financial markets and banking from a theoretical and practical point of view.

Annotation

The course T-WIWI-102790 "Specific Aspects in Taxation" will no longer be offered in the module as of winter semester 2018/2019.

Workload

The total workload of the module is about 240 hours. The workload is proportional to the credit points of the individual courses.

M 5.71 Module: Topics in Finance II [M-WIWI-101423]

Responsible: Prof. Dr. Martin Ruckes
Prof. Dr. Marliese Uhrig-Homburg

Organisation: KIT Department of Economics and Management

Part of: Advanced Studies in Economics and Management (Betriebswirtschaftslehre Wahl)
Advanced Studies in Economics and Management (Wirtschaftswissenschaften Wahl)

Credits	Recurrence	Duration	Level	Version
9	Each term	1 semester	3	6

Election block: Wahlpflichtangebot (9 credits)			
T-WIWI-108445	Applied Asset Management neu	3 CR	Sauer
T-WIWI-102643	Derivatives neu	4,5 CR	Uhrig-Homburg
T-WIWI-109941	eFinance: Information Systems for Securities Trading neu	4,5 CR	Weinhardt
T-WIWI-102623	Financial Intermediation neu	4,5 CR	Ruckes
T-WIWI-107505	Financial Accounting for Global Firms neu	4,5 CR	Luedecke
T-WIWI-102626	Business Strategies of Banks neu	3 CR	Müller
T-WIWI-108711	Basics of German Company Tax Law and Tax Planning neu	4,5 CR	Gutekunst, Wigger
T-WIWI-102646	International Finance neu	3 CR	Uhrig-Homburg

Competence Certificate

The assessment is carried out as partial exams (according to Section 4(2) of the examination regulation) of the single courses of this module, whose sum of credits must meet the minimum requirement of credits of this module. The examinations are offered every semester. Re-examinations are offered at every ordinary examination date. The assessment procedures are described for each course of the module seperately.

The overall grade of the module is the average of the grades for each course weighted by the credits and truncated after the first decimal.

Competence Goal

The student

- has advanced skills in modern finance
- is able to apply these skills in practice in the fields of finance and accounting, financial markets and banking

Prerequisites

It is only possible to choose this module in combination with the module *Essentials in Finance*. The module is passed only after the final partial exam of *Essentials in Finance* is additionally passed.

In addition to that it is possible to choose the module *Topics in Finance I*.

Modeled Conditions

The following conditions have to be fulfilled:

1. The module M-WIWI-101435 - Essentials of Finance must have been started.

Content

The module *Topics in Finance II* is based on the module *Essentials of Finance*. The courses deal with advanced issues concerning the fields of finance and accounting, financial markets and banking from a theoretical and practical point of view.

Annotation

The course T-WIWI-102790 "Special Taxation" will no longer be offered in the module as of winter semester 2018/1019.

Workload

The total workload for this module is approximately 270 hours.

6 Courses

T | 6.1 Course: Mobile Robots – Practical Course [T-INFO-101992]

Responsible:	Prof. Dr.-Ing. Tamim Asfour
Organisation:	KIT Department of Informatics
Part of:	M-INFO-101184 - Basispraktikum Mobile Roboter
	M-INFO-102060 - Weitere Leistungen

Type Studienleistung	**Credits** 4	**Recurrence** Each summer term	**Version** 2

Events					
SS 2019	24624	Mobile Robots - Practical Course	4 SWS	Practical course (P)	Asfour, Kaul, Beil, Weiner

Below you will find excerpts from events related to this course:

V | Mobile Robots - Practical Course
24624, SS 2019, 4 SWS, Open in study portal

Practical course (P)

Learning Content

In this practical course, students assemble an ASURO robot in groups of two. Each student will be provided with his own robot, which he has to put into operation. While using the robots, a new set of problems will be solved each week. The students will need to prepare for each weak given the provided material. Sets of problem be solved using the C language and focus on controlling the robot's sensors and actuators as well as on the generation of reflex-based behavior. The course ends with a race, where the robots have to tackle an obstacle course.

Workload

120 h

T 6.2 Course: Advanced Lab Informatics [T-WIWI-103523]

Responsible: Prof. Dr. Andreas Oberweis
Prof. Dr. Harald Sack
Prof. Dr. Ali Sunyaev
Prof. Dr. York Sure-Vetter
Prof. Dr. Melanie Volkamer
Prof. Dr.-Ing. Johann Marius Zöllner

Organisation: KIT Department of Economics and Management

Part of: M-INFO-102060 - Weitere Leistungen
M-WIWI-101438 - Semantisches Wissensmanagement
M-WIWI-101440 - Internetanwendungen

Type Prüfungsleistung anderer Art	Credits 4	Recurrence Each term	Version 1

Events					
WS 18/19	2512100	Security	4 SWS	Practical course (P)	Baumgart, Volkamer, Mayer
WS 18/19	2512301	Linked Data and the Semantic Web	3 SWS	Seminar / Practical course (S/P)	Sure-Vetter, Acosta Deibe, Käfer, Heling, Weller
WS 18/19	2512311	Real-World Challenges in Data Science and Analytics	3 SWS	Seminar / Practical course (S/P)	Sure-Vetter, Nickel, Weinhardt, Zehnder, Brandt
WS 18/19	2512312	Cooperation seminar: Innovative applications on single board computers as well as their economic relevance	3 SWS	Seminar / Practical course (S/P)	Sure-Vetter, Ott, Weller, Bälz
WS 18/19	2512400	Entwicklung Soziotechnischer Informationssysteme	SWS	Practical course (P)	Sunyaev, Kromat
WS 18/19	2512501	Projektpraktikum Kognitive Automobile und Roboter	3 SWS	Practical course (P)	Zöllner
WS 18/19	2512600	Projektpraktikum Information Service Engineering	2 SWS	Practical course (P)	Sack
SS 2019	2512101	Praktikum Betriebliche Informationssysteme: Realisierung innovativer Dienste für Studierende	3 SWS	Practical course (P)	Oberweis, Toussaint, Ullrich
SS 2019	2512300	Knowledge Discovery and Data Mining	3 SWS	Seminar / Practical course (S/P)	Sure-Vetter, Färber, Nguyen, Weller
SS 2019	2513306	Data Science & Real-time Big Data Analytics	2 SWS	Seminar / Practical course (S/P)	Sure-Vetter, Riemer, Zehnder
Exams					
WS 18/19	7900038	Linked Data and the Semantic Web		Prüfung (PR)	Sure-Vetter
WS 18/19	7900046	Sicherheit		Prüfung (PR)	Volkamer
WS 18/19	7900094	Selected Topics in Text Mining - Cooperation Seminar AIFB and ECON		Prüfung (PR)	Sure-Vetter, Ott
WS 18/19	7900102	Advanced Lab Information Service Engineering		Prüfung (PR)	Sack
WS 18/19	7900107	Advanced Lab Cognitive Automobile and Robots		Prüfung (PR)	Zöllner
WS 18/19	7900115	Development of Sociotechnical Information Systems		Prüfung (PR)	Sunyaev
WS 18/19	7900192	Data Science with Open Data		Prüfung (PR)	Sure-Vetter

SS 2019	7900085	Advanced Lab in Information Systems: Realization of innovative services for students	Prüfung (PR)	Oberweis
SS 2019	7900094	Knowledge Discovery and Data Mining	Prüfung (PR)	Sure-Vetter

Competence Certificate
Advanced Lab "Privacy Friendly Apps":

The non exam assessment (§4(2), 3 SPO 2007) or alternative exam assessment (§ 4(2), 3 SPO 2015) consists of of a practical work in which a software functionality must be implemented and three interim submissions of the software to be developed. The weighting of the individual components will be announced during the first meeting.

All other courses of the Institute AIFB:

The non exam assessment (§4(2), 3 SPO 2007) or alternative exam assessment (§ 4(2), 3 SPO 2015) consists of:

- a practical work
- a presentation and
- a written seminar thesis

Practical work, presentation and written thesis are weighted according to the course.

Prerequisites
None

Annotation
The title of this course is a generic one. Specific titles and the topics of offered seminars will be announced before the start of a semester in the internet at https://portal.wiwi.kit.edu.

Below you will find excerpts from events related to this course:

V	**Security** 2512100, WS 18/19, 4 SWS, Open in study portal	**Practical course (P)**

Notes
More information on https://ilias.studium.kit.edu/goto.php?target=crs_719271&client_id=produktiv

V	**Linked Data and the Semantic Web** 2512301, WS 18/19, 3 SWS, Open in study portal	**Seminar / Practical course (S/P)**

Description
The Linked Data principles are a set of practices for data publishing on the web. Linked Data builds on the web architecture and uses HTTP for data access, and RDF for describing data, thus aiming towards web-scale data integration. There is a vast amount of data available published according to those principles: recently, 4.5 billion facts have been counted with information about various domains, including music, movies, geography, natural sciences. Linked Data is also used to make web-pages machine-understandable, corresponding annotations are considered by the big search engine providers. On a smaller scale, devices on the Internet of Things can also be accessed using Linked Data which makes the unified processing of device data and data from the web easy.

In this practical seminar, students will build prototypical applications and devise algorithms that consume, provide, or analyse Linked Data. Those applications and algorithms can also extend existing applications ranging from databases to mobile apps.

For the seminar, programming skills or knowledge about web development tools/technologies are highly recommended. Basic knowledge of RDF and SPARQL are also recommended, but may be acquired during the seminar. Students will work in groups. Seminar meetings will take place as 'Block-Seminar'.

Notes
The exact dates and information for registration will be announced at the event page.

Learning Content

Topics of interest include, but are not limited to:

- Travel Security
- Geo data
- Linked News
- Social Media

V	**Real-World Challenges in Data Science and Analytics** 2512311, WS 18/19, 3 SWS, Open in study portal	**Seminar / Practical course (S/P)**

Notes

The exact dates and information for registration will be announced at the event page.

V	**Cooperation seminar: Innovative applications on single board computers as well as their economic relevance** 2512312, WS 18/19, 3 SWS, Open in study portal	**Seminar / Practical course (S/P)**

Description

This seminar is offered cooperatively by the Chair of Web Science (AIFB) and the Chair of Economic Policy (ECON).

The cooperation seminar deals with the technical realization of innovative applications using single board computers such as Arduino (https://www.arduino.cc) or Raspberry Pi (https://www.raspberrypi.org). These single board computers can be extended by various sensors and modules, thus fulfilling a wide range of tasks. Thus, the addition of a camera allows for example gesture and face detection, or the equipment with different sensors enables the measurement of temperature and perception of moving objects.

At the same time, the implications of cost-effective availability of these basic technologies are analyzed from an economic-scientific perspective. The spread and use of these single-board computers, as well as the concepts associated with their success, can have a decisive impact on innovation processes. The reasons and obstacles as well as their relevance to innovation are therefore also addressed from an economic perspective.

Microcomputers such as the Raspberry Pi, for example, are increasingly being used and expanded in the private environment, with numerous applications being possible in the household sector. They can be used as a monitoring system, as a home server or as an electronic func- tion opener. Likewise, due to their low cost, size and ease of use, they can also significantly support the development of innovative processes, for example in the development of prototypes.

Within the scope of this seminar, the possibilities of a single board computer are investigated using the Raspberry Pi. The students are to conceive, realize and present innovative applications in two-teams. Each team is provided with a Raspberry Pi. In addition to the realization of an innovative application, each team has to deal with and discuss an economic science issue. The use of the Raspberry Pi or the underlying concepts from an innovation-economic perspective are to be analyzed.

In addition to the Raspberry Pis, various sensors and expansion modules are also provided and can be purchased after consultation with the supervisors. Furthermore, it may be necessary to develop extensions in Python during the seminar. Previous knowledge in Python and Semantic Web technologies are therefore an advantage but not an imperative requirement.

Notes

The exact dates and information for registration will be announced at the event page.

Learning Content

Topics of interest include, but are not limited to:

- Smart Home Applications
- Environmental measurements
- Gesture control
- Security systems

V	**Entwicklung Soziotechnischer Informationssysteme** 2512400, WS 18/19, SWS, Open in study portal	**Practical course (P)**

Description

The aim of this course is to provide a practical introduction into developing socio-technical information systems, such as web platforms, mobile apps, or desktop applications. Course participants will create (individually or in groups) software solutions for specific problems from various practical domains. The course tasks comprise requirements assessment, system design, and software implementation. Furthermore, course participants will gain insights into software quality assurance methods and software documentation.

Workload

4 ECTS = approx. 120 h

V	**Projektpraktikum Information Service Engineering** 2512600, WS 18/19, 2 SWS, Open in study portal	**Practical course (P)**

Description

The project will be worked on in teams of 3-4 students each, guided by a tutor from the teaching staff. In the winter semester 2018/19 we intend to participate in the "Cod1ng Da V1nc1" Initiative .

The ISEproject course is based on the summer semester lecture "Information Service Engineering". Goal of the course is to work on a research problem in small groups (3-4 students) related to the ISE lecture topics, i.e. Natural Language Processing, Linked Data engineering, and Knowledge Mining. The solution of the given research problemrequires the development of a software implementation.

Required coursework includes:

- Mid term presentation (5-10 min)
- Final presentation (10-15 min)
- Course report (c. 20 pages)
- Participation and contribution of the students during the course
- Software development and delivery

Notes

The ISEproject course can also be credited as a **seminar**.

The project will be worked on in teams of 3-4 students each, guided by a tutor from the teaching staff. In the winter semester 2018/19 we intend to participate in the "Cod1ng Da V1nc1" Initiative .

V	**Knowledge Discovery and Data Mining** 2512300, SS 2019, 3 SWS, Open in study portal	**Seminar / Practical course (S/P)**

Description

The seminar includes different methods of machine learning and data mining. Participants of the seminar should have basic knowledge of machine learning and programming skills.

Notes

The exact dates and information for registration will be announced at the event page.

Learning Content

Domains of interest include, but are not limited to:

- Medicine
- Social Media
- Finance Market

Literature

Detailed references are indicated together with the respective subjects. For general background information look up the following textbooks:

- Mitchell, T.; Machine Learning
- McGraw Hill, Cook, D.J. and Holder, L.B. (Editors) Mining Graph Data, ISBN:0-471-73190-0
- Wiley, Manning, C. and Schütze, H.; Foundations of Statistical NLP, MIT Press, 1999.

V	**Data Science & Real-time Big Data Analytics** 2513306, SS 2019, 2 SWS, Open in study portal	**Seminar / Practical course (S/P)**

Description

Event processing and real-time data are everywhere: financial market data, sensors, business intelligence, social media analytics, logistics. Many applications collect large volumes of data in real time and are increasingly faced with the challenge of being able to process them quickly and react promptly. The challenges of this real-time processing are currently also receiving a great deal of attention under the term "Big Data". The complex processing of real-time data requires both knowledge of methods for data analysis (data science) and their processing (real-time analytics). Seminar papers are offered on both of these areas as well as on interface topics, the input of own ideas is explicitly desired.

T   6.3 Course: Advanced Lab Security [T-WIWI-109786]

Responsible:	Prof. Dr. Melanie Volkamer
Organisation:	KIT Department of Economics and Management
Part of:	M-WIWI-104069 - Informationssicherheit

Type	Credits	Recurrence	Version
Prüfungsleistung anderer Art	4	Each winter term	1

Events					
WS 18/19	2512100	Security	4 SWS	Practical course (P)	Baumgart, Volkamer, Mayer

Competence Certificate
The non examassessment (§4(2), 3 SPO 2007) or alternative exam assessment (§ 4(2), 3 SPO 2015) consists of:

- a practical work
- a presentation and possibly
- a written seminar thesis

Practical work, presentation and written thesis are weighted according to the course.

Prerequisites
None

Recommendation
Knowledge from the lecture "Information Security" is recommended.

Below you will find excerpts from events related to this course:

V   Security
2512100, WS 18/19, 4 SWS, Open in study portal   **Practical course (P)**

Notes
More information on https://ilias.studium.kit.edu/goto.php?target=crs_719271&client_id=produktiv

T 6.4 Course: Advanced Lab Security, Usability and Society [T-WIWI-108439]

Responsible:	Prof. Dr. Melanie Volkamer
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-104069 - Informationssicherheit

Type Prüfungsleistung anderer Art	Credits 4	Recurrence Each summer term	Version 1

Events					
WS 18/19	2512551	Praktikum Security, Usability and Society	3 SWS	Practical course (P)	Volkamer, Mayer
Exams					
WS 18/19	7900116	Advanced Lab Security, Usability and Society	Prüfung (PR)		Volkamer

Competence Certificate

The non examassessment (§4(2), 3 SPO 2007) or alternative exam assessment (§ 4(2), 3 SPO 2015) consists of:

- a practical work
- a presentation and possibly
- a written seminar thesis

Practical work, presentation and written thesis are weighted according to the course.

Prerequisites

None

Recommendation

Knowledge from the lecture "Information Security" is recommended.

Annotation

The course is expected to be offered from winter term 2018/2019.

Contents:

In the course of the programming lab, changing topics from the field of Human Factors in Security und Privacy will be worked on.

Learning goals:

The student

- can apply the basics of information security
- is able to implement appropriate measures to achieve different protection goals
- can structure a software project in the field of information security
- can use the Human Centred Security and Privacy by Design technique to develop user-friendly software
- can explain and present technical facts and the results of the programming lab in oral and written form

Below you will find excerpts from events related to this course:

V	**Praktikum Security, Usability and Society** 2512551, WS 18/19, 3 SWS, Open in study portal	Practical course (P)

Notes

Kick-off Meeting (compulsory attendance) 19.10.2018

T 6.5 Course: Advanced Object Orientation [T-INFO-101346]

Responsible:	Prof. Dr.-Ing. Gregor Snelting
Organisation:	KIT Department of Informatics
Part of:	M-INFO-100809 - Fortgeschrittene Objektorientierung
	M-INFO-102060 - Weitere Leistungen

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	5	Irregular	1

Events					
SS 2019	24665	Advanced object orientation	2 SWS	Lecture (V)	Snelting
Exams					
SS 2019	7500034	Advanced Object Orientation		Prüfung (PR)	Snelting

Below you will find excerpts from events related to this course:

V	**Advanced object orientation**	Lecture (V)
	24665, SS 2019, 2 SWS, Open in study portal	

Learning Content

Behaviour and semantics of dynamic dispatch

Implementation of single and multiple inheritance

Genericity, refactoring

Traits and mixins, virtual classes

Cardelli's type system

Analyses on the call graph, points-to analyses

operational semantics, type safety

bytecode, JVM, bytecode verifier, dynamic compilation

T 6.6 Course: Advanced Topics in Economic Theory [T-WIWI-102609]

Responsible:	Prof. Dr. Kay Mitusch
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101501 - Wirtschaftstheorie

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	4,5	Irregular	1

Events					
SS 2019	2520527	Advanced Topics in Economic Theory	2 SWS	Lecture (V)	Mitusch, Scheffel
SS 2019	2520528	Übung zu Advanced Topics in Economic Theory	1 SWS	Practice (Ü)	Pegorari

Competence Certificate
The course T-WIWI-102609 "Advanced Topics in Economic Theory" restarts in summer term 2019.

The assessment consists of a written exam (60min) (following §4(2), 1 of the examination regulation) at the end of the lecture period or at the beginning of the following semester.

Prerequisites
None

Recommendation
This course is designed for advanced Master students with a strong interest in economic theory and mathematical models. Bachelor students who would like to participate are free to do so, but should be aware that the level is much more advanced than in other courses of their curriculum.

Below you will find excerpts from events related to this course:

V Advanced Topics in Economic Theory
2520527, SS 2019, 2 SWS, Open in study portal   Lecture (V)

Learning Content
The course deals with basic elements of modern economic theory. It is divided into two parts. The first part introduces the microeconomic foundations of general equilibrium á la Debreu ("The Theory of Value", 1959) and Hildenbrand/Kirman ("Equilibrium Analysis",1988). The second part deals with asymmetric information and introduces the basic techniques of contract theory.
The course is largely based on the textbook "Microeconomic Theory" (Chapters 1-5, 10, 13-20) by A.Mas-Colell, M.D.Whinston, and J.R.Green.

Workload
The total workload for this course is approximately 135.0 hours. For further information see German version.

Literature
The course is based on the excellent textbook "Microeconomic Theory" (Chapters 1-5, 10, 13-20) by A.Mas-Colell, M.D.Whinston, and J.R.Green.

T   6.7 Course: Algorithmic Methods for Hard Optimization Problems [T-INFO-103334]

Responsible: Prof. Dr. Dorothea Wagner
Organisation: KIT Department of Informatics
Part of: M-INFO-101237 - Algorithmische Methoden für schwere Optimierungsprobleme
             M-INFO-102060 - Weitere Leistungen

Type	Credits	Recurrence	Version
Prüfungsleistung mündlich	5	Irregular	1

T 6.8 Course: Algorithms for Planar Graphs [T-INFO-101986]

Responsible: Prof. Dr. Dorothea Wagner
Organisation: KIT Department of Informatics
Part of: M-INFO-101220 - Algorithmen für planare Graphen
M-INFO-102060 - Weitere Leistungen

Type	Credits	Recurrence	Version
Prüfungsleistung mündlich	5	Each summer term	1

Events					
SS 2019	24614	Algorithmen für planare Graphen (mit Übungen)	2 SWS	Lecture / Practice (VÜ)	Wagner, Brückner

T 6.9 Course: Algorithms I [T-INFO-100001]

Responsible: Prof. Dr. Peter Sanders
Organisation: KIT Department of Informatics
Part of: M-INFO-100030 - Algorithmen I

Type Prüfungsleistung schriftlich	Credits 6	Recurrence Each summer term	Version 1

Events					
SS 2019	24500	**Algorithms I**	4 SWS	Lecture / Practice (VÜ)	Sinz, Iser
Exams					
WS 18/19	7500368	**Algorithms I**		Prüfung (PR)	Sinz

T 6.10 Course: Algorithms II [T-INFO-102020]

Responsible:	Prof. Dr. Hartmut Prautzsch
	Prof. Dr. Peter Sanders
	Prof. Dr. Dorothea Wagner
Organisation:	KIT Department of Informatics
Part of:	M-INFO-101173 - Algorithmen II
	M-INFO-102060 - Weitere Leistungen

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	6	Each winter term	1

Events					
WS 18/19	24079	Algorithms II	4 SWS	Lecture (V)	Sanders, Hespe, Lamm
Exams					
WS 18/19	7500245	Algorithms II		Prüfung (PR)	Sanders

T 6.11 Course: Analysis of Multivariate Data [T-WIWI-103063]

Responsible:	Prof. Dr. Oliver Grothe
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101599 - Statistik und Ökonometrie

Type	**Credits**	**Recurrence**	**Version**
Prüfungsleistung schriftlich	4,5	Irregular	1

Exams				
WS 18/19	7900240	Analysis of Multivariate Data	Prüfung (PR)	Grothe

Competence Certificate
The assessment of this course is a written examination (60 min) according to §4(2), 1 of the examination regulation. The exam is offered every semester. Re-examinations are offered only for repeaters.

Prerequisites
None

Recommendation
Attendance of the courses Statistics 1 [2600008] and Statistics 2 [2610020] is recommended.

Annotation
The lecture is not offered regularly. The courses planned for three years in advance can be found online.

T   6.12 Course: Analytical CRM [T-WIWI-102596]

Responsible:	Prof. Dr. Andreas Geyer-Schulz
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101422 - Vertiefung im Customer Relationship Management
	M-WIWI-101460 - CRM und Servicemanagement

Type Prüfungsleistung schriftlich	**Credits** 4,5	**Recurrence** Each summer term	**Version** 1

Events					
SS 2019	2540522	**Analytical CRM**	2 SWS	Lecture (V)	Geyer-Schulz
SS 2019	2540523	**Übungen zu Analytisches CRM**	2 SWS	Practice (Ü)	Schweizer
Exams					
WS 18/19	7979571	**Analytical CRM (Nachklausur SS 2018)**		Prüfung (PR)	Geyer-Schulz

Competence Certificate

Written examination (60 minutes) according to §4(2), 1 SPO. The exam is considered passed if at least 50 out of a maximum of 100 possible points are achieved. The grades are graded in five steps (best grade 1.0 from 95 points). Details of the grade formation and scale will be announced in the course.

A bonus can be acquired through successful participation in the practice. If the grade of the written examination is between 4.0 and 1.3, the bonus improves the grade by one grade level (0.3 or 0.4). The exact criteria for awarding a bonus will be announced at the beginning of the course.

Prerequisites

None

Recommendation

We expect knowledge about data models and the UML modelling language concerning information systems.

Below you will find excerpts from events related to this course:

V	**Analytical CRM** 2540522, SS 2019, 2 SWS, Open in study portal	**Lecture (V)**

Learning Content

The course Analytical CRM deals with methods and techniques for analysis concerning the management and improval of customer relationships. Knowledge about customers is aggregated and used for enterprise decision problems like product line planning, customer loyalty, etc. A necessary precondition for these analyses is the transformation of data stemming from operative systems into a common data warehouse that assembles all necessary information. This requires transformation of data models and processes for creating and managing a data warehouse, like ETL processes, data quality and monitoring. The generation of customer oriented and flexible reports for different business purposes is covered. The course finally treats several different statistical analysis methods like clustering, regression etc. that are necessary for generating important indicators (like customer lifetime value, customer segmenatation). As external data source, customer surveys are introduced.

Workload

The total workload for this course is approximately 135 hours (4.5 credits):

Time of attendance

- Attending the lecture: 15 x 90min = 22h 30m
- Attending the exercise classes: 7 x 90min = 10h 30m
- Examination: 1h 00m

Self-study

- Preparation and wrap-up of the lecture: 15 x 180min = 45h 00m
- Preparing the exercises: 25h 00m
- Preparation of the examination: 31h 00m

Sum: 135h 00m

Literature

Ponnia, Paulraj. Data Warehousing Fundamentals: A Comprehensive Guide for IT Professionals. Wiley, New York, 2001.

Duda, Richard O. und Hart, Peter E. und Stork, David G. Pattern Classification. Wiley-Interscience, New York, 2. Ausgabe, 2001.

Maddala, G. S. Introduction to Econometrics. Wiley, Chichester, 3rd Ed., 2001.

Theil, H. Principles of Econometrics. Wiley, New York, 1971.

T 6.13 Course: Applications of Artificial Intelligence [T-WIWI-109263]

Responsible:	Prof. Dr. York Sure-Vetter
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101438 - Semantisches Wissensmanagement

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	5	Each winter term	1

Events					
WS 18/19	2511314	Applications of Artificial Intelligence	2 SWS	Lecture (V)	Sure-Vetter
WS 18/19	2511315	Exercises to Applications of Artificial Intelligence	1 SWS	Practice (Ü)	Sure-Vetter, Weller

Exams				
WS 18/19	7900091	Applications of Artificial Intelligence	Prüfung (PR)	Sure-Vetter

Competence Certificate
Written Examination (60 min) according to §4, Abs. 2, 1 of the examination regulations or oral examination of 20 minutes according to §4, Abs. 2, 2 of the examination regulations. The exam takes place every semester and can be repeated at every regular examination date.

Prerequisites
None.

Recommendation
Basics in logic, e.g. from lecture Foundations of Informatics 1 are important.

Below you will find excerpts from events related to this course:

V Applications of Artificial Intelligence
2511314, WS 18/19, 2 SWS, Open in study portal   **Lecture (V)**

Description
Applications of the AI is a sub-area of computer science dealing with the automation of intelligent behavior. In general, it is a question of mapping human intelligence. Methods of artificial intelligence are presented in various areas such as, for example, question answering systems, speech recognition and image recognition.

The lecture gives an introduction to the basic concepts of artificial intelligence. Essential theoretical foundations, methods and their applications are presented and explained.

Learning Content
This lecture aims to provide students with a basic knowledge and understanding of the structure, analysis and application of selected methods and technologies on artificial intelligence. The topics include, among others, knowledge modeling, machine learning, text mining, uninformed search, and intelligent agents.

Workload

- The total workload for this course is approximately 150 hours
- Time of presentness: 45 hours
- Time of preperation and postprocessing: 67.5 hours
- Exam and exam preperation: 37.5 hours

| **V** | **Exercises to Applications of Artificial Intelligence** 2511315, WS 18/19, 1 SWS, Open in study portal | **Practice (Ü)** |

Description
Multiple exercises are held that capture the topics, held in the lecture Applications of AI and discuss them in detail. Thereby, practical examples are given to the students in order to transfer theoretical aspects into practical implementation.

Learning Content
This lecture aims to provide students with a basic knowledge and understanding of the structure, analysis and application of selected methods and technologies on artificial intelligence. The topics include, among others, knowledge modeling, machine learning, text mining, uninformed search, and intelligent agents.

Workload
The total workload for the lecture Anwendungen der KI is given out on the description of the lecture.

T 6.14 Course: Applied Asset Management [T-WIWI-108445]

Responsible:	Dr. Andreas Sauer
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101423 - Topics in Finance II
	M-WIWI-101465 - Topics in Finance I

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	3	Each winter term	2

Events					
WS 18/19	2530219	Applied Asset Management	2 SWS	Lecture (V)	Sauer
Exams					
WS 18/19	7900061	Applied Asset Management		Prüfung (PR)	Sauer, Ruckes

Competence Certificate
The assessment consists of a written exam (60 minutes) (following §4(2), 1 of the examination regulation).

The exam takes place in every semester. Re-examinations are offered at every ordinary examination date.

Prerequisites
T-WIWI-102879 "Asset Management" must not be selected.

Recommendation
Proficiency of the topics covered in the course "Investments" is required.

Annotation
Former title of the course until winter term 2017/2018: "Asset Management"

Below you will find excerpts from events related to this course:

V Applied Asset Management
2530219, WS 18/19, 2 SWS, Open in study portal

Lecture (V)

Learning Content
The course familiarizes students with the instruments, methods and terms of professional asset management. It conveys the knowledge of applying the relevant methods to students via practical exercises.

Workload
The total workload for this course is approximately 90 hours. For further information see German version.

Literature
Investments and Portfolio Management,
Zvi Bodie, Alex Kane, Alan J. Marcus,

Mcgraw-Hill Publ.Comp., 9. Auflage (2011)

The Theory and Practice of Investment Management: Asset Allocation, Valuation, Portfolio Construction, and Strategies

Frank J. Fabozzi, Harry Markowitz

John Wiley & Sons; 2. Auflage (2011)

T 6.15 Course: Applied Informatics I - Modelling [T-WIWI-102652]

Responsible:	Prof. Dr. Andreas Oberweis Prof. Dr. York Sure-Vetter
Organisation:	KIT Department of Economics and Management
Part of:	M-WIWI-101430 - Angewandte Informatik

Type Prüfungsleistung schriftlich	Credits 4	Recurrence Each winter term	Version 3

Events					
WS 18/19	2511030	Applied Informatics I - Modelling	2 SWS	Lecture (V)	Sure-Vetter, Koschmider, Schiefer, Oberweis
WS 18/19	2511031	Exercises to Applied Informatics I - Modelling	1 SWS	Practice (Ü)	Sure-Vetter, Koschmider, Schiefer, Thoma, Käfer
Exams					
WS 18/19	7900003	Applied Informatics I - Modelling		Prüfung (PR)	Oberweis, Sure-Vetter
SS 2019	7900018	Applied Informatics I - Modelling		Prüfung (PR)	Oberweis, Sure-Vetter

Competence Certificate
The assessment consists of a written examination (60 min) in the first week after lecture period (according to Section 4 (2),1 of the examination regulation).

Prerequisites
None

Below you will find excerpts from events related to this course:

V Applied Informatics I - Modelling
2511030, WS 18/19, 2 SWS, Open in study portal   Lecture (V)

Description
In the context of complex information systems, modelling is of central importance, e.g. – in the context of systems to be developed – for a better understanding of their functionality or in the context of existing systems for supporting maintenance and further development.

Modelling, in particular modelling of information systems, forms the core part of this lecture. The lecture is organized in two parts. The first part mainly covers the modelling of static aspectes, the second part covers the modelling of dynamic aspects of information systems.

Learning Content
The lecture sets out with a definition of modelling and the advantages of modelling. After that, advanced aspects of UML, the Entity Relationship model (ER model) and description logics as a means of modelling static aspects will be explained. This will be complemented by the relational data model and the systematic design of databases based on ER models. For modelling dynamic aspects, different types of petri-nets together with their respective analysis techniques will be introduced.

Workload
Total effort: 120-150 hours

Presence time: 30 hours

Self study: 90-120 hours

Literature

- Bernhard Rumpe. Modellierung mit UML, Springer-Verlag, 2004.
- R. Elmasri, S. B. Navathe. Fundamentals of Database Systems. Pearson Education 2009.
- W. Reisig. Petrinetze, Springer-Verlag, 2010.

Additional literature:

- Pascal Hitzler, Markus Krötzsch, Sebastian Rudolph, York Sure: Semantic Web - Grundlagen, Springer, 2008 (ISBN 978-3-540-33993-9)
- Staab, Studer: Handbook on Ontologies, Springer, 2003
- J.L. Peterson: Petri Net Theory and Modeling of Systems, Prentice Hall, 1981.
- Franz Baader, Diego Calvanese, Deborah McGuinness, Daniele Nardi, Peter Patel-Schneider. The Description Logic Handbook - Theory, Implementation and Applications, Cambridge 2003.

V	**Exercises to Applied Informatics I - Modelling**	**Practice (Ü)**
	2511031, WS 18/19, 1 SWS, Open in study portal	

Description

Multiple exercises are held that capture the topics, held in the lectureApplied Informatics I - Modelling, and discuss them in detail. Thereby, practical examples are given to the students in order to transfer theoretical aspects into practical implementation.

Learning Content

The lecture sets out with a definition of modelling and the advantages of modelling. After that, advanced aspects of UML, the Entity Relationship model (ER model) and description logics as a means of modelling static aspects will be explained. This will be complemented by the relational data model and the systematic design of databases based on ER models. For modelling dynamic aspects, different types of petri-nets together with their respective analysis techniques will be introduced.

Workload

The total workload for the lecture Applied Informatics I - Modelling is given out on the description of the lecture.

Literature

- Bernhard Rumpe. Modellierung mit UML, Springer-Verlag, 2004.
- R. Elmasri, S. B. Navathe. Fundamentals of Database Systems. Pearson Education 2009.
- W. Reisig. Petrinetze, Springer-Verlag, 2010.

Additionalliterature:

- Pascal Hitzler, Markus Krötzsch, Sebastian Rudolph, York Sure: Semantic Web - Grundlagen, Springer, 2008 (ISBN 978-3-540-33993-9)
- Staab, Studer: Handbook on Ontologies, Springer, 2003
- J.L. Peterson: Petri Net Theory and Modeling of Systems, Prentice Hall, 1981.
- Franz Baader, Diego Calvanese, Deborah McGuinness, Daniele Nardi, Peter Patel-Schneider. The Description Logic Handbook - Theory, Implementation and Applications, Cambridge 2003.

6 COURSES

Course: Applied Informatics II - Principles of Internet Computing:
Foundations for Emerging Technologies and Future Services [T-
WIWI-109445]

T 6.16 Course: Applied Informatics II - Principles of Internet Computing: Foundations for Emerging Technologies and Future Services [T-WIWI-109445]

Responsible: Prof. Dr. Ali Sunyaev
Organisation: KIT Department of Economics and Management
Part of: M-WIWI-101430 - Angewandte Informatik

Type Prüfungsleistung schriftlich	Credits 4	Recurrence Each summer term	Version 2

Events					
SS 2019	2511032	Applied Informatics II - Principles of Internet Computing: Foundations for Emerging Technologies and Future Services	2 SWS	Lecture (V)	Sunyaev
SS 2019	2511033	Übungen zu Angewandte Informatik II – Internet Computing	1 SWS	Practice (Ü)	Sunyaev
Exams					
SS 2019	7900025	Applied Informatics II - Internet Computing	Prüfung (PR)		Sunyaev

Competence Certificate
The assessment consists of a written exam (120 min) according to Section 4(2), 1 of the examination regulation. The successful completion of the exercises is recommended for the written exam, which is offered at the end of the winter semester and at the end of the summer semester.

By successful processing the exercises a bonus can be obtained. If the grade of the written exam is at least 4.0 and at most 1.3, the bonus will improve it by one grade level (i.e. by 0.3 or 0.4).

Prerequisites
None

Recommendation
Knowledge of content of the modules Basic Notions of Computer Science and Algorithms I is expected.

Below you will find excerpts from events related to this course:

V Applied Informatics II - Principles of Internet Computing: Foundations for Emerging Technologies and Future Services
2511032, SS 2019, 2 SWS, Open in study portal
Lecture (V)

Learning Content
The lecture Applied Computer Science II provides insights into fundamental concepts and future technologies of distributed systems and Internet computing. Students should be able to select, design and apply the presented concepts and technologies. The course first introduces basic concepts of distributed systems (e.g. design of architectures for distributed systems, internet architectures, web services, middleware).

In the second part of the course, emerging technologies of Internet computing will be examined in depth. These include, among others:

- Cloud Computing
- Edge & Fog Computing
- Internet of Things
- Blockchain
- Artificial Intelligence

Workload
The total workload for this course is approximately 150 hours. For further information see German version.

6 COURSES

Course: Applied Informatics II - Principles of Internet Computing: Foundations for Emerging Technologies and Future Services [T-WIWI-109445]

Literature
Tba in the lecture.

T   6.17 Course: Auction & Mechanism Design [T-WIWI-102876]

Responsible: Prof. Dr. Nora Szech
Organisation: KIT Department of Economics and Management
Part of: M-INFO-102060 - Weitere Leistungen
                     M-WIWI-101499 - Angewandte Mikroökonomik
                     M-WIWI-101501 - Wirtschaftstheorie

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	4,5	Each summer term	1

Events					
SS 2019	2560550	Auction and Mechanism Design	2 SWS	Lecture (V)	Szech
SS 2019	2560551	Übung zu Auction and Mechanism Design	1 SWS	Practice (Ü)	Szech, Huber

Competence Certificate

The assessment consists of a written exam (60 minutes) (following §4(2), 1 of the examination regulation).
The exam takes place in every semester. Re-examinations are offered at every ordinary examination date.

A bonus can be earned through successful participation in the excercise. If the grade of the written examination is between 4.0 and 1.3, the bonus improves the grade by one grade level (0.3 or 0.4). The exact criteria for awarding a bonus will be announced at the beginning of the course.

Prerequisites

None

Recommendation

Basic knowledge of microeconomics and statistics are recommended. A background in game theory is helpful, but not absolutely necessary.

Annotation

The lecture will be held in English.

Below you will find excerpts from events related to this course:

V   Auction and Mechanism Design
2560550, SS 2019, 2 SWS, Open in study portal   **Lecture (V)**

Learning Content

The course starts with the basic theory of equilibrium behavior and revenue management in one object standard auctions. The revenue equivalence theorem for standard auctions is introduced. Thereafter, the course focuses on mechanism design and its applications to one object auctions and bilateral trade.

Annotation

The lecture will be held in English.

Workload

The total workload for this course is approximately 135.0 hours. For further information see German version.

Literature

Krishna, V.: Auction Theory, Academic Press, 2009.

Milgrom, P.: Putting Auction Theory to Work, Cambridge University Press, 2010.

Mathews, S.: A Technical Primer on Auction Theory I: Independent Private Values No. 1096. Northwestern University, Center for Mathematical Studies in Economics and Management Science, 1995.

T 6.18 Course: Bachelor Thesis [T-WIWI-103095]

Responsible:	Prof. Dr. Sebastian Abeck
	Prof. Dr. Hagen Lindstädt
Organisation:	KIT Department of Economics and Management
Part of:	M-WIWI-101611 - Modul Bachelorarbeit

Type	Credits	Version
Abschlussarbeit	12	1

Competence Certificate
see module description

Prerequisites
see module description

Final Thesis
This course represents a final thesis. The following periods have been supplied:

Submission deadline	6 months
Maximum extension period	1 months
Correction period	8 weeks

This thesis requires confirmation by the examination office.

T   6.19 Course: Basic Notions of Computer Science [T-INFO-101964]

Responsible:	Dr. Sebastian Stüker
	Thomas Worsch
Organisation:	KIT Department of Informatics
Part of:	M-INFO-101170 - Grundbegriffe der Informatik
	M-WIWI-101528 - Orientierungsprüfung

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	6	Each winter term	1

Events					
WS 18/19	24001	Grundbegriffe der Informatik	3 SWS	Lecture (V)	Worsch
Exams					
WS 18/19	75400100	Basic Notions of Computer Science		Prüfung (PR)	Worsch

T   6.20 Course: Basic Notions of Computer Science I Pass [T-INFO-101965]

Responsible:	Dr. Sebastian Stüker
	Thomas Worsch
Organisation:	KIT Department of Informatics
Part of:	M-INFO-101170 - Grundbegriffe der Informatik
	M-WIWI-101528 - Orientierungsprüfung

Type	Credits	Recurrence	Version
Studienleistung	0	Each winter term	1

Events					
WS 18/19	24002	Übungen zu Grundbegriffe der Informatik	1 SWS	Practice (Ü)	Worsch
Exams					
WS 18/19	7500191	Basic Notions of Computer Science I Pass		Prüfung (PR)	Worsch

T 6.21 Course: Basic Principles of Economic Policy [T-WIWI-103213]

Responsible:	Prof. Dr. Ingrid Ott
Organisation:	KIT Department of Economics and Management
Part of:	M-WIWI-101668 - Wirtschaftspolitik I

Type Prüfungsleistung schriftlich	Credits 4,5	Recurrence Each summer term	Version 1

Events					
SS 2019	2560280	**Basic Principles of Economic Policy**	2 SWS	Lecture (V)	Ott
SS 2019	2560281	**Übungen zur Einführung in die Wirtschaftspolitik**	1 SWS	Practice (Ü)	Ott, Bälz, Scheu
Exams					
WS 18/19	7900079	**Basic Principles of Economic Policy**		Prüfung (PR)	Ott

Competence Certificate
The assessment consists of a written exam (60 min) according to Section 4(2), 1 of the examination regulation. The exam takes place in every semester. Re-examinations are offered at every ordinary examination date.

Prerequisites
None

Recommendation
Basic knowledge of micro- and macroeconomics is assumed, as taught in the courses Economics I [2610012], and Economics II [2600014].

Below you will find excerpts from events related to this course:

V Basic Principles of Economic Policy
2560280, SS 2019, 2 SWS, Open in study portal　　　　　　　　　　　　　Lecture (V)

Learning Content

- Intervention in the market: micro-economic perspective
- Intervention in the market: macroeconomic perspective
- Institutional economic aspects
- Economic policy and welfare economics
- Carriers of economic policy: political-economic aspects

Annotation
The course "Basic Principles of Economic Policy" [2560280] is not offered in summer term 2015.

Workload
The total workload for this course is approximately 135.0 hours. For further information see German version.

Literature
See announcements to the lecture

T 6.22 Course: Basics of German Company Tax Law and Tax Planning [T-WIWI-108711]

Responsible:	Gerd Gutekunst Prof. Dr. Berthold Wigger
Organisation:	KIT Department of Economics and Management
Part of:	M-WIWI-101403 - Finanzwissenschaft M-WIWI-101423 - Topics in Finance II M-WIWI-101465 - Topics in Finance I

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	4,5	Each winter term	1

Events					
WS 18/19	2560134	Basics of German Company Tax Law and Tax Planning	3 SWS	Lecture (V)	Wigger, Gutekunst
Exams					
WS 18/19	790unbe	Basics of German Company Tax Law and Tax Planning		Prüfung (PR)	Wigger
SS 2019	790unbe	Basics of German Company Tax Law and Tax Planning		Prüfung (PR)	Wigger

Competence Certificate

The assessment consists of a written exam (60 min.) according to § 4 paragraph 2 Nr. 1 of the examination regulation.

Prerequisites

None

Recommendation

Knowledge of the collection of public revenues is assumed. Therefore it is recommended to attend the course "Öffentliche Einnahmen" beforehand.

T 6.23 Course: Big Data Analytics [T-INFO-101305]

Responsible: Prof. Dr.-Ing. Klemens Böhm
Organisation: KIT Department of Informatics
Part of: M-INFO-101193 - Grundlagen von Informationssystemen
M-INFO-101193 - Grundlagen von Informationssystemen
M-INFO-101229 - Datenbanksysteme in Theorie und Praxis
M-INFO-101235 - Grundlagen des Daten- und Informationsmanagements
M-INFO-102060 - Weitere Leistungen

Type	Credits	Recurrence	Version
Prüfungsleistung mündlich	5	Each winter term	1

Events					
WS 18/19	24114	Big Data Analytics	3 SWS	Lecture (V)	Böhm
Exams					
WS 18/19	7500087	Big Data Analytics		Prüfung (PR)	Böhm

T 6.24 Course: Big Data Analytics 2 [T-INFO-105742]

Responsible:	Prof. Dr.-Ing. Klemens Böhm
Organisation:	KIT Department of Informatics
Part of:	M-INFO-101193 - Grundlagen von Informationssystemen
	M-INFO-102060 - Weitere Leistungen

Type	Credits	Recurrence	Version
Prüfungsleistung mündlich	3	Irregular	1

Events					
SS 2019	2400042	Big Data Analytics 2	2 SWS	Lecture (V)	Böhm
Exams					
WS 18/19	7500190	Big Data Analytics 2		Prüfung (PR)	Böhm

Prerequisites

T 6.25 Course: Business Administration: Finance and Accounting [T-WIWI-102819]

Responsible: Prof. Dr. Martin Ruckes
Prof. Dr. Marliese Uhrig-Homburg
Prof. Dr. Marcus Wouters

Organisation: KIT Department of Economics and Management

Part of: M-WIWI-101491 - Grundlagen der Betriebswirtschaftslehre

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	4	Each winter term	1

Events					
WS 18/19	2610026	Business Administration: Finance and Accounting	2 SWS	Lecture (V)	Ruckes, Wouters
WS 18/19	2610027	Tutorien zu Betriebswirtschaftslehre: Finanzwirtschaft und Rechnungswesen	2 SWS	Tutorial (Tu)	Strych
Exams					
WS 18/19	7900245	Business Administration: Finance and Accounting		Prüfung (PR)	Wouters, Ruckes

Competence Certificate

The assessment consists of a written exam (90 min.) according to Section 4(2), 1 of the examination regulation.
The assessment takes place in every semester. Re-examinations are offered at every ordinary examination date.

Prerequisites

None

Annotation

Key qualifications can be shown in an active participation through presentations of solutions and discussions in the tutorials which accompany the course. Each part of the course is taught by instructors specialised in the field of that part.

Below you will find excerpts from events related to this course:

V Business Administration: Finance and Accounting
2610026, WS 18/19, 2 SWS, Open in study portal

Lecture (V)

Learning Content

- **Investment and Finance:**
    - Valuation of Bonds and Stocks
    - Capital Budgeting
    - Portfolio Theory
- **Financial Accounting**
- **Management Accounting**

Annotation

Key qualifications can be shown in an active participation through presentations of solutions and discussions in the tutorials which accompany the course. Each part of the course is taught by instructors specialised in the field of that part.

Workload

The total workload for this course is approximately 120 hours. For further information see German version.

Literature

Extensive bibliographic information will be given in the materials to the lecture.

| **T** | **6.26 Course: Business Administration: Production Economics and Marketing [T-WIWI-102818]** |

Responsible: Prof. Dr. Wolf Fichtner
Prof. Dr. Martin Klarmann
Prof. Dr.-Ing. Thomas Lützkendorf
Prof. Dr. Martin Ruckes
Prof. Dr. Frank Schultmann

Organisation: KIT Department of Economics and Management

Part of: M-INFO-102060 - Weitere Leistungen
M-WIWI-101492 - Betriebswirtschaftslehre

Type Prüfungsleistung schriftlich	**Credits** 4	**Recurrence** Each summer term	**Version** 1

Events					
SS 2019	2500027	**Tutorien zu BWL PM**	2 SWS	Tutorial (Tu)	Klarmann, Strych, Assistenten
SS 2019	2600024	**Business Administration: Production Economics and Marketing**	2 SWS	Lecture (V)	Klarmann, Schultmann, Fichtner
Exams					
WS 18/19	7900207	**Business Administration: Production Economics and Marketing**		Prüfung (PR)	Fichtner, Klarmann

Competence Certificate

The assessment consists of a written exam (90 minutes) according to Section 4(2), 1 of the examination regulation.

Prerequisites

None

Below you will find excerpts from events related to this course:

| **V** | **Business Administration: Production Economics and Marketing**
2600024, SS 2019, 2 SWS, Open in study portal | **Lecture (V)** |

Description

1. Marketing:

Marketing is an organizational function to handle situations, activities, and processes for creating, communicating, and delivering value to customers in a best way. (Customer) relationship management comprises collecting, aggregating, and analyzing information (e.g., developements in the society, changing conditions of markets, alterations w.r.t. buying behavior) to benefit different target groups.

Main topics will deal with market research and optimized application of marketing mix instruments with emphasis on 'marketing and the web','innovation management', and 'international marketing'.

2. Production economics

In the part of production economics the student will learn basics in the field of production theory, procurement and resource aquisitions, production and operations management and industrial engineering.

Aspects of electrical engineering industry, technological foresights, construction industry andreal estate markets will be treated.

3. Information systems

In today's economy, information is a competetive factor that calls for an interdisciplinary investigation from economics and business administration, informatics and law. In this part of the lecture, selected topics from information engineering and management and their impact in market competition are presented

Topics include: Information in a company, Information processing: From an agent to business networks, social networks, service value networks, market engineering

Learning Content

The course is made up of the following topics:

Marketing

- Foundations of marketing
- Strategic marketing
- Cosumer behaviour
- Product
- Price
- Promotion
- Sales
- Marketing Metrics

Production economics

In the part of production economics the student will learn basics in the field of production theory, procurement and resource aquisitions, production and operations management and industrial engineering.

Aspects of energy economics, technological foresights, construction industry and real estate markets will be treated.

Annotation

Key qualifications can be shown in an active participation through presentations of solutions and discussions in the tutorials which accompany the course.

Each part of the course is taught by instructors specialised in the field of that part.

Workload

The total workload for this course is approximately 120 hours. For further information see German version.

Literature

Further literature references are announced in the materials to the lecture.

T 6.27 Course: Business Process Modelling [T-WIWI-102697]

Responsible:	Prof. Dr. Andreas Oberweis
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101438 - Semantisches Wissensmanagement
	M-WIWI-101476 - Geschäftsprozesse und Informationssysteme

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	5	Each winter term	1

Events					
WS 18/19	2511210	**Business Process Modelling**	2 SWS	Lecture (V)	Drescher, Oberweis
WS 18/19	2511211	**Übung zu Modellierung von Geschäftsprozessen**	1 SWS	Practice (Ü)	Drescher, Koschmider

Exams				
WS 18/19	7900015	**Business Process Modelling**	Prüfung (PR)	Oberweis
SS 2019	7900047	**Business Process Modelling**	Prüfung (PR)	Oberweis

Competence Certificate
The assessment of this course is a written examination (60 min) according to §4(2), 1 of the examination regulation in the first week after lecture period.

Prerequisites
None

Below you will find excerpts from events related to this course:

V Business Process Modelling
2511210, WS 18/19, 2 SWS, Open in study portal   **Lecture (V)**

Learning Content
The proper modeling of relevant aspects of business processes is essential for an efficient and effective design and implementation of processes. This lecture presents different classes of modeling languages and discusses the respective advantages and disadvantages of using actual application scenarios. For that simulative and analytical methods for process analysis are introduced. In the accompanying exercise the use of process modeling tools is practiced.

Workload
Lecture 30h
Exercise 15h

Preparation of lecture 30h
Preparation of exercises 30h
Exam preparation 44h
Exam 1h

Total: 150h

Literature

- M. Weske: Business Process Management: Concepts, Languages, Architectures. Springer 2012.
- F. Schönthaler, G.Vossen, A. Oberweis, T. Karl: Business Processes for Business Communities: Modeling Languages, Methods, Tools. Springer 2012.

Further Literature will be given in the lecture.

T 6.28 Course: Business Strategies of Banks [T-WIWI-102626]

Responsible:	Prof. Dr. Wolfgang Müller
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101423 - Topics in Finance II
	M-WIWI-101465 - Topics in Finance I

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	3	Each winter term	1

Events					
WS 18/19	2530299	Business Strategies of Banks	2 SWS	Lecture (V)	Müller
Exams					
WS 18/19	7900064	Business Strategies of Banks		Prüfung (PR)	Müller, Ruckes
SS 2019	7900079	Business Strategies of Banks		Prüfung (PR)	Müller

Competence Certificate
See German version.

Prerequisites
None

Recommendation
None

Below you will find excerpts from events related to this course:

V Business Strategies of Banks
2530299, WS 18/19, 2 SWS, Open in study portal   Lecture (V)

Description
The management of a bank is in charge of the determination and implementation of business policy - taking into account all relevant endogenous and exogenous factors - that assures the bank's success in the long run. In this context, there exists a large body of banking models and theories which are helpful in describing the success and risk of a bank. This course is meant to be the bridging of banking theory and practical implementation. In the course of the lectures students will learn to take on the bank management's perspective.
The first chapter deals with the development of the banking sector. Making use of appropriate assumptions, a banking policy is developed in the second chapter. The design of bank services (ch. 3) and the adequate marketing plan (ch. 4) are then built on this framework. The operational business of banks must be guided by appropriate risk and earnings management (ch. 5 and 6), which are part of the overall (global) bank management (ch. 7). Chapter eight, at last, deals with the requirements and demands of bank supervision as they have significant impact on a bank's corporate policy.

Learning Content
The management of a bank is in charge of the determination and implementation of business policy - taking into account all relevant endogenous and exogenous factors - that assures the bank's success in the long run. In this context, there exists a large body of banking models and theories which are helpful in describing the success and risk of a bank. This course is meant to be the bridging of banking theory and practical implementation. In the course of the lectures students will learn to take on the bank management's perspective.
The first chapter deals with the development of the banking sector. Making use of appropriate assumptions, a banking policy is developed in the second chapter. The design of bank services (ch. 3) and the adequate marketing plan (ch. 4) are then built on this framework. The operational business of banks must be guided by appropriate risk and earnings management (ch. 5 and 6), which are part of the overall (global) bank management (ch. 7). Chapter eight, at last, deals with the requirements and demands of bank supervision as they have significant impact on a bank's corporate policy.

Workload
The total workload for this course is approximately 90 hours. For further information see German version.

Literature
Elective literature:

- A script is disseminated chapter by chapter during the course of the lecture.
- Hartmann-Wendels, Thomas; Pfingsten, Andreas; Weber, Martin; 2000, Bankbetriebslehre, 6th edition, Springer

T   6.29 Course: Civil Law for Beginners [T-INFO-103339]

Responsible: Prof. Dr. Thomas Dreier
Organisation: KIT Department of Informatics
Part of: M-INFO-101190 - Einführung in das Privatrecht

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	4	Each winter term	1

Events					
WS 18/19	24012	Civil Law for Beginners	4 SWS	Lecture (V)	Matz
Exams					
WS 18/19	7500012	Civil Law for Beginners		Prüfung (PR)	Matz, Dreier
SS 2019	7500041	Civil Law for Beginners		Prüfung (PR)	Dreier, Matz

T 6.30 Course: Competition in Networks [T-WIWI-100005]

Responsible:	Prof. Dr. Kay Mitusch
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101422 - Vertiefung im Customer Relationship Management
	M-WIWI-101499 - Angewandte Mikroökonomik
	M-WIWI-101668 - Wirtschaftspolitik I

Type Prüfungsleistung schriftlich	**Credits** 4,5	**Recurrence** Each winter term	**Version** 2

Events					
WS 18/19	2561204	Competition in Networks	2 SWS	Lecture (V)	Mitusch
WS 18/19	2561205	Übung zu Wettbewerb in Netzen	1 SWS	Practice (Ü)	Wisotzky
Exams					
WS 18/19	7900268	Competition in Networks		Prüfung (PR)	Mitusch

Competence Certificate

Result of success is made by a 60 minutes written examination during the semester break (according to §4(2), 1 ERSC). Examination is offered every semester and can be retried at any regular examination date.

Prerequisites

None.

Recommendation

Basics of microeconomics obtained within the undergraduate programme (B.Sc) of economics are required.

Below you will find excerpts from events related to this course:

V Competition in Networks
2561204, WS 18/19, 2 SWS, Open in study portal

Lecture (V)

Description

Network or infrastructure industries like telecommunication, transport, and utilities form the backbone of modern economies. The lecture provides an overview of the economic characteristics of network industries. The planning of networks is complicated by the multitude of aspects involved (like spatial differentiation and the like). The interactions of different companies - competition or cooperation or both - are characterized by complex interdependencies within the networks: network effects, economies of scale, effects of vertical integration, switching costs, standardization, compatibility etc. appear increasingly in these sectors and even tend to appear in combination. Additionally, government interventions can often be observed, partly driven by the aims of competition policy and partly driven by the aims industrial policy. All these issues are brought up, analyzed formally (in part) and illustrated by several examples in the lecture.

Workload

The total workload for this course is approximately 135.0 hours. For further information see German version.

Literature

Will be announced in the lecture.

T 6.31 Course: Computer Architecture [T-INFO-101355]

Responsible: Prof. Dr.-Ing. Jörg Henkel
                       Prof. Dr. Wolfgang Karl
Organisation: KIT Department of Informatics
Part of: M-INFO-100818 - Rechnerstrukturen
                       M-INFO-102060 - Weitere Leistungen

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	6	Each summer term	1

Events					
SS 2019	2424570	Computer structures	3 SWS	Lecture (V)	Karl
Exams					
WS 18/19	7500034	Computer Architecture		Prüfung (PR)	Karl

T   6.32 Course: Computer Organization [T-INFO-103531]

Responsible: Prof. Dr. Wolfgang Karl
Organisation: KIT Department of Informatics
Part of: M-INFO-101836 - Technische Informatik
M-INFO-102060 - Weitere Leistungen

Type	Credits	Version
Prüfungsleistung schriftlich	6	1

Events					
WS 18/19	24502	Computer Organization	3 SWS	Lecture (V)	Karl
WS 18/19	24505	Übungen zu Rechnerorganisation	2 SWS	Practice (Ü)	Karl
Exams					
WS 18/19	7500228	Computer Organization		Prüfung (PR)	Karl

T | 6.33 Course: Computing Lab Business Information Systems [T-WIWI-102675]

Responsible:	Prof. Dr. Andreas Oberweis Prof. Dr. York Sure-Vetter
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen M-WIWI-101476 - Geschäftsprozesse und Informationssysteme

Type Prüfungsleistung anderer Art	Credits 4	Recurrence Each term	Version 1

Events					
SS 2019	2512101	Praktikum Betriebliche Informationssysteme: Realisierung innovativer Dienste für Studierende	3 SWS	Practical course (P)	Oberweis, Toussaint, Ullrich

Competence Certificate

The assessment of this course are practical work, presentations and a written thesis according to §4(2), 3 of the examination regulation. Practical work, presentations and a written thesis are weighted according to the course.

Prerequisites

None

Annotation

The title of this course is a generic one. Specific titles and the topics of offered seminars will be announced before the start of a semester in the internet at http://www.aifb.uni-karlsruhe.de/Lehre

T 6.34 Course: Consulting in Practice [T-INFO-101975]

Responsible:	Prof. Dr.-Ing. Klemens Böhm
Organisation:	KIT Department of Informatics
Part of:	M-INFO-101193 - Grundlagen von Informationssystemen
	M-INFO-101235 - Grundlagen des Daten- und Informationsmanagements
	M-INFO-102060 - Weitere Leistungen

Type Studienleistung	**Credits** 1,5	**Recurrence** Irregular	**Version** 1

Events					
WS 18/19	24664	Praxis der Unternehmensberatung	2 SWS	Lecture (V)	Böhm, Lang
Exams					
WS 18/19	7500227	Consulting in Practice		Prüfung (PR)	Böhm

Below you will find excerpts from events related to this course:

V Praxis der Unternehmensberatung
24664, WS 18/19, 2 SWS, Open in study portal

Lecture (V)

Description

The market for consulting sevices grows annually by 20% and is therefore one of the leading growth sectors and professional fields in the future. This trend is in particular driven by the IT industry. Here, widely used standard software moves the focus of the future professional field from software development to consulting. In this context, consulting services have usually a broad definition, reaching from pure IT-focused consulting (e.g., deployment of SAP) to strategic consulting (strategy, organisation etc). In contrast to common rumors, a qualification in business studies is not a must. This opens up a diversified and exciting field with exceptional development perspectives for computer science students. The copurse deals thematically with the two fields consulting in general and function-specific consulting (with IT consulting as an example).

The structure of the course is oriented along the phases of a consulting project:

- Diagnosis: The consultant as an analytic problem solver.
- Strategic adjustment/redesign of the core processes: Optimisation/redesign of essential business functionality to solve the diagnosed problems in cooperation with the client.
- Implementation: Installation of the solutions in the clients`s organisation for assuring the implementation.

Emphasised topics in the course are:

- Elementary problem solving: Problem definition, structuring of problems and focussing through the usage of tools (e.g., logic and hypothesis trees), creative techniques, solution systems etc.
- Obtaining information effectively: Access of information sources, interview techniques etc.
- Effective communication of findings/recommendations. Analysis/planning of communication (media, audience, formats), communication styles (e.g., top-down vs. bottom-up), special topics (e.g., arrangement of complex information) etc.
- Efficient teamwork: Tools for optimising efficient work, collaboration with clients, intellectual and process leadership in the team etc.

T 6.35 Course: Customer Relationship Management [T-WIWI-102595]

Responsible: Prof. Dr. Andreas Geyer-Schulz
Organisation: KIT Department of Economics and Management
Part of: M-INFO-102060 - Weitere Leistungen
M-WIWI-101460 - CRM und Servicemanagement

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	4,5	Each winter term	1

Events					
WS 18/19	2540508	Customer Relationship Management	2 SWS	Lecture (V)	Geyer-Schulz
WS 18/19	2540509	Übung zu Customer Relationship Management	1 SWS	Practice (Ü)	Schweigert
Exams					
WS 18/19	7979242	Customer Relationship Management		Prüfung (PR)	Geyer-Schulz

Competence Certificate
Written examination (60 minutes) according to §4(2), 1 SPO. The exam is considered passed if at least 50 out of a maximum of 100 possible points are achieved. The grades are graded in five steps (best grade 1.0 from 95 points). Details of the grade formation and scale will be announced in the course.

A bonus can be acquired through successful participation in the practice. If the grade of the written examination is between 4.0 and 1.3, the bonus improves the grade by one grade level (0.3 or 0.4). The exact criteria for awarding a bonus will be announced at the beginning of the course.

Prerequisites
None

Below you will find excerpts from events related to this course:

V Customer Relationship Management
2540508, WS 18/19, 2 SWS, Open in study portal

Lecture (V)

Learning Content
The course begins with an introduction into Service Management as the strategic concept which also covers all CRM applications. The course is divided in the basics of Service Management as well as different topics within this concept like external and internal marketing, quality management and organizational requirements.

Workload
The total workload for this course is approximately 135 hours (4.5 credits):

Time of attendance

- Attending the lecture: 15 x 90min = 22h 30m
- Attending the exercise classes: 7 x 90min = 10h 30m
- Examination: 1h 00m

Self-study

- Preparation and wrap-up of the lecture: 15 x 180min = 45h 00m
- Preparing the exercises: 25h 00m
- Preparation of the examination: 31h 00m

Sum: 135h 00m

Literature

Christian Grönroos. Service Management and Marketing : A Customer Relationship Management Approach. Wiley, Chichester, 2nd edition, 2000.

Elective literature:

Jill Dyché. The CRM Handbook: A Business Guide to Customer Relationship Management. Addison-Wesley, Boston, 2nd edition, 2002.

Ronald S. Swift. Accelerating Customer Relationships: Using CRM and RelationshipTechnologies. Prentice Hall, Upper Saddle River, 2001.

Stanley A. Brown. Customer Relationship Management: A Strategic Imperative in theWorld of E-Business. John Wiley, Toronto, 2000.

T   6.36 Course: Data and Storage Management [T-INFO-101276]

Responsible:	Prof. Dr. Bernhard Neumair
Organisation:	KIT Department of Informatics
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101440 - Internetanwendungen

Type	Credits	Recurrence	Version
Prüfungsleistung mündlich	4	Each winter term	1

Events					
WS 18/19	24074	Data and Storage Management	2 SWS	Lecture (V)	Neumair
Exams					
WS 18/19	7500112	Data and Storage Management		Prüfung (PR)	Neumair

T   6.37 Course: Data Mining and Applications [T-WIWI-103066]

Responsible:	Rheza Nakhaeizadeh
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101599 - Statistik und Ökonometrie

Type	Credits	Recurrence	Version
Prüfungsleistung mündlich	4,5	Each summer term	2

Events					
SS 2019	2520375	Data Mining and Applications	2/4 SWS	Lecture (V)	Nakhaeizadeh

Competence Certificate

- Conduction of a larger emprical study in groups
- reporting of milestones
- final presentation (app. 45 minutes)

Prerequisites
None

Below you will find excerpts from events related to this course:

V   Data Mining and Applications
2520375, SS 2019, 2/4 SWS, Open in study portal

Lecture (V)

Learning Content
Part one: Data Mining

Why Data Mining?

- What is Data Mining?
- History of Data Mining
- Conferences and Journals on Data Mining
- Potential Applications
- Data Mining Process:
- Business Understanding
- Data Understanding
- Data Preparation
- Modeling
- Evaluation
- Deployment
- Interdisciplinary aspects of Data Mining
- Data Mining tasks
- Data Mining Algorithms (Decision Trees, Association Rules,
- Regression, Clustering, Neural Networks)
- Fuzzy Mining
- OLAP and Data Warehouse
- Data Mining Tools
- Trends in Data Mining

Part two: Examples of application of Data Mining

- Success parameters of Data Mining Projects
- Application in industry
- Application in Commerce

Workload
The total workload for this course is approximately 135 hours. For further information see German version.

Literature
U. Fayyad, G. Piatetsky-Shapiro, P. Smyth, R. Uthurusamy, editors, Advances in Knowledge Discovery and Data Mining, AAAI/ MIT Press, 1996 (order on-line from Amazon.com or from MIT Press).

- Jiawei Han, Micheline Kamber, Data Mining : Concepts and Techniques, 2nd edition, Morgan Kaufmann, ISBN 1558609016, 2006.
- David J. Hand, Heikki Mannila and Padhraic Smyth, Principles of Data Mining , MIT Press, Fall 2000
- Trevor Hastie, Robert Tibshirani, Jerome Friedman, The Elements of Statistical Learning: Data Mining, Inference, and Prediction, Springer Verlag, 2001.
- Pang-Ning Tan, Michael Steinbach, Vipin Kumar, Introduction to Data Mining, Pearson Addison wesley (May, 2005). Hardcover: 769 pages. ISBN: 0321321367
- Ripley, B.D. (1996) Pattern Recognition and Neural Networks, Cambridge: Cambridge University Press.
- Ian witten and Eibe Frank, Data Mining: Practical Machine Learning Tools and Techniques, 2nd Edition, Morgan Kaufmann, ISBN 0120884070, 2005.

T **6.38 Course: Data Protection Law [T-INFO-101303]**

Responsible:	Prof. Dr. Nikolaus Marsch
Organisation:	KIT Department of Informatics
Part of:	M-INFO-101253 - Geistiges Eigentum und Datenschutz
	M-INFO-102060 - Weitere Leistungen

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	3	Each winter term	1

Events					
WS 18/19	24018	Datenschutzrecht	2 SWS	Lecture (V)	Marsch
Exams					
WS 18/19	7500162	Data Protection Law		Prüfung (PR)	Marsch
SS 2019	7500083	Data Protection Law		Prüfung (PR)	Marsch

T   6.39 Course: Database Systems [T-INFO-101497]

Responsible: Prof. Dr.-Ing. Klemens Böhm
Organisation: KIT Department of Informatics
Part of: M-INFO-101178 - Kommunikation und Datenhaltung
M-INFO-101235 - Grundlagen des Daten- und Informationsmanagements
M-INFO-102060 - Weitere Leistungen

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	4	Each summer term	1

Events					
SS 2019	24516	Datenbanksysteme	2 SWS	Lecture (V)	Böhm, Mülle
Exams					
WS 18/19	7500189	Database Systems		Prüfung (PR)	Böhm

T 6.40 Course: Decision Theory [T-WIWI-102792]

Responsible:	Prof. Dr. Karl-Martin Ehrhart
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101499 - Angewandte Mikroökonomik

Type	**Credits**	**Recurrence**	**Version**
Prüfungsleistung schriftlich	4,5	Each summer term	1

Events					
SS 2019	2520365	Decision Theory	2 SWS	Lecture (V)	Ehrhart
SS 2019	2520366	Übungen zu Entscheidungstheorie	1 SWS	Practice (Ü)	Ehrhart
Exams					
WS 18/19	7900223	Decision Theory		Prüfung (PR)	Ehrhart

Competence Certificate
The assessment of this course is a written examination (following §4(2), 1 SPO) of 60 mins.
The exam is offered each semester.

Prerequisites
None

Recommendation
Knowledge in mathematics and statistics is required.

Below you will find excerpts from events related to this course:

V Decision Theory
2520365, SS 2019, 2 SWS, Open in study portal   Lecture (V)

Description
In the first part of the course we deal with problems of decision making under uncertainty and introduce models like expected utility theory, stochastic dominance, risk aversion, and prospect. theory. We also consider the empirical validity of the different approaches.

In the second part the concepts learned in the first part are applied for example to search models and Bayesian games.

Learning Content
This course deals with problems of decision making particularly under uncertainty. We introduce the expected utility theory of Neumann/Morgenstern and the prospect theory of Kahnemann/Tversky and discuss the concepts of stochastic dominance, risk aversion, loss aversion, reference points etc. We also consider the empirical validity of the different approaches. Additionally, the lecture provides an introduction to the theory of findings (epistemology), particularly with respect to decision theory.

Annotation
The course "Decision Theory" [2520365] will not be offered any more in M.Sc. from winter term 2015/2016 on.

Workload
The total workload for this course is approximately 135.0 hours. For further information see German version.

Literature

- Ehrhart, K.-M. und S.K. Berninghaus (2012): Decision Theory, Script, KIT.
- Hirshleifer und Riley (1997): The Analytics of Uncertainty and Information. London: Cambridge University Press, 4. Edtion.
- Berninghaus, S.K., K.-M. Ehrhart und W. Güth (2006): Strategische Spiele. Berlin u.a.: Springer, 3., Edtion

T 6.41 Course: Deployment of Database Systems [T-INFO-101317]

Responsible: Prof. Dr.-Ing. Klemens Böhm
Organisation: KIT Department of Informatics
Part of: M-INFO-101193 - Grundlagen von Informationssystemen
M-INFO-101193 - Grundlagen von Informationssystemen
M-INFO-101229 - Datenbanksysteme in Theorie und Praxis
M-INFO-101235 - Grundlagen des Daten- und Informationsmanagements
M-INFO-102060 - Weitere Leistungen

Type	Credits	Recurrence	Version
Prüfungsleistung mündlich	5	Each winter term	1

Events					
WS 18/19	2400020	Datenbankeinsatz	3 SWS	Lecture (V)	Schäler
Exams					
WS 18/19	7500007	Deployment of Database Systems		Prüfung (PR)	Böhm

T 6.42 Course: Derivatives [T-WIWI-102643]

Responsible:	Prof. Dr. Marliese Uhrig-Homburg
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101402 - eFinance
	M-WIWI-101423 - Topics in Finance II
	M-WIWI-101465 - Topics in Finance I

Type	**Credits**	**Recurrence**	**Version**
Prüfungsleistung schriftlich	4,5	Each summer term	1

Events					
SS 2019	2530550	**Derivatives**	2 SWS	Lecture (V)	Uhrig-Homburg
SS 2019	2530551	**Übungen zu Derivate**	1 SWS	Practice (Ü)	Uhrig-Homburg, Eska
Exams					
WS 18/19	7900051	**Derivatives**		Prüfung (PR)	Uhrig-Homburg

Competence Certificate
See German version.

Prerequisites
None

Recommendation
None

Below you will find excerpts from events related to this course:

V Derivatives
2530550, SS 2019, 2 SWS, Open in study portal   Lecture (V)

Description
The lecture deals with the application areas and valuation of financial derivatives. After an overview of the most important derivatives and their relevance, forwards and futures are analysed. Then, an introduction to the Option Pricing Theory follows. The main emphasis is on option valuation in discrete and continuous time models. Finally, construction and usage of derivatives are discussed, e.g. in the context of risk management.

Learning Content
The lecture deals with the application areas and valuation of financial derivatives. After an overview of the most important derivatives and their relevance, forwards and futures are analysed. Then, an introduction to the Option Pricing Theory follows. The main emphasis is on option valuation in discrete and continuous time models. Finally, construction and usage of derivatives are discussed, e.g. in the context of risk management.

Workload
The total workload for this course is approximately 135.0 hours. For further information see German version.

Literature

- Hull (2012): Options, Futures, & Other Derivatives, Prentice Hall, 8th Edition

Elective literature:

Cox/Rubinstein (1985): Option Markets, Prentice Hall

T   6.43 Course: Design, Construction and Sustainability Assessment of Buildings I [T-WIWI-102742]

Responsible:	Prof. Dr.-Ing. Thomas Lützkendorf
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101467 - Bauökologie

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	4,5	Each winter term	1

Events					
WS 18/19	2586404	Design and Construction of Buildings	2 SWS	Lecture (V)	Ströbele, Lützkendorf
WS 18/19	2586405	Übung zu Bauökologie I	1 SWS	Practice (Ü)	Ströbele
Exams					
WS 18/19	7900247	Design, Construction and Sustainability Assessment of Buildings I		Prüfung (PR)	Lützkendorf
WS 18/19	7900248	Design, Construction and Sustainability Assessment of Buildings I		Prüfung (PR)	Lützkendorf

Competence Certificate
The assessment consists of a written exam (60 minutes) (following §4(2), 1 of the examination regulation). The exam takes place two times only in the semester in which the lecture is takes place (winter semester). Re-examinations are offered at every ordinary examination date.

Prerequisites
None

Recommendation
A combination with the module *Real Estate Management* and with engineering science modules in the area of building physics and structural design is recommended.

Below you will find excerpts from events related to this course:

V	**Design and Construction of Buildings** 2586404, WS 18/19, 2 SWS, Open in study portal	**Lecture (V)**

Description
Taking low-energy buildings as an example the course is an introduction to cheap, energy-efficient, resource-saving and health-supporting design, construction and operation of buildings. Questions of the implementation of the principles of a sustainable development within the building sector are discussed on the levels of the whole building, its components, building equipment as well as the materials. Besides technical interrelationships basics dimensioning and various approaches to ecological and economical assessment play a role during the lectures, as well as the different roles of people involved into the building process. Topics are the integration of economical and ecological aspects into the design process, strategies of energy supply, low-energy and passive buildings, active and passive use of solar energy, selection and assessment of construction details, selection and assessment of insulation materials, greened roofs plus health and comfort.

Learning Content

Taking low-energy buildings as an example the course is an introduction to cheap, energy-efficient, resource-saving and health-supporting design, construction and operation of buildings. Questions of the implementation of the principles of a sustainable development within the building sector are discussed on the levels of the whole building, its components, building equipment as well as the materials. Besides technical interrelationships basics dimensioning and various approaches to ecological and economical assessment play a role during the lectures, as well as the different roles of people involved into the building process. Topics are the integration of economical and ecological aspects into the design process, strategies of energy supply, low-energy and passive buildings, active and passive use of solar energy, selection and assessment of construction details, selection and assessment of insulation materials, greened roofs plus health and comfort.

Workload

The total workload for this course is approximately 135.0 hours. For further information see German version.

Literature
Elective literature:

See german version.

T 6.44 Course: Design, Construction and Sustainability Assessment of Buildings II [T-WIWI-102743]

Responsible:	Prof. Dr.-Ing. Thomas Lützkendorf
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101467 - Bauökologie

Type Prüfungsleistung schriftlich	**Credits** 4,5	**Recurrence** Each summer term	**Version** 1

Events					
SS 2019	2585403	Übung zu Bauökologie II	1 SWS	Practice (Ü)	Ströbele
SS 2019	2585404	Sustainability Assessment of Buildings	2 SWS	Lecture (V)	Lützkendorf, Ströbele

Competence Certificate
The assessment consists of a written exam (60 minutes) (following §4(2), 1 of the examination regulation). The exam takes place two times only in the semester in which the lecture is takes place (summer semester). Re-examinations are offered at every ordinary examination date.

Prerequisites
None

Recommendation
A combination with the module *Real Estate Management* and with engineering science modules from the areas building physics and structural designis recommended.

Below you will find excerpts from events related to this course:

V Sustainability Assessment of Buildings
2585404, SS 2019, 2 SWS, Open in study portal   Lecture (V)

Description
The course identifies problems concerning the economical and environmental assessment of buildings along their lifecycle and discusses suitable procedures and tools supporting the decision making process. For example, the course addresses topics like operating costs, heat cost allocation, comparisons of heating costs, applied economical assessment methods, life cycle assessment as well as related design and assessment tools (e.g. element catalogues, databases, emblems, tools) and assessment procedures (e.g. carbon footprint, MIPS, KEA), which are currently available.

Learning Content
The course identifies problems concerning the economical and environmental assessment of buildings along their lifecycle and discusses suitable procedures and tools supporting the decision making process. For example, the course addresses topics like operating costs, heat cost allocation, comparisons of heating costs, applied economical assessment methods, life cycle assessment as well as related design and assessment tools (e.g. element catalogues, databases, emblems, tools) and assessment procedures (e.g. carbon footprint, MIPS, KEA), which are currently available.

Workload
The total workload for this course is approximately 135.0 hours. For further information see German version.

Literature
Elective literature:

See german version.

T 6.45 Course: Digital Circuits Design [T-INFO-103469]

Responsible: Prof. Dr. Wolfgang Karl
Organisation: KIT Department of Informatics
Part of: M-INFO-102060 - Weitere Leistungen
                   M-INFO-102978 - Digitaltechnik und Entwurfsverfahren

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	6	Each summer term	1

Events					
SS 2019	24007	Digitaltechnik und Entwurfsverfahren	3 SWS	Lecture (V)	Hanebeck, Bromberger
Exams					
WS 18/19	7500254	Digital Circuits Design		Prüfung (PR)	Henkel, Karl, Tahoori

T 6.46 Course: Digital Services [T-WIWI-109938]

Organisation: KIT Department of Economics and Management

Part of: M-WIWI-101422 - Vertiefung im Customer Relationship Management
M-WIWI-101434 - eBusiness und Service Management
M-WIWI-102752 - Fundamentals of Digital Service Systems

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	4,5	Each summer term	3

Competence Certificate
The assessment consists of a written exam (60 min) (§4(2), 1 of the examination regulations). By successful completion of the exercises (§4(2), 3 SPO 2007 respectively §4(3) SPO 2015) a bonus can be obtained. If the grade of the written exam is at least 4.0 and at most 1.3, the bonus will improve it by one grade level (i.e. by 0.3 or 0.4).

Prerequisites
see below

Modeled Conditions
The following conditions have to be fulfilled:

1. The course T-WIWI-105771 - Foundations of Digital Services A must not have been started.

T 6.47 Course: Economics and Behavior [T-WIWI-102892]

Responsible: Prof. Dr. Nora Szech
Organisation: KIT Department of Economics and Management
Part of: M-INFO-102060 - Weitere Leistungen
                    M-WIWI-101499 - Angewandte Mikroökonomik
                    M-WIWI-101501 - Wirtschaftstheorie

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	4,5	Each winter term	1

Events					
WS 18/19	2560137	Economics and Behavior	2 SWS	Lecture (V)	Szech
WS 18/19	2560138	Übung zu Economics and Behavior	1 SWS	Practice (Ü)	Szech
Exams					
WS 18/19	7900134	Exam Economics and Behavior		Prüfung (PR)	Szech
WS 18/19	7900135	Exam Economics and Behavior (2)		Prüfung (PR)	Szech

Competence Certificate
The assessment consists of a written exam (60 minutes) (following §4(2), 1 of the examination regulation).
The exam takes place in every semester. Re-examinations are offered at every ordinary examination date.

The grade will be determined in a final written exam. Students can earn a bonus to the final grade by successfully participating in the exercises.

Prerequisites
None

Recommendation
Basic knowledge of microeconomics and statistics are recommended. A background in game theory is helpful, but not absolutely necessary.

Annotation
The lecture will be held in English.

Below you will find excerpts from events related to this course:

V Economics and Behavior
2560137, WS 18/19, 2 SWS, Open in study portal
                                                                        Lecture (V)

Learning Content
The course covers topics from behavioral economics with regard to contents and methods. In addition, the students gain insight into the design of economic experiments. Furthermore, the students will become acquainted with reading and critically evaluating current research papers in the field of behavioral economics.

Annotation
The lecture will be held in English.

Workload
The total workload for this course is approximately 135.0 hours. For further information see German version.

Literature
Kahnemann, Daniel: Thinking, Fast and Slow. Farrar, Straus and Giroux, 2011.

Ariely, Dan: Predictably irrational. New York: Harper Collins, 2008.

Ariely, Dan: The Upside of Irrationality. New York: HarperCollins, 2011.

T 6.48 Course: Economics I: Microeconomics [T-WIWI-102708]

Responsible:	Prof. Dr. Clemens Puppe
	Prof. Dr. Johannes Philipp Reiß
Organisation:	KIT Department of Economics and Management
Part of:	M-WIWI-101431 - Volkswirtschaftslehre
	M-WIWI-101528 - Orientierungsprüfung

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	5	Each winter term	1

Events					
WS 18/19	2610012	Economics I: Microeconomics	3 SWS	Lecture (V)	Reiß
Exams					
WS 18/19	791vwl1	Economics I: Microeconomics		Prüfung (PR)	Reiß
WS 18/19	792vwl1	Economics I: Microeconomics		Prüfung (PR)	Reiß

Competence Certificate
The assessment consists of a written exam (120 min) following §4, Abs. 2, 1 of the examination regulation.
There may be offered a practice exam in the middle of the semester. The results of this exam may be used to improve the grade of the main exam. A detailed descritpion of the examination modalities will be given by the respective lecturer.

The main exam takes place subsequent to the lectur. The re-examination is offered at the same examination period. As a rule, only repeating candidates are entitled for taking place the re-examination. For a detailed description on the exam regulations see the information of the respective chair.

Prerequisites
None

Below you will find excerpts from events related to this course:

V Economics I: Microeconomics
2610012, WS 18/19, 3 SWS, Open in study portal
                                                                                          Lecture (V)

Description
The students learn the basic concepts in Microeconomics and some basics in game theory. The student will understand the working of markets in modern economies and the role of decision making. Furthermore, she should be able to understand simple game theoretic argumentation in different fields of Economics.
In the two main parts of the course problems of microeconomic decision making (household behavior, firm behavior) and problems of commodity allocation on markets (market equilibria and efficiency of markets) as well are discussed. In the final part of the course basics of imperfect competition (oligopolistic markets) and of game theory are presented.

Learning Content
The students learn the basic concepts in Microeconomics and some basics in game theory. The student will understand the working of markets in modern economies and the role of decision making. Furthermore, she should be able to understand simple game theoretic argumentation in different fields of Economics.

In the two main parts of the course, problems of microeconomic decision making (household behavior, firm behavior) and problems of commodity allocation on markets (market equilibria and efficiency of markets) are discussed. In the final part of the course, basics of imperfect competition (oligopolistic markets) and of game theory as well as welfare economics are presented.

Workload
The total workload for this course is approximately 150 hours.

Literature

- H. Varian, Grundzüge der Mikroökonomik, 5. edition (2001), Oldenburg Verlag
- Pindyck, Robert S./Rubinfeld, Daniel L., Mikroökonomie, 6. Aufl., Pearson. Münschen, 2005
- Frank, Robert H., Microeconomics and Behavior, 5. Aufl., McGraw-Hill, New York, 2005

T 6.49 Course: Economics III: Introduction in Econometrics [T-WIWI-102736]

Responsible:	Prof. Dr. Melanie Schienle
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101499 - Angewandte Mikroökonomik
	M-WIWI-101599 - Statistik und Ökonometrie

Type Prüfungsleistung schriftlich	**Credits** 5	**Recurrence** Each summer term	**Version** 1

Events					
SS 2019	2520016	Economics III: Introduction in Econometrics	2 SWS	Lecture (V)	Schienle
SS 2019	2520017	Übungen zu VWL III	2 SWS	Practice (Ü)	Schienle, Buse

Competence Certificate

The assessment consists of an 1h written exam according to Section 4(2), 1 of the examination regulation.

Prerequisites

None

Below you will find excerpts from events related to this course:

V Economics III: Introduction in Econometrics
2520016, SS 2019, 2 SWS, Open in study portal
Lecture (V)

Learning Content

Simple and multiple linear regression (estimating parameters, confidence interval, testing, prognosis, testing assumptions)

Multi equation models

Dynamic models

Workload

180 hours (6.0 Credits)

Literature

- Von Auer: Ökonometrie ISBN 3-540-00593-5
- Goldberger: A course in Econometrics ISBN 0-674-17544-1
- Gujarati. Basic Econometrics ISBN 0-07-113964-8
- Schneeweiß: Ökonometrie ISBN 3-7908-0008-2

Elective literature:

Additional literature will be suggested in course

T 6.50 Course: eFinance: Information Systems for Securities Trading [T-WIWI-109941]

Responsible:	Prof. Dr. Christof Weinhardt
Organisation:	KIT Department of Economics and Management
Part of:	M-WIWI-101402 - eFinance
	M-WIWI-101423 - Topics in Finance II
	M-WIWI-101434 - eBusiness und Service Management
	M-WIWI-101465 - Topics in Finance I

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	4,5	Each winter term	1

Events					
WS 18/19	2540454	eFinance: Information Systems for Securities Trading	2 SWS	Lecture (V)	Weinhardt, Notheisen, Glaser
WS 18/19	2540455	Übungen zu eFinance: Wirtschaftsinformatik für den Wertpapierhandel	1 SWS	Practice (Ü)	Notheisen, Glaser

Competence Certificate

The assessment consists of a written exam (60 min) (§4(2), 1 of the examination regulations) and by submitting written essays as part of the exercise (§4(2), 3 SPO 2007 respectively §4(3) SPO 2015). 70% of the final grade is based on the written exam and 30% is based on assignments from the exercises. The points obtained in the exercises only apply to the first and second exam of the semester in which they were obtained.

Prerequisites

see below

Modeled Conditions

The following conditions have to be fulfilled:

1. The course T-WIWI-102600 - eFinance: Information Engineering and Management for Securities Trading must not have been started.

Recommendation

None

Below you will find excerpts from events related to this course:

V eFinance: Information Systems for Securities Trading
2540454, WS 18/19, 2 SWS, Open in study portal   Lecture (V)

Description

The theoretical part of the course examines the New Institutions Economics which provides a theoretically found explanation for the existence of markets and intermediaries. Building upon the foundations of the market micro structure, several key parameters and factors of electronic trading are examined. These insights gained along a structured securities trading process are complemented and verified by the analysis of prototypical trading systems developed at the institute as well as selected trading systems used by leading exchanges in the world. In the more practical-oriented second part of the lecture, speakers from practice will give talks about financial trading systems and link the theoretical findings to real-world systems and applications.

Learning Content

The theoretical part of the course examines the New Institutions Economics which provides a theoretically found explanation for the existence of markets and intermediaries. Building upon the foundations of the market micro structure, several key parameters and factors of electronic trading are examined. These insights gained along a structured securities trading process are complemented and verified by the analysis of prototypical trading systems developed at the institute as well as selected trading systems used by leading exchanges in the world. In the more practical-oriented second part of the lecture, speakers from practice will give talks about financial trading systems and link the theoretical findings to real-world systems and applications.

Workload

The total workload for this course is approximately 135.0 hours. For further information see German version.

Literature

- Picot, Arnold, Christine Bortenländer, Heiner Röhrl (1996): "Börsen im Wandel". Knapp, Frankfurt
- Harris, Larry (2003): "Trading and Exchanges - Market Microstructure for Practitioners"". Oxford University Press, New York

Elective literature:

- Gomber, Peter (2000): "Elektronische Handelssysteme - Innovative Konzepte und Technologien". Physika Verlag, Heidelberg
- Schwartz, Robert A., Reto Francioni (2004): "Equity Markets in Action - The Fundamentals of Liquidity, Market Structure and Trading". Wiley, Hoboken, NJ

T   6.51 Course: Energy Policy [T-WIWI-102607]

Responsible:	Prof. Dr. Martin Wietschel
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101464 - Energiewirtschaft

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	3,5	Each summer term	3

Events					
SS 2019	2581959	**Energy Policy**	2 SWS	Lecture (V)	Wietschel
Exams					
WS 18/19	7981959	**Energy Policy**		Prüfung (PR)	Fichtner

Competence Certificate

In all **Master's** degreeprograms the following applies: The exam is offered to first-time applicants for the last time in the winter semester 2017/18. The exam will continue to be offered in the **bachelor's** degree programs.

The assessment consists of a written exam (60 minutes) according to Section 4(2), 1 of the examination regulation.

Prerequisites

None.

Below you will find excerpts from events related to this course:

V   Energy Policy
2581959, SS 2019, 2 SWS, Open in study portal   Lecture (V)

Description

The course deals with material and energy policy of policy makers and includes the effects of such policies on the economy as well as the involvement of industrial and other stakeholders in the policy design. At the beginning the neoclassical environment policy is discussed. Afterwards the Sustainable Development concept is presented and strategies how to translate the concept in policy decision follows. In the next part of the course an overview about the different environmental instruments classes, evaluation criteria for these instruments and examples of environmental instruments like taxes or certificates will be discussed. The final part deals with implementation strategies of material and energy policy.

Learning Content

The course deals with material and energy policy of policy makers and includes the effects of such policies on the economy as well as the involvement of industrial and other stakeholders in the policy design. At the beginning the neoclassical environment policy is discussed. Afterwards the Sustainable Development concept is presented and strategies how to translate the concept in policy decision follows. In the next part of the course an overview about the different environmental instruments classes, evaluation criteria for these instruments and examples of environmental instruments like taxes or certificates will be discussed. The final part deals with implementation strategies of material and energy policy.

Workload

The total workload for this course is approximately 105.0 hours. For further information see German version.

Literature

Will be anounced in the lecture.

T 6.52 Course: Enterprise Architecture Management [T-WIWI-102668]

Responsible:	Thomas Wolf
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101476 - Geschäftsprozesse und Informationssysteme

Type Prüfungsleistung schriftlich	**Credits** 5	**Recurrence** Each winter term	**Version** 1

Events					
WS 18/19	2511600	Enterprise Architecture Management	2 SWS	Lecture (V)	Wolf
WS 18/19	2511601	Übungen zu Enterprise Architecture Management	1 SWS	Practice (Ü)	Wolf
Exams					
WS 18/19	7900010	Enterprise Architecture Management		Prüfung (PR)	Oberweis
SS 2019	7900043	Enterprise Architecture Management		Prüfung (PR)	Wolf

Competence Certificate
The assessment of this course is a written (60 min.) or (if necessary) oral examination (30 min.) according to §4(2) of the examination regulation.

Prerequisites
None

Below you will find excerpts from events related to this course:

V Enterprise Architecture Management
2511600, WS 18/19, 2 SWS, Open in study portal

Lecture (V)

Learning Content
The following topics will be covered: components of enterprise architecture, enterprise strategy including methods to develop strategies, business process (re)engineering, methods to implement changes within enterprises (management of change)

Literature

- Nolan, R., Croson, D.: Creative Destruction: A Six-Stage Process for Transforming the Organization. Harvard Business School Press, Boston Mass. 1995
- Doppler, K., Lauterburg, Ch.: Change Management. Campus Verlag 1997
- Jacobson, I.: The Object Advantage, Business Process Reengineering with Object Technology. Addison-Wesley Publishing Company, Wokingham England 1994
- Keller, G., Teufel, Th.: SAP R/3 prozessorientiert anwenden. Addison Wesley 1998
- Österle, H.: Business Engineering Bd. 1 und 2. Springer Verlag, Berlin 1995

T 6.53 Course: Exchanges [T-WIWI-102625]

Responsible:	Dr. Jörg Franke
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101402 - eFinance
	M-WIWI-101465 - Topics in Finance I

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	1,5	Each summer term	1

Exams				
WS 18/19	7900062	Exchanges	Prüfung (PR)	Franke, Ruckes

Competence Certificate

The examination will be offered latest until winter term 2018/2019 (repeaters only).

Prerequisites

None

Recommendation

None

T 6.54 Course: Exercises in Civil Law [T-INFO-102013]

Responsible:	Prof. Dr. Thomas Dreier
	Dr. Yvonne Matz
Organisation:	KIT Department of Informatics
Part of:	M-INFO-101191 - Wirtschaftsprivatrecht

Type Prüfungsleistung anderer Art	**Credits** 9	**Recurrence** Each term	**Version** 1

Events					
WS 18/19	24011	**Commercial and Corporate Law**	2 SWS	Lecture (V)	Wiele
SS 2019	24504	**Advanced Civil Law**	2 SWS	Lecture (V)	Matz
SS 2019	24506	**Exercises in Civil Law**	2 SWS	Lecture (V)	Dreier
SS 2019	24926	**Case Studies in Civil Law**	2 SWS	Practice (Ü)	Kleiner, Käde
Exams					
WS 18/19	7500108	**Commercial Law**		Prüfung (PR)	Dreier, Matz

Modeled Conditions

The following conditions have to be fulfilled:

1. The module **M-INFO-101190 - Introduction to Civil Law** must have been passed.

T 6.55 Course: Facility Location and Strategic Supply Chain Management [T-WIWI-102704]

Responsible: Prof. Dr. Stefan Nickel
Organisation: KIT Department of Economics and Management
Part of: M-INFO-102060 - Weitere Leistungen
                    M-WIWI-101413 - Anwendungen des Operations Research
                    M-WIWI-101421 - Supply Chain Management
                    M-WIWI-101936 - Methodische Grundlagen des OR

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	4,5	Each winter term	4

Events					
WS 18/19	2550486	Facility Location and Strategic Supply Chain Management	2 SWS	Lecture (V)	Nickel
WS 18/19	2550487	Übungen zu Standortplanung und strategisches SCM	1 SWS	Practice (Ü)	Bakker
Exams					
WS 18/19	7900221	Facility Location and Strategic Supply Chain Management		Prüfung (PR)	Nickel

Competence Certificate

Due to a research semester of Professor Nickel in WS 19/20, the course "Facility Location and Strategic Supply Chain Management" does NOT take place in WS 19/20. In particular, neither WS 19/20 nor SS 20 will offer an exam for the lecture. The follow-up exam to the lecture in WS 18/19 takes place in SS 19 and is exclusively for students in the second examination.

The assessment consists of a written exam (60 min) according to Section 4 (2), 1 of the examination regulation.

The exam takes place in every semester.

Prerequisite for admission to examination is the succesful completion of the online assessments.

Prerequisites

Prerequisite for admission to examination is the succesful completion of the online assessments.

Recommendation

None

Annotation

The lecture is held in every winter term. The planned lectures and courses for the next three years are announced online.

Below you will find excerpts from events related to this course:

V Facility Location and Strategic Supply Chain Management
2550486, WS 18/19, 2 SWS, Open in study portal   Lecture (V)

Learning Content

Since the classical work "Theory of the Location of Industries" of Weber from 1909, the determination of an optimal location of a new facility with respect to existing customers is strongly connected to strategical logistics planning. Strategic decisions concerning the location of facilities as production plants, distribution centers or warehouses are of high importance for the rentability of supply chains. Thoroughly carried out, location planning allows an efficient flow of materials and leads to lower costs and increased customer service.

Subject of the course is an introduction to the most important terms and definitions in location planning as well as the presentation of basic quantitative location planning models. Furthermore, specialized location planning models for Supply Chain Management will be addressed as they are part in many commercial SCM tools for strategic planning tasks.

Annotation

The lecture is held in every winter term. The planned lectures and courses for the next three years are announced online.

Workload
The total workload for this course is approximately 135.0 hours. For further information see German version.

Literature
Elective literature:

- Daskin: Network and Discrete Location: Models, Algorithms, and Applications, Wiley, 1995
- Domschke, Drexl: Logistik: Standorte, 4. Auflage, Oldenbourg, 1996
- Francis, McGinnis, White: Facility Layout and Location: An Analytical Approach, 2nd Edition, Prentice Hall, 1992
- Love, Morris, Wesolowsky: Facilities Location: Models and Methods, North Holland, 1988
- Thonemann: Operations Management - Konzepte, Methoden und Anwendungen, Pearson Studium, 2005

T   6.56 Course: Financial Accounting and Cost Accounting [T-WIWI-102816]

Responsible:	Dr. Jan-Oliver Strych
Organisation:	KIT Department of Informatics
	KIT Department of Economics and Management
Part of:	M-WIWI-101492 - Betriebswirtschaftslehre

Type Prüfungsleistung schriftlich	**Credits** 4	**Recurrence** Each winter term	**Version** 1

Events					
WS 18/19	2600002	Rechnungswesen I	2 SWS	Lecture (V)	Strych
WS 18/19	2600003	Übung zu Rechnungswesen	2 SWS	Practice (Ü)	Strych
Exams					
WS 18/19	7900244	Financial Accounting and Cost Accounting		Prüfung (PR)	Ruckes

Competence Certificate
The assessment consists of a written exam following §4, Abs. 2, 1 of the examination regulation.
The examination takes place in every semester. Re-examinations are offered at every ordinary examination date.

Prerequisites
None

Below you will find excerpts from events related to this course:

V   Rechnungswesen I   Lecture (V)
2600002, WS 18/19, 2 SWS, Open in study portal

Learning Content
1. Introduction to accounting standards (IFRS, HGB)

2. Annual report and financial statements

3. Selected topics in financial accounting

4. Operational efficiency analysis

5. Financial Statement Analysis

6. Value-based management

7. Taxes

8. Creative accounting and compliance

9. Budgeting and benchmarking

10. Reporting

Annotation
It is recommended to have some skills about financial accounting on an introductory level.

Workload
The total workload for this course is approximately 120 hours. For further information see German version.

T 6.57 Course: Financial Accounting for Global Firms [T-WIWI-107505]

Responsible:	Dr. Torsten Luedecke
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101423 - Topics in Finance II
	M-WIWI-101465 - Topics in Finance I

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	4,5	Each winter term	1

Events					
WS 18/19	2530242	Financial Accounting for Global Firms	2 SWS	Lecture (V)	Luedecke
WS 18/19	2530243	Übung zu Financial Accounting for Global Firms	SWS	Practice (Ü)	Luedecke
Exams					
WS 18/19	7900142	Financial Accounting for Global Firms		Prüfung (PR)	Luedecke
SS 2019	7900195	Financial Accounting for Global Firms		Prüfung (PR)	Luedecke

Competence Certificate
The assessment consists of a written exam (60 min.) according to § 4 paragraph 2 Nr. 1 of the examination regulation.

Prerequisites
None

Recommendation
Basic knowledge in corporate finance and accounting.

Annotation
New lecture in the winter term 2017/18.

Below you will find excerpts from events related to this course:

V Financial Accounting for Global Firms
2530242, WS 18/19, 2 SWS, Open in study portal   **Lecture (V)**

Description
Increasing globalization coupled with related regulations continues to put pressure on moving towards a common global accounting framework - International Financial Reporting Standards (IFRS). Currently, more than 100 countries use IFRS, so if a firm's business include global transactions, it is critical to know about the impact of IFRS on the financial reporting process and business. In the EU, IFRS are compulsory for listed companies's consolidated statements but have also gained factual significance for companies without statutory duty to use IFRS. The course introduces the conceptual framework of IFRS, discuss the primary financial statements according to IFRS and explains the underlying principles, concepts, and methods to prepare the financial statements. Special focus is given to some more complex accounting issues related to revenue recognition from contracts with customers, consolidation of different types of intercorporate investments, and foreign currency translation.

Learning Content

The lecture covers the following topics:

- The context of financial accounting for global firms
- The mechanics of financial accounting
- Accounting frameworks and concepts
- Content and presentation of financial statements
- Preparing financial statements
- Revenue recognition from contracts
- Tangible and intangible non-current assets
- Financial assets, liabilities, and equity
- Consolidation and the assessment of control
- Investment in associates and joint arrangements
- Business combinations
- Foreign currency translation

Literature

Alexander, D. and C. Nobes (2017): Financial Accounting – An International Introduction, 6th ed., Pearson.

T 6.58 Course: Financial Econometrics [T-WIWI-103064]

Responsible:	Prof. Dr. Melanie Schienle
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101599 - Statistik und Ökonometrie

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	4,5	Irregular	1

Competence Certificate

The assessment consists of a written exam (90 minutes) (following §4(2), 1 of the examination regulation).

Prerequisites

None

Recommendation

Knowledge of the contents covered by the course "Economics III: Introduction in Econometrics"[2520016]

Annotation

The course takes place each second summer term: 2018/2020....

T 6.59 Course: Financial Intermediation [T-WIWI-102623]

Responsible: Prof. Dr. Martin Ruckes
Organisation: KIT Department of Economics and Management
Part of: M-INFO-102060 - Weitere Leistungen
                   M-WIWI-101423 - Topics in Finance II
                   M-WIWI-101465 - Topics in Finance I

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	4,5	Each winter term	1

Events					
WS 18/19	2530232	Financial Intermediation	2 SWS	Lecture (V)	Ruckes
WS 18/19	2530233	Übung zu Finanzintermediation	1 SWS	Practice (Ü)	Ruckes, Hoang, Benz
Exams					
WS 18/19	7900063	Financial Intermediation		Prüfung (PR)	Ruckes
SS 2019	7900078	Financial Intermediation		Prüfung (PR)	Ruckes

Competence Certificate
The assessment of this course is a written examination (following §4(2), 1 SPO) of 60 mins.
The exam is offered each semester.

Prerequisites
None

Recommendation
None

Below you will find excerpts from events related to this course:

V Financial Intermediation
2530232, WS 18/19, 2 SWS, Open in study portal

Lecture (V)

Description

- Arguments for the existence of financial intermediaries
- Bank loan analysis, relationship lending
- Competition in the banking sector
- Stability of the financial system
- The macroeconomic role of financial intermediation

Learning Content

- Arguments for the existence of financial intermediaries
- Bank loan analysis, relationship lending
- Stability of the financial system
- The macroeconomic role of financial intermediation
- Principles of the prudential regulation of banks

Workload
The total workload for this course is approximately 135.0 hours. For further information see German version.

Literature
Elective literature:

- Hartmann-Wendels/Pfingsten/Weber (2014): Bankbetriebslehre, 6th edition, Springer Verlag.
- Freixas/Rochet (2008): Microeconomics of Banking, 2nd edition, MIT Press.

T 6.60 Course: Financial Management [T-WIWI-102605]

Responsible:	Prof. Dr. Martin Ruckes
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101435 - Essentials of Finance

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	4,5	Each summer term	1

Events					
SS 2019	2530216	Financial Management	2 SWS	Lecture (V)	Ruckes
SS 2019	2530217	Übung zu Financial Management	1 SWS	Practice (Ü)	Ruckes, Schubert
Exams					
WS 18/19	7900060	Financial Management		Prüfung (PR)	Ruckes
SS 2019	7900074	Financial Management		Prüfung (PR)	Ruckes

Competence Certificate
The assessment consists of a written exam (60 min.) according to Section 4 (2), 1 of the examination regulation.
The exam takes place at every semester. Re-examinations are offered at every ordinary examination date.

Prerequisites
None

Recommendation
Knowledge of the content of the course Business Administration: Finance and Accounting [25026/25027] is recommended.

Below you will find excerpts from events related to this course:

V Financial Management
2530216, SS 2019, 2 SWS, Open in study portal

Lecture (V)

Description
Analytical methods and theories in the field 'Capital investments and financing' with the main focus on:

- Capital Structure
- Dividend policy
- Essentials of valuation
- Investment decisions
- Short term/ long term finance
- Working Capital Management

Learning Content
Analytical methods and theories in the field of corporate finance with the main focus on:

- Liquidity and Working Capital Management
- Sources of short term/ long term finance
- Capital Structure
- Dividend policy

Workload
The total workload for this course is approximately 135.0 hours. For further information see German version.

Literature
Elective literature:

- Ross, Westerfield, Jaffe, Jordan (2009): Modern Financial Management, McGraw-Hill International Edition
- Berk, De Marzo (2016): Corporate Finance, 4th edition, Pearson Addison Wesley

T 6.61 Course: Foundations of Interactive Systems [T-WIWI-109816]

Responsible:	Prof. Dr. Alexander Mädche
Organisation:	KIT Department of Economics and Management
Part of:	M-WIWI-101434 - eBusiness und Service Management
	M-WIWI-102752 - Fundamentals of Digital Service Systems

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	4,5	Each summer term	1

Events					
SS 2019	2540560	Foundations of Interactive Systems	3 SWS	Lecture (V)	Mädche

Competence Certificate
The assessment consists of a written exam (60 min.) according to § 4 paragraph 2 Nr. 1 of the examination regulation.

Prerequisites
None

Recommendation
None

Annotation
New course starting summer term 2019.

Below you will find excerpts from events related to this course:

V Foundations of Interactive Systems
2540560, SS 2019, 3 SWS, Open in study portal   **Lecture (V)**

Description
Advanced information and communication technologies make interactive systems ever-present in the users' private and business life. They are an integral part of smartphones, devices in the smart home, mobility vehicles as well as at the working place.

With the continuous growing capabilities of computers, the design of the interaction between human and computer becomes even more important. This lecture introduces foundations on design processes and principles for interactive systems.

The lecture focuses on foundational concepts, theories, practices and methods for the design of interactive systems. The students get the foundational knowledge to guide the design of interactive systems in business and private life.

| **T** | **6.62 Course: Foundations of Mobile Business [T-WIWI-104679]** |

Responsible: Prof. Dr. Andreas Oberweis
Dr.-Ing. Gunther Schiefer

Organisation: KIT Department of Economics and Management

Part of: M-INFO-102060 - Weitere Leistungen
M-WIWI-101476 - Geschäftsprozesse und Informationssysteme

Type Prüfungsleistung schriftlich	**Credits** 5	**Recurrence** Each summer term	**Version** 2

Events					
SS 2019	2511226	Grundlagen für mobile Business	2 SWS	Lecture (V)	Schiefer
SS 2019	2511227	Übungen zu Grundlagen für mobile Business	1 SWS	Practice (Ü)	Schiefer
Exams					
WS 18/19	7900118	Foundations of mobile Business		Prüfung (PR)	Oberweis
SS 2019	7900001	Foundations of mobile Business		Prüfung (PR)	Oberweis

Competence Certificate

The assessment of this course is a written (60 min.) or (if necessary) oral examination according to §4(2) of the examination regulation.

Prerequisites

None

Annotation

Lecture and exercises are integrated.

T 6.63 Course: Fundamentals of Production Management [T-WIWI-102606]

Responsible:	Prof. Dr. Frank Schultmann
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101437 - Industrielle Produktion I

Type Prüfungsleistung schriftlich	**Credits** 5,5	**Recurrence** Each summer term	**Version** 1

Events					
SS 2019	2581950	**Fundamentals of Production Management**	2 SWS	Lecture (V)	Schultmann
SS 2019	2581951	**Übungen Grundlagen der Produktionswirtschaft**	2 SWS	Practice (Ü)	Müller, Naber
Exams					
WS 18/19	7981950	**Fundamentals of Production Management**		Prüfung (PR)	Schultmann

Competence Certificate
The assessment consists of a written exam (90 minutes) (following §4(2), 1 of the examination regulation). The exam takes place in every semester. Re-examinations are offered at every ordinary examination date.

Prerequisites
None

Below you will find excerpts from events related to this course:

V Fundamentals of Production Management
2581950, SS 2019, 2 SWS, Open in study portal   **Lecture (V)**

Description
This lecture focuses on strategic production management with respect to various economic aspects. Interdisciplinary approaches of systems theory will be used to describe the challenges of industrial production. This course will emphasize the importance of R&D as the central step in strategic corporate planning to ensure future long-term success.
In the field of site selection and planning for firms and factories, attention will be drawn upon individual aspects of existing and greenfield sites as well as existing distribution and supply centres. Students will obtain knowledge in solving internal and external transport and storage problems with respect to supply chain management and disposal logistics.

Medien und Pflichtliteratur: können aus der alten Fassung übernommen werden.

Learning Content
This lecture focuses on strategic production management with respect to various economic aspects. Interdisciplinary approaches of systems theory will be used to describe the challenges of industrial production. This course will emphasize the importance of R&D as the central step in strategic corporate planning to ensure future long-term success.

In the field of site selection and planning for firms and factories, attention will be drawn upon individual aspects of existing and greenfield sites as well as existing distribution and supply centres. Students will obtain knowledge in solving internal and external transport and storage problems with respect to supply chain management and disposal logistics.

Workload
Total effort required will account for approximately 165h (5.5 credits).

Literature
will be announced in the course

T	6.64 Course: Global Optimization I [T-WIWI-102726]

Responsible: Prof. Dr. Oliver Stein

Organisation: KIT Department of Economics and Management

Part of: M-INFO-102060 - Weitere Leistungen
M-WIWI-101413 - Anwendungen des Operations Research
M-WIWI-101936 - Methodische Grundlagen des OR

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	4,5	Each summer term	1

Events					
SS 2019	2550134	Globale Optimierung I	2 SWS	Lecture (V)	Stein
SS 2019	2550135	Übungen zu Globale Optimierung I+II	1 SWS	Practice (Ü)	Stein
Exams					
WS 18/19	7900007_NK_WS1819	Global Optimization I		Prüfung (PR)	Stein

Competence Certificate

Success is in the form of a written examination (60 min.) (according to § 4(2), 1 SPO) and possibly of a compulsory prerequisite.

The exam is offered in the lecture of semester and the following semester.

The success check can be done also with the success control for "Global optimization II". In this case, the duration of the written exam is 120 min.

Prerequisites

None

Modeled Conditions

The following conditions have to be fulfilled:

1. The course T-WIWI-103638 - Global Optimization I and II must not have been started.

Recommendation

None

Annotation

Part I and II of the lecture are held consecutively in the *same*semester.

Below you will find excerpts from events related to this course:

V	Globale Optimierung I	Lecture (V)
	2550134, SS 2019, 2 SWS, Open in study portal	

Learning Content

In many optimization problems from economics, engineering and natural sciences, numerical solution methods are only able to efficiently identify *local* optimizers, while it is much harder to find *globally* optimal points. This corresponds to the fact that by local search it is easy to find the summit of the closest mountain, but that the search for the summit of Mount Everest is rather elaborate.

Part I of the lecture treats methods for global optimization of convex functions under convex constraints. It is structured as follows:

- Introduction, examples, and terminology
- Existence results
- Optimality in convex optimization
- Duality, bounds, and constraint qualifications
- Numerical methods

Nonconvex optimization problems are treated in part II of the lecture.

The lecture is accompanied by computer exercises in which you can learn the programming language MATLAB and implement and test some of the methods for practically relevant examples.

Literature

- W. Alt *Numerische Verfahren der konvexen, nichtglatten Optimierung* Teubner 2004
- C.A. Floudas *Deterministic Global Optimization* Kluwer 2000
- R. Horst, H. Tuy *Global Optimization* Springer 1996
- A. Neumaier *Interval Methods for Systems of Equations* Cambridge University Press 1990

T   6.65 Course: Global Optimization I and II [T-WIWI-103638]

Responsible:	Prof. Dr. Oliver Stein
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101936 - Methodische Grundlagen des OR

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	9	Each summer term	1

Events					
SS 2019	2550134	Globale Optimierung I	2 SWS	Lecture (V)	Stein
SS 2019	2550136	Globale Optimierung II	2 SWS	Lecture (V)	Stein
Exams					
WS 18/19	7900001_NK_WS1819	Global optimization I and II		Prüfung (PR)	Stein

Competence Certificate

The assessment of the lecture is a written examination (120 minutes) according to §4(2), 1 of the examination regulation and possibly of a compulsory prerequisite.

The examination is held in the semester of the lecture and in the following semester.

Prerequisites

None

Modeled Conditions

The following conditions have to be fulfilled:

1. The course T-WIWI-102726 - Global Optimization I must not have been started.
2. The course T-WIWI-102727 - Global Optimization II must not have been started.

Recommendation

None

Annotation

Part I and II of the lecture are held consecutively in the *same* semester.

Below you will find excerpts from events related to this course:

V   Globale Optimierung I
2550134, SS 2019, 2 SWS, Open in study portal

Lecture (V)

Learning Content

In many optimization problems from economics, engineering and natural sciences, numerical solution methods are only able to efficiently identify *local* optimizers, while it is much harder to find *globally* optimal points. This corresponds to the fact that by local search it is easy to find the summit of the closest mountain, but that the search for the summit of Mount Everest is rather elaborate.

Part I of the lecture treats methods for global optimization of convex functions under convex constraints. It is structured as follows:

- Introduction, examples, and terminology
- Existence results
- Optimality in convex optimization
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- Numerical methods

Nonconvex optimization problems are treated in part II of the lecture.

The lecture is accompanied by computer exercises in which you can learn the programming language MATLAB and implement and test some of the methods for practically relevant examples.

Literature

- W. Alt *Numerische Verfahren der konvexen, nichtglatten Optimierung* Teubner 2004
- C.A. Floudas *Deterministic Global Optimization* Kluwer 2000
- R. Horst, H. Tuy *Global Optimization* Springer 1996
- A. Neumaier *Interval Methods for Systems of Equations* Cambridge University Press 1990

V	**Globale Optimierung II** 2550136, SS 2019, 2 SWS, **Open in study portal**	**Lecture (V)**

Learning Content

In many optimization problems from economics, engineering and natural sciences, numerical solution methods are only able to efficiently identify *local* optimizers, while it is much harder to find *globally* optimal points. This corresponds to the fact that by local search it is easy to find the summit of the closest mountain, but that the search for the summit of Mount Everest is rather elaborate.

The global solution of convex optimization problems is subject of part I of the lecture.

Part II of the lecture treats methods for global optimization of nonconvex functions under nonconvex constraints. It is structured as follows:

- Introduction and examples
- Convex relaxation
- Interval arithmetic
- Convex relaxation via aBB method
- Branch and bound methods
- Lipschitz optimization

The lecture is accompanied by computer exercises in which you can learn the programming language MATLAB and implement and test some of the methods for practically relevant examples.

Literature

- W. Alt *Numerische Verfahren der konvexen, nichtglatten Optimierung* Teubner 2004
- C.A. Floudas *Deterministic Global Optimization* Kluwer 2000
- R. Horst, H. Tuy *Global Optimization* Springer 1996
- A. Neumaier *Interval Methods for Systems of Equations* Cambridge University Press 1990

T 6.66 Course: Global Optimization II [T-WIWI-102727]

Responsible: Prof. Dr. Oliver Stein
Organisation: KIT Department of Economics and Management
Part of: M-INFO-102060 - Weitere Leistungen
                     M-WIWI-101936 - Methodische Grundlagen des OR

Type Prüfungsleistung schriftlich	**Credits** 4,5	**Recurrence** Each summer term	**Version** 2

Events					
SS 2019	2550135	Übungen zu Globale Optimierung I+II	1 SWS	Practice (Ü)	Stein
SS 2019	2550136	Globale Optimierung II	2 SWS	Lecture (V)	Stein
Exams					
WS 18/19	7900152_NK_WS1819	Global Optimization II		Prüfung (PR)	Stein

Competence Certificate
The assessment of the lecture is a written examination (60 minutes) according to §4(2), 1 of the examination regulation and possibly of a compulsory prerequisite.

The examination is held in the semester of the lecture and in the following semester.

The examination can also be combined with the examination of "Global optimization I". In this case, the duration of the written examination takes 120 minutes.

Prerequisites
None

Modeled Conditions
The following conditions have to be fulfilled:

1. The course T-WIWI-103638 - Global Optimization I and II must not have been started.

Annotation
Part I and II of the lecture are held consecutively in the *same*semester.

Below you will find excerpts from events related to this course:

V Globale Optimierung II   Lecture (V)
2550136, SS 2019, 2 SWS, Open in study portal

Learning Content

In many optimization problems from economics, engineering and natural sciences, numerical solution methods are only able to efficiently identify *local* optimizers, while it is much harder to find *globally* optimal points. This corresponds to the fact that by local search it is easy to find the summit of the closest mountain, but that the search for the summit of Mount Everest is rather elaborate.

The global solution of convex optimization problems is subject of part I of the lecture.

Part II of the lecture treats methods for global optimization of nonconvex functions under nonconvex constraints. It is structured as follows:

- Introduction and examples
- Convex relaxation
- Interval arithmetic
- Convex relaxation via aBB method
- Branch and bound methods
- Lipschitz optimization

The lecture is accompanied by computer exercises in which you can learn the programming language MATLAB and implement and test some of the methods for practically relevant examples.

Literature

- W. Alt *Numerische Verfahren der konvexen, nichtglatten Optimierung* Teubner 2004
- C.A. Floudas *Deterministic Global Optimization* Kluwer 2000
- R. Horst, H. Tuy *Global Optimization* Springer 1996
- A. Neumaier *Interval Methods for Systems of Equations* Cambridge University Press 1990

| T | **6.67 Course: Human Resource Management [T-WIWI-102909]** |

Responsible:	Prof. Dr. Petra Nieken
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101513 - Personal und Organisation

Type Prüfungsleistung schriftlich	**Credits** 4,5	**Recurrence** Each winter term	**Version** 1

Events					
WS 18/19	2573003	Human Resource Management	2 SWS	Lecture (V)	Nieken
WS 18/19	2573004	Übung zu Human Resource Management	1 SWS	Practice (Ü)	Nieken, Mitarbeiter
Exams					
WS 18/19	7900200	Human Resource Management		Prüfung (PR)	Nieken

Competence Certificate
The assessment of this course is a written examination (60 min) according to §4(2), 1 of the examination regulation. The exam takes place in every semester. Re-examinations are offered at every ordinary examination date.
In case of a small number of registrations, we might offer an oral exam instead of a written exam.

Prerequisites
None

Recommendation
Completion of module Business Administration is recommended.
Basic knowledge of microeconomics, game theory, and statistics is recommended.

Below you will find excerpts from events related to this course:

| V | **Human Resource Management**
2573003, WS 18/19, 2 SWS, Open in study portal | **Lecture (V)** |

Learning Content
The students acquire basic knowledge in the fields of human resource planning, selection and talent management. Different processes and instruments and their link to corporate strategy are evaluated based on microeconomic and behavioral approaches. The results are tested and discussed based on empirical data.

Annotation
Recommendations
Completion of module Business Administration is recommended.
Basic knowledge of microeconomics, game theory, and statistics is recommended.

Workload
The total workload for this course is approximately 135 hours.

Lecture 32h

Preparation of lecture 52h

Exam preparation 51h

Literature

- Personnel Economics in Practice, Lazear & Gibbs, John Wiley & Sons, 2014
- Strategic Human Resources. Frameworks for General Managers, Baron & Kreps, John Wiley & Sons, 1999

T 6.68 Course: Industrial Organization [T-WIWI-102844]

Responsible:	Prof. Dr. Johannes Philipp Reiß
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101499 - Angewandte Mikroökonomik
	M-WIWI-101501 - Wirtschaftstheorie

Type Prüfungsleistung schriftlich	**Credits** 4,5	**Recurrence** Irregular	**Version** 1

Events					
SS 2019	2560238	Industrial Organization	2 SWS	Lecture (V)	Reiß, Hofmann
SS 2019	2560239	Übung zu Industrieökonomie	2 SWS	Practice (Ü)	Reiß, Hofmann
Exams					
WS 18/19	79191IO	Industrial Organization		Prüfung (PR)	Reiß

Competence Certificate
The assessment consists of a written exam (60 minutes) (following §4(2), 1 of the examination regulation). The exam takes place in every semester. Re-examinations are offered at every ordinary examination date.

Prerequisites
None

Recommendation
Completion of the module Economics [WW1VWL] is assumed.

Annotation
This course is not given in summer 2017.

Below you will find excerpts from events related to this course:

V Industrial Organization
2560238, SS 2019, 2 SWS, Open in study portal
                                                                                          Lecture (V)

Learning Content
This course introduces the theory of industrial organization using game theoretical models. The course is divided into two parts: The first part reviews standard market forms (monopoly, oligopoly, perfect competition). The second part discusses more advanced topics including price discrimination, strategic product differentiation, cartel formation, market entry, and research and development.

Workload
The total workload for this course is approximately 135.0 hours. For further information see German version.

Literature
Compulsory Textbook:

H. Bester (2012): Theorie der Industrieökonomik, Springer-Verlag.

Additional Literature:

J. Tirole (1988): Theory of Industrial Organization, MIT Press.

D. Carlton / J. Perloff (2005): Modern Industrial Organization, Pearson.

P. Belleflamme / M. Peitz (2010): Industrial Organization

T   6.69 Course: Industrial Property and Copyright Law [T-INFO-101304]

Responsible:	Prof. Dr. Thomas Dreier
Organisation:	KIT Department of Informatics
Part of:	M-INFO-101253 - Geistiges Eigentum und Datenschutz
	M-INFO-102060 - Weitere Leistungen

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	3	Each winter term	1

Events					
WS 18/19	24070	Industrial Property and Copyright Law	2 SWS	Lecture (V)	Dreier
Exams					
WS 18/19	7500006	Industrial Property and Copyright Law		Prüfung (PR)	Dreier, Matz
SS 2019	7500056	Industrial Property and Copyright Law		Prüfung (PR)	Dreier, Matz

T 6.70 Course: Information Security [T-WIWI-108387]

Responsible: Prof. Dr. Melanie Volkamer
Organisation: KIT Department of Economics and Management
Part of: M-INFO-102060 - Weitere Leistungen
M-WIWI-104069 - Informationssicherheit

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	5	Each summer term	1

Events					
SS 2019	2511550	Information Security	2 SWS	Lecture (V)	Volkamer
SS 2019	2511551	Exercise Information Security	1 SWS	Practice (Ü)	Volkamer, Mayer
Exams					
WS 18/19	7900074	Information Security		Prüfung (PR)	Volkamer
SS 2019	7900064	Information Security		Prüfung (PR)	Volkamer

Competence Certificate

The assessment of this course is a written examination (60 min) according to §4(2), 1 of the examination regulation or an oral exam (30 min) following §4, Abs. 2, 2 of the examination regulation.

The exam takes place every semester and can be repeated at every regular examination date.

Prerequisites

None.

Below you will find excerpts from events related to this course:

V Information Security
2511550, SS 2019, 2 SWS, Open in study portal   Lecture (V)

Description

- Basics and concepts of information security
- Understanding the protection objectives of information security and various attack models (including associated assumptions)
- introduction of measures to achieve the respective protection goals, taking into account different attack models
- Note: In contrast to the IT Security lecture, measures such as encryption algorithms are treated only abstractly, i. e. the idea of the measure, assumptions to the attacker and the deployment environment.
- Presentation and analysis of problems of information security arising from human-machine interaction and presentation of the Human Centered Security by Design approach.
- Introduction into organisational protective measures and standards to be observed for companies

Learning Content

- Basics and concepts of information security
- Understanding the protection objectives of information security and various attack models (including associated assumptions)
- introduction of measures to achieve the respective protection goals, taking into account different attack models
- Note: In contrast to the IT Security lecture, measures such as encryption algorithms are treated only abstractly, i. e. the idea of the measure, assumptions to the attacker and the deployment environment.
- Presentation and analysis of problems of information security arising from human-machine interaction and presentation of the Human Centered Security by Design approach.
- Introduction into organisational protective measures and standards to be observed for companies.

Literature

- P. Gerber, M. Ghiglieri, B. Henhapl, O. Kulyk, K. Marky, P. Mayer, B. Reinheimer, and M. Volkamer, *Human Factors in Security*. Springer, Jan. 2018, pp. 83–98.
- C. Eckert, *IT-Sicherheit: Konzepte-Verfahren-Protokolle*. Walter de Gruyter, 2013

T 6.71 Course: Integrated Network and Systems Management [T-INFO-101284]

Responsible: Prof. Dr. Bernhard Neumair
Organisation: KIT Department of Informatics
Part of: M-INFO-102060 - Weitere Leistungen
M-WIWI-101440 - Internetanwendungen

Type Prüfungsleistung mündlich	Credits 4	Recurrence Each summer term	Version 1

Events					
SS 2019	2400004	Integrated Network and Systems Management	2 SWS	Lecture (V)	Neumair

T	**6.72 Course: International Finance [T-WIWI-102646]**

Responsible: Prof. Dr. Marliese Uhrig-Homburg
Organisation: KIT Department of Economics and Management
Part of: M-INFO-102060 - Weitere Leistungen
M-WIWI-101402 - eFinance
M-WIWI-101423 - Topics in Finance II
M-WIWI-101465 - Topics in Finance I

Type Prüfungsleistung schriftlich	**Credits** 3	**Recurrence** Each summer term	**Version** 1

Events					
SS 2019	2530570	International Finance	2 SWS	Lecture (V)	Walter, Uhrig-Homburg
Exams					
WS 18/19	7900052	International Finance		Prüfung (PR)	Uhrig-Homburg

Competence Certificate
See German version.

Prerequisites
None

Recommendation
None

Annotation
See German version.

Below you will find excerpts from events related to this course:

V	**International Finance** 2530570, SS 2019, 2 SWS, Open in study portal	**Lecture (V)**

Description
The main aspects of this course are the chances and the risks which are associated with international transactions. We carry outour analysis fromtwo distinctperspectives:First the point of view of an international investor second that, of an international corporation.Several alternativesto the management of foreignexchangerisks are shown. Due to the importance of foreign exchangerisks, the first part of the course deals withcurrency markets. Furthermore current exchange rate theories are discussed.

Learning Content
The main aspects of this course are the chances and the risks which are associated with international transactions. We carry out our analysis from two distinct perspectives: First the point of view of an international investor second that, of an international corporation. Several alternatives to the management of foreign exchange risks are shown. Due to the importance of foreign exchange risks, the first part of the course deals with currency markets. Furthermore current exchange rate theories are discussed.

Workload
The total workload for this course is approximately 90 hours. For further information see German version.

Literature
Elective literature:

- Eiteman, D. et al., Multinational Business Finance, 13. edition, 2012.
- Solnik, B. and D. McLeavey, Global Investments, 6. edition, 2008.

T   6.73 Course: International Marketing [T-WIWI-102807]

Responsible:	Dr. Sven Feurer
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101424 - Grundlagen des Marketing

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	1,5	Each winter term	1

Events					
WS 18/19	2572155	International Marketing	1 SWS	Lecture (V)	Feurer
Exams					
WS 18/19	7900123	International Marketing		Prüfung (PR)	Klarmann
WS 18/19	7900128	International Marketing		Prüfung (PR)	Klarmann

Competence Certificate
The assessment consists of a written exam (60 minutes) (following §4(2), 1 of the examination regulation).

Prerequisites
None

Annotation
For further information please contact Marketing & Sales Research Group (marketing.iism.kit.edu).

Below you will find excerpts from events related to this course:

V   International Marketing
2572155, WS 18/19, 1 SWS, Open in study portal

Lecture (V)

Description
Doing marketing abroad creates a number of significant new challenges for firms. This class is intended to prepare you for meeting these challenges. In the first session, we will discuss the peculiarities of international marketing. The next five sessions will then be dedicated to methods that can be used to address them. For instance, we will look at the following issues:

- Internationalization strategies
- Market entry strategies
- Standardization vs. individualization (e.g. regarding products, prices, and communication)
- Measurement equivalence in international market research

In the final session, we will apply this knowledge to the case of Wal Mart. In particular, Wal Mart, despite being the largest retailing company worldwide, failed to successfully enter the German Market. We will discuss Wal Mart's failure using the methods taught in the weeks before.

Learning Content

Doing marketing abroad creates a number of significant new challenges for firms. This class is intended to prepare you for meeting these challenges. In the first session, we will discuss the peculiarities of international marketing. The next five sessions will then be dedicated to methods that can be used to address them. For instance, we will look at the following issues:

- Internationalization strategies
- Market entry strategies
- Standardization vs. individualization (e.g. regarding products, prices, and communication)
- Measurement equivalence in international market research

In the final session, we will apply this knowledge to the case of Wal Mart. In particular, Wal Mart, despite being the largest retailing company worldwide, failed to successfully enter the German Market. We will discuss Wal Mart's failure using the methods taught in the weeks before.

Annotation

For further information please contact Marketing & Sales Research Group (marketing.iism.kit.edu).

Workload

The total workload for this course is approximately 45.0 hours. For further information see German version.

Literature

Homburg, Christian (2016), Marketingmanagement, 6. ed., Wiesbaden.

T 6.74 Course: Internship [T-WIWI-103093]

Responsible: Prof. Dr. Sebastian Abeck
Prof. Dr. Hagen Lindstädt
Organisation: KIT Department of Economics and Management
Part of: M-WIWI-101433 - Berufspraktikum

Type	Credits	Version
Studienleistung	8	1

Competence Certificate
see module description

Prerequisites
see module description

Annotation
see module description

| T | **6.75 Course: Introduction in Computer Networks [T-INFO-102015]** |

Responsible: Prof. Dr. Martina Zitterbart
Organisation: KIT Department of Informatics
Part of: M-INFO-101178 - Kommunikation und Datenhaltung
M-INFO-101194 - Telematics
M-INFO-102060 - Weitere Leistungen

Type Prüfungsleistung schriftlich	**Credits** 4	**Recurrence** Each summer term	**Version** 1

Events					
SS 2019	24519	**Einführung in Rechnernetze**	2 SWS	Lecture (V)	Friebe, Gerhard, Jung, Zitterbart
SS 2019	24521	**Übung zu Einführung in Rechnernetze**	1 SWS	Practice (Ü)	Friebe, Gerhard, Jung, Zitterbart
Exams					
WS 18/19	7500201	**Introduction to Computer Networking**		Prüfung (PR)	Zitterbart

T 6.76 Course: Introduction to Energy Economics [T-WIWI-102746]

Responsible:	Prof. Dr. Wolf Fichtner
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101464 - Energiewirtschaft

Type Prüfungsleistung schriftlich	**Credits** 5,5	**Recurrence** Each summer term	**Version** 2

Events					
SS 2019	2581010	**Introduction to Energy Economics**	2 SWS	Lecture (V)	Fichtner, Sandmeier
SS 2019	2581011	**Übungen zu Einführung in die Energiewirtschaft**	2 SWS	Practice (Ü)	Lehmann, Kleinebrahm, Jochem, Sandmeier
Exams					
WS 18/19	7981010	**Introduction to Energy Economics**		Prüfung (PR)	Fichtner

Competence Certificate
The assessment consists of a written exam (90 min.) according to § 4 paragraph 2 Nr. 1 of the examination regulation.

Prerequisites
None.

Below you will find excerpts from events related to this course:

V Introduction to Energy Economics
2581010, SS 2019, 2 SWS, Open in study portal
                                                                    Lecture (V)

Learning Content
1. Introduction: terms, units, conversions
2. The energy carrier gas (reserves, resources, technologies)
3. The energy carrier oil (reserves, resources, technologies)
4. The energy carrier hard coal (reserves, resources, technologies)
5. The energy carrier lignite (reserves, resources, technologies)
6. The energy carrier uranium (reserves, resources, technologies)
7. The final carrier source electricity
8. The final carrier source heat
9. Other final energy carriers (cooling energy, hydrogen, compressed air)

Workload
The total workload for this course is approximately 165.0 hours. For further information see German version.

Literature
Complementary literature:

Pfaffenberger, Wolfgang. Energiewirtschaft. ISBN 3-486-24315-2

Feess, Eberhard. Umweltökonomie und Umweltpolitik. ISBN 3-8006-2187-8

Müller, Leonhard. Handbuch der Elektrizitätswirtschaft. ISBN 3-540-67637-6

Stoft, Steven. Power System Economics. ISBN 0-471-15040-1

Erdmann, Georg. Energieökonomik. ISBN 3-7281-2135-5

T 6.77 Course: Introduction to Game Theory [T-WIWI-102850]

Responsible: Prof. Dr. Clemens Puppe
                  Prof. Dr. Johannes Philipp Reiß

Organisation: KIT Department of Economics and Management

Part of: M-INFO-102060 - Weitere Leistungen
              M-WIWI-101499 - Angewandte Mikroökonomik
              M-WIWI-101501 - Wirtschaftstheorie

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	4,5	Each summer term	1

Events					
SS 2019	2520525	Introduction to Game Theory	2 SWS	Lecture (V)	Reiß
SS 2019	2520526	Übungen zu Einführung in die Spieltheorie	1 SWS	Practice (Ü)	Reiß
Exams					
WS 18/19	7900212	Introduction to Game Theory		Prüfung (PR)	Puppe

Competence Certificate
The assessment consists of a written exam (60 minutes) according to Section 4(2),1 of the examination regulation.
The exam takes place in the recess period and can be resited at every ordinary examination date.

Prerequisites
None

Recommendation
Basic knowledge of mathematics and statistics is assumed.

Below you will find excerpts from events related to this course:

V Introduction to Game Theory
2520525, SS 2019, 2 SWS, Open in study portal   Lecture (V)

Learning Content
The course focusses on non-cooperative game theory. It discusses models, solution concepts, and applications for simultaneous games as well as sequential games. Various solution concepts, e.g., Nash equilibrium and subgame-perfect equilibrium, are introduced along with more advanced concepts. A short introduction to cooperative game theory is given if there is sufficient time.

Workload
The total workload for this course is approximately 135.0 hours. For further information see German version.

Literature
Compulsory textbook:

Gibbons (1992): A Primer in Game Theory, Harvester-Wheatsheaf.

Additional Literature:

Berninghaus/Ehrhart/Güth (2010): Strategische Spiele, Springer Verlag.

Binmore (1991): Fun and Games, DC Heath.

Fudenberg/Tirole (1991): Game Theory, MIT Press.

Heifetz (2012): Game Theory, Cambridge Univ. Press.

T   6.78 Course: Introduction to Information Engineering and Management [T-WIWI-102757]

Responsible:	Prof. Dr. Andreas Geyer-Schulz
	Prof. Dr. Christof Weinhardt
Organisation:	KIT Department of Economics and Management
Part of:	M-WIWI-101491 - Grundlagen der Betriebswirtschaftslehre

Type Prüfungsleistung schriftlich	Credits 4	Recurrence Each summer term	Version 1

Events					
SS 2019	2540490	Introduction to Information Engineering and Management	2 SWS	Lecture (V)	Geyer-Schulz, Weinhardt
SS 2019	2540491	Tutorien zur Einführung in die Informationswirtschaft	2 SWS	Tutorial (Tu)	Geyer-Schulz, Weinhardt, Schweigert, Peukert

Competence Certificate

The assessment consists of a written exam (60 min) (according to §4(2), 1 of the examination regulation). Details on the formation of the grade will be announced at the beginning of the event.

Prerequisites

None

Below you will find excerpts from events related to this course:

V   Introduction to Information Engineering and Management   Lecture (V)
2540490, SS 2019, 2 SWS, Open in study portal

Description

The last years have seen the rise of information companies whose company purpose is the generation and distribution of informations. In these companies, as well as companies of the old economy, the role of information, communication, and their cost is increasing. Some of the problems related with this trend are presented and treated in-depth in the course Introduction to Information Engineering and Management. The goal of this course is to present the foundation of information engineering and management and the necessary linking of the different disciplines in today's information society. The course is completely motivated by authentic, real-world examples. With the help of these examples, the following topics as well as the interdependencies between business administration, economics, information technology, and law, are treated: The foundation of a company: Choosing the legal form and financing Finanical planning and investment Information and information technology Outsourcing und horizontale Unternehmensintegration Service Engineering Electronic markets Logistics/SCM Web/Internet-Marketing Production and Procurement

Learning Content

The last years have seen the rise of information companies whose company purpose is the generation and distribution of informations. In these companies, as well as companies of the old economy, the role of information, communication, and their cost is increasing. Some of the problems related with this trend are presented and treated in-depth in the course *Introduction to Information Engineering and Management.*

The goal of this course is to present the foundation of information engineering and management and the necessary linking of the different disciplines in today's information society. The course is completely motivated by authentic, real-world examples. With the help of these examples, the following topics as well as the interdependencies between business administration, economics, information technology, and law, are treated:

- The foundation of a company: Choosing the legal form and financing
- Information for economic decision support.
- Organizing information flows, valuation of information
- Network Economies
- Service Engineering
- Electronic markets
- Logistics/SCM
- Web/Internet-Marketing
- Production and Procurement

Workload

The total workload for this course should be 120 hours on average. For more details please consult the german version of the Module Handbook.

Literature

- Shapiro, C. and Varian, H.R., (1999) Information rules: a strategic guide to the network economy, Harvard Business School Press
- Fensel, D. et al. (2001) Product data integration in B2B e-commerce, IEEE Intelligent Systems, 16(4). Pages 54–59.
- Kotler (1980) Marketing Management - Analysis, Planning and Control. Prentice-Hall, Englewood Cliffs, 4th Edition. Pages 3–92.
- Porter (1998) Competitive Advantage: Creating and Sustaining Superior Performance. Free Press, New York. Pages 33–53.
- Sterman (2000) Business Dynamics: Systems Thinking and Modeling for a Complex World. McGraw-Hill, Boston. Chapters 4, 5.1, 5.2, 5.3, and 5.5. Pages 107–133, 137–159, 169–177.

Elective literature:

- Geyer-Schulz (1998) Fuzzy Genetic Algorithms. In: Hung T. Nguyen and Michio Sugeno (Eds.) Fuzzy Systems: Modeling and Control, Kluwer Academic Publishers, Boston. Pages 403–460.
- Porter (1998) Competitive Advantage: Creating and Sustaining Superior Performance. Free Press, New York. Pages 62-118.
- Senge (1994) The Fifth Discipline: The Art and Practice of the Learning Organization. Currency/Doubleday, New York. Chapters 2 and 3. Pages 17–54.
- Sterman (1989) Modeling Managerial Behavior: Misperceptions of Feedback in a Dynamic Decision Making Experiment, Management Science, 35(3). Pages 321–339.

T   6.79 Course: Introduction to Operations Research I and II [T-WIWI-102758]

Responsible:	Prof. Dr. Stefan Nickel
	Prof. Dr. Steffen Rebennack
	Prof. Dr. Oliver Stein
Organisation:	KIT Department of Economics and Management
Part of:	M-WIWI-101418 - Einführung in das Operations Research

Type Prüfungsleistung schriftlich	**Credits** 9	**Recurrence** see Annotations	**Version** 1

Events					
WS 18/19	2530043	Introduction to Operations Research II	2 SWS	Lecture (V)	Nickel
WS 18/19	2530044	Tutorien zu Einführung in das Operations Research II	SWS	Tutorial (Tu)	Nickel, Dunke, Assistenten
SS 2019	2550040	Introduction to Operations Research I	2+2 SWS	Lecture (V)	Stein
Exams					
WS 18/19	7900156	Introduction to Operations Research I and II		Prüfung (PR)	Nickel

Competence Certificate

The assessment of the module is carried out by a written examination (120 minutes) according to Section 4(2), 1 of the examination regulation.

In each term (usually in March and July), one examination is held for both courses.

The overall grade of the module is the grade of the written examination.

Prerequisites

None

Recommendation

Mathematics I und II. Programming knowledge for computing exercises.

It is strongly recommended to attend the course *Introduction to Operations Research I* [2550040] before attending the course*Introduction to Operations Research II* [2530043].

Below you will find excerpts from events related to this course:

V	**Introduction to Operations Research II** 2530043, WS 18/19, 2 SWS, Open in study portal	**Lecture (V)**

Description

Integer and Combinatorial Programming: Basic notions, cutting plane metehods, branch and bound methods, branch and cut methods, heuristics.

Nonlinear Programming: Basic notions, optimality conditions, solution methods for convex and nonconvex optimization problems.

Dynamic and stochastic models and methods: dynamical programming, Bellman method, lot sizing models, dyanical and stochastic inventory models, queuing theory.

Learning Content

Integer and Combinatorial Programming: Basic notions, cutting plane metehods, branch and bound methods, branch and cut methods, heuristics.

Nonlinear Programming: Basic notions, optimality conditions, solution methods for convex and nonconvex optimization problems.

Dynamic and stochastic models and methods: dynamical programming, Bellman method, lot sizing models, dyanical and stochastic inventory models, queuing theory.

Workload

Berechnung des Arbeitsaufwands eines durchschnittlichen Studenten um die Lernziele zu erreichen. (Intern)

Eine Vernetzung von learningoutcomes (Wissen (content), Kompetenzen (skills) und levels mit dem dafür geschätzten Arbeitsaufwand eines durchschnittlichen Studenten ist anzustreben.

Literature

- Nickel, Stein, Waldmann: Operations Research, 2nd edition, Springer, 2014
- Hillier, Lieberman: Introduction to Operations Research, 8th edition. McGraw-Hill, 2005
- Murty: Operations Research. Prentice-Hall, 1995
- Neumann, Morlock: Operations Research, 2. Auflage. Hanser, 2006
- Winston: Operations Research - Applications and Algorithms, 4th edition. PWS-Kent, 2004

| **V** | **Introduction to Operations Research I**
 2550040, SS 2019, 2+2 SWS, Open in study portal | **Lecture (V)** |

Description

Examples for typical OR problems.

Linear Programming: Basic notions, simplex method, duality, special versions of the simplex method (dual simplex method, three phase method), sensitivity analysis, parametric optimization, game theory.

Graphs and Networks: Basic notions of graph theory, shortest paths in networks, project scheduling, maximal and minimal cost flows in networks.

Learning Content

Examples for typical OR problems.

Linear Programming: Basic notions, simplex method, duality, special versions of the simplex method (dual simplex method, three phase method), sensitivity analysis, parametric optimization, multicriteria optimization.

Graphs and Networks: Basic notions of graph theory, shortest paths in networks, project scheduling, maximal flows in networks.

Workload

Berechnung des Arbeitsaufwands eines durchschnittlichen Studenten um die Lernziele zu erreichen. (Intern)

Eine Vernetzung von learningoutcomes (Wissen (content), Kompetenzen (skills) und levels mit dem dafür geschätzten Arbeitsaufwand eines durchschnittlichen Studenten ist anzustreben.

Literature

- Nickel, Stein, Waldmann: Operations Research, 2nd edition, Springer, 2014
- Hillier, Lieberman: Introduction to Operations Research, 8th edition. McGraw-Hill, 2005
- Murty: Operations Research. Prentice-Hall, 1995
- Neumann, Morlock: Operations Research, 2. Auflage. Hanser, 2006
- Winston: Operations Research - Applications and Algorithms, 4th edition. PWS-Kent, 2004

T   6.80 Course: Introduction to Public Finance [T-WIWI-102877]

Responsible:	Prof. Dr. Berthold Wigger
Organisation:	KIT Department of Economics and Management
Part of:	M-WIWI-101403 - Finanzwissenschaft

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	4,5	Each winter term	1

Events					
WS 18/19	2560131	Introduction to Public Finance	3 SWS	Lecture (V)	Wigger
Exams					
WS 18/19	790fiwi	Introduction to Public Finance		Prüfung (PR)	Wigger
SS 2019	790fiwi	Introduction to Public Finance		Prüfung (PR)	Wigger

Competence Certificate
The assessment consists of a written exam (60 min.) according to § 4 paragraph 2 Nr. 1 of the examination regulation SPO 2015.

Prerequisites
None

Below you will find excerpts from events related to this course:

V   Introduction to Public Finance
2560131, WS 18/19, 3 SWS, Open in study portal   Lecture (V)

Learning Content
The course *Introduction to Public Finance* provides an overview of the fundamental issues in public economics. The first part of the course deals with normative theories about the economic role of the state in a market economy. Welfare economics theory is offered as a base model, with which alternative normative theories are compared and contrasted. Within this theoretical framework, arguments concerning efficiency and equity are developed as justification for varying degrees of economic intervention by the state. The second part of the course deals with the positivist theory of public economics. Processes of public decision making are examined and the conditions that lead to market failures resulting from collective action problems are discussed. The third part of the course examines a variety of public spending programs, including social security systems, the public education system, and programs aimed at reducing poverty. The fifth part of the course addresses the key theoretical and political issues associated with fiscal federalism.

Workload
The total workload for this course is approximately 135.0 hours. For further information see German version.

Literature
Wigger, B. U. 2006. *Grundzüge der Finanzwissenschaft.* Springer: Berlin.

T   6.81 Course: Introduction to Stochastic Optimization [T-WIWI-106546]

Responsible: Prof. Dr. Steffen Rebennack
Organisation: KIT Department of Economics and Management
Part of: M-INFO-102060 - Weitere Leistungen
M-WIWI-103337 - Optimierung unter Unsicherheit

Type Prüfungsleistung schriftlich	**Credits** 4,5	**Recurrence** Each summer term	**Version** 1

Events					
SS 2019	2550470	**Einführung in die Stochastische Optimierung**	2 SWS	Lecture (V)	Rebennack
SS 2019	2550471	**Übung zur Einführung in die Stochastische Optimierung**	1 SWS	Practice (Ü)	Rebennack, Assistenten
Exams					
WS 18/19	7900143	**Introduction to Stochastic Optimization**		Prüfung (PR)	Rebennack

Competence Certificate

The assessment consists of a written exam (60 minutes) according to Section 4(2), 1 of the examination regulation. The exam takes place in every the semester.

Prerequisites

None.

T 6.82 Course: Investments [T-WIWI-102604]

Responsible:	Prof. Dr. Marliese Uhrig-Homburg
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101435 - Essentials of Finance

Type Prüfungsleistung schriftlich	**Credits** 4,5	**Recurrence** Each summer term	**Version** 1

Events					
SS 2019	2530575	Investments	2 SWS	Lecture (V)	Uhrig-Homburg
SS 2019	2530576	Übung zu Investments	1 SWS	Practice (Ü)	Uhrig-Homburg
Exams					
WS 18/19	7900054	Investments		Prüfung (PR)	Uhrig-Homburg

Competence Certificate

The assessment consits of a written exam (75 min) according to Section 4(2), 1 of the examination regulation.

The examination takes place in every semester. Re-examinations are offered at eyery ordinary examination date.

A bonus can be earned through successful participation in the excercise. If the grade of the written examination is between 4.0 and 1.3, the bonus improves the grade by one grade level (0.3 or 0.4). The exact criteria for awarding a bonus will be announced at the beginning of the course.

Prerequisites

None

Recommendation

Knowledge of Business Administration: Finance and Accounting [2610026] is recommended.

Below you will find excerpts from events related to this course:

V Investments
2530575, SS 2019, 2 SWS, Open in study portal

Lecture (V)

Description

The lecture deals with investment decisions under uncertainty, where the main emphasis is on investment decisions on stock markets. After a discussion of the basic questions of corporate valuation, the lecture focuses on portfolio theory. After that, risk and return in equilibrium are derived using the Capital Asset Pricing Model and the Arbitrage Pricing Theory, followed by an introduction into derivatives markets, especially forwards and futures. The lecture concludes with investments on bond markets.

Learning Content

The lecture deals with investment decisions under uncertainty, where the main emphasis is on investment decisions on stock markets. After a discussion of the basic questions of corporate valuation, the lecture focuses on portfolio theory. After that, risk and return in equilibrium are derived using the Capital Asset Pricing Model and the Arbitrage Pricing Theory. The lecture concludes with investments on bond markets.

Workload

The total workload for this course is approximately 135.0 hours. For further information see German version.

Literature
Elective literature:

Bodie/Kane/Marcus (2010): Essentials of Investments, Eighth Edition, McGraw-Hill Irwin, Boston

T 6.83 Course: IT-Security Management for Networked Systems [T-INFO-101323]

Responsible: Prof. Dr. Hannes Hartenstein
Organisation: KIT Department of Informatics
Part of: M-INFO-100786 - IT-Sicherheitsmanagement für vernetzte Systeme
M-INFO-102060 - Weitere Leistungen

Type Prüfungsleistung mündlich	Credits 5	Recurrence Each winter term	Version 1

Events					
WS 18/19	24149	IT-Security Management for Networked Systems	3 SWS	Lecture / Practice (VÜ)	Hartenstein, Grashöfer, Neudecker
Exams					
WS 18/19	7500348	IT-Security Management for Networked Systems		Prüfung (PR)	Hartenstein

T   6.84 Course: Lab: Working with Database Systems [T-INFO-103552]

Responsible: Prof. Dr.-Ing. Klemens Böhm
Organisation: KIT Department of Informatics
Part of: M-INFO-101193 - Grundlagen von Informationssystemen
                   M-INFO-101229 - Datenbanksysteme in Theorie und Praxis
                   M-INFO-101235 - Grundlagen des Daten- und Informationsmanagements
                   M-INFO-102060 - Weitere Leistungen

Type	Credits	Recurrence	Version
Studienleistung	4	Each winter term	2

Events					
WS 18/19	24317	Arbeiten mit Datenbanksystemen	2 SWS	Practical course (P)	Böhm
Exams					
WS 18/19	7500146	Lab: Working with Database Systems		Prüfung (PR)	Böhm

Modeled Conditions

The following conditions have to be fulfilled:

1. The course T-INFO-101497 - Database Systems must have been passed.

T   6.85 Course: Logistics - Organisation, Design and Control of Logistic Systems [T-MACH-102089]

Responsible:	Prof. Dr.-Ing. Kai Furmans
Organisation:	KIT Department of Mechanical Engineering

Part of: M-INFO-102060 - Weitere Leistungen
                  M-WIWI-101421 - Supply Chain Management

Type Prüfungsleistung schriftlich	**Credits** 6	**Recurrence** Each summer term	**Version** 1

Events					
SS 2019	2118078	Logistics - Organisation, Design, and Control of Logistic Systems	3 SWS	Lecture (V)	Furmans
Exams					
WS 18/19	76-T-MACH-102089	Logistics - Organisation, Design and Control of Logistic Systems		Prüfung (PR)	Furmans, Mittwollen
SS 2019	76-T-MACH-102089	Logistics - Organisation, Design and Control of Logistic Systems		Prüfung (PR)	Furmans, Mittwollen

Competence Certificate
The assessment consists of a 90 minutes written examination (according to §4(2), 1 of the examination regulation).

Prerequisites
None

Recommendation
Requied are lectures on "Linear Algebra" and "Stochastic".

Below you will find excerpts from events related to this course:

V   Logistics - Organisation, Design, and Control of Logistic Systems   Lecture (V)
2118078, SS 2019, 3 SWS, Open in study portal

Description
Media:

Blackboard, LCD projector, in excercises also PCs.

Learning Content
Introduction

- historical overview
- lines of development

Structure of logistics systems

Distribution logistics

- location planning
- Vehicle Routing Planning
- distribution centers

Inventory management

- demand forecasting
- Inventory management policies
- Bullwhip effect

Production logistics

- layout planning
- material handling
- flow control

Supply Managament

- information flow
- transportation organization
- controlling and development of a logistics system
- co-operation mechanisms
- Lean SCM
- SCOR model

Identification Technologies

Workload
180 hrs

Literature

- Arnold/Isermann/Kuhn/Tempelmeier. Handbuch Logistik, Springer Verlag, 2002 (Neuauflage in Arbeit)
- Domschke. Logistik, Rundreisen und Touren, Oldenbourg Verlag, 1982
- Domschke/Drexl. Logistik, Standorte, Oldenbourg Verlag, 1996
- Gudehus. Logistik, Springer Verlag, 2007
- Neumann-Morlock. Operations-Research, Hanser-Verlag, 1993
- Tempelmeier. Bestandsmanagement in Supply Chains, Books on Demand 2006
- Schönsleben. Integrales Logistikmanagement, Springer, 1998

T 6.86 Course: Logistics and Supply Chain Management [T-WIWI-102870]

Responsible:	Dr. Marcus Wiens
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101437 - Industrielle Produktion I

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	3,5	Each summer term	1

Events					
SS 2019	2581996	Logistics and Supply Chain Management	2 SWS	Lecture (V)	Wiens
SS 2019	2581997	Übung zu Logistics and Supply Chain Management	1 SWS	Practice (Ü)	Diehlmann, Lüttenberg
Exams					
WS 18/19	7981996	Logistics and Supply Chain Management		Prüfung (PR)	Schultmann

Competence Certificate

The assessment consists of an oral (30 minutes) or a written (60 minutes) exam (following §4(2), 1 of the examination regulation). The exam takes place in every semester. Re-examinations are offered at every ordinary examination date.

Prerequisites

None

Below you will find excerpts from events related to this course:

V Logistics and Supply Chain Management   Lecture (V)
2581996, SS 2019, 2 SWS, Open in study portal

Learning Content

- Introduction: Basic Terms and Concepts
- Logistics Systems and Supply Chain Management
- Supply Chain Risk Management
- Extensions and Applications

Workload

Toatl effort required will account for approximately 105h (3.5 credits).

Literature

will be announced in the course

T 6.87 Course: Macroeconomic Theory [T-WIWI-109121]

Responsible:	Prof. Dr. Johannes Brumm
Organisation:	KIT Department of Economics and Management
Part of:	M-WIWI-101501 - Wirtschaftstheorie
	M-WIWI-101668 - Wirtschaftspolitik I

Type Prüfungsleistung schriftlich	**Credits** 4,5	**Recurrence** Each winter term	**Version** 2

Events					
WS 18/19	2560404	**Macroeconomic Theory**	2 SWS	Lecture (V)	Brumm
WS 18/19	2560405	**Übung zu Macroeconomic Theory**	1 SWS	Practice (Ü)	Pegorari
Exams					
WS 18/19	7900264	**Macroeconomic Theory**		Prüfung (PR)	Scheffel

Competence Certificate
The assessment consists of a written exam (60 min.) according to § 4 paragraph 2 Nr. 1 of the examination regulation.

Prerequisites
None.

Below you will find excerpts from events related to this course:

V Macroeconomic Theory
2560404, WS 18/19, 2 SWS, Open in study portal

Lecture (V)

Description
This course introduces a modern approach to macroeconomics by building on microeconomic principles. To be able to rigorously address key macroeconomic questions a general framework based on intertemporal decision making is introduced. Starting by the principles of consumer and firm behavior, this framework is successively expanded by introducing market imperfections, monetary factors as well as international trade. With this framework at hand students are able to analyze labor market policies, government deficits, monetary policy, financial crises, trade policy, and other important macroeconomic problems. Throughout the course, we not only point out the power of theory but also its limitations.

Workload
The total workload for this course is approximately 135 hours. For further information see the German version.

Literature
Literature and lecture notes are provided during the course.

T 6.88 Course: Management and Strategy [T-WIWI-102629]

Responsible:	Prof. Dr. Hagen Lindstädt
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101425 - Strategie und Organisation

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	3,5	Each summer term	1

Events					
SS 2019	2577900	**Management and Strategy**	2 SWS	Lecture (V)	Lindstädt
Exams					
WS 18/19	7900199	**Management and Strategy**		Prüfung (PR)	Lindstädt

Competence Certificate
The assessment consists of a written exam (60 min) taking place at the beginn of the recess period (according to §4 (2), 1 of the examination regulation). The exam takes place in every semester. Re-examinations are offered at every ordinary examination date.

Prerequisites
None

Below you will find excerpts from events related to this course:

V Management and Strategy
2577900, SS 2019, 2 SWS, Open in study portal

Lecture (V)

Description

- Corporate management principles
- Strategic management principles
- Strategic analysis
- Competitive strategy: modelling and selection on a divisional level
- Strategies for oligopolies and networks: anticipation of dependencies
- Corporate strategy: modelling and evaluation on a corporate level
- Strategy implementation

Learning Content
The participants learn about central concepts of strategic management along the ideal-typical strategy process: internal and external strategic analysis, concept and sources of competitive advantages, their importance when establishing competitive and corporate strategies as well as strategy assessment and implementation. This aims in particular to provide a summary of the basic concepts and models of strategic management, i.e. to provide in particular an action-oriented integration. Thereby a focus is on imparting knowledge about how price developments in oligopolistic markets can be understood, modeled and forecasted based on game theory.

Annotation
The credits for the course "Management and Strategy" have been changed from 4 to 3,5 from summer term 2015 on.

Workload
The total workload for this course is approximately 105.0 hours. For further information see German version.

Literature

- Grant, R.M.: *Contemporary Strategy Analysis.* Blackwell, 5. Aufl. Massachusetts 2005.
- Lindstädt, H.; Hauser, R.: *Strategische Wirkungsbereiche von Unternehmen.* Gabler, Wiesbaden 2004.

The relevant excerpts and additional sources are made known during the course.

T 6.89 Course: Managing Organizations [T-WIWI-102630]

Responsible:	Prof. Dr. Hagen Lindstädt
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101425 - Strategie und Organisation
	M-WIWI-101513 - Personal und Organisation

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	3,5	Each winter term	3

Events					
WS 18/19	2577902	**Managing Organizations**	2 SWS	Lecture (V)	Lindstädt, Burkardt, Jung
Exams					
WS 18/19	7900049	**Managing Organizations**		Prüfung (PR)	Lindstädt

Competence Certificate

The assessment will consist of a written exam (60 min) taking place at the beginning of the recess period (according to Section 4 (2), 2 of the examination regulation). The exam takes place in every semester. Re-examinations are offered at every ordinary examination date.

Prerequisites

None

Below you will find excerpts from events related to this course:

V Managing Organizations

2577902, WS 18/19, 2 SWS, Open in study portal

Lecture (V)

Description

- Principles of organisational management
- Managing organisational structures and processes: the selection of design parameters
- Ideal-typical organisational structures: choice and effect of parameter combinations
- Managing organisational changes

Learning Content

The course should enable the participants to assess the strengths and weaknesses of existing organisational structures and rules using systematic criteria. Here concepts and models for designing organisation structures, regulating organizational processes and managing organisational changes are presented and discussed using case studies. The course is structured to relate to actions and aims to give students a realistic view of the opportunities and limits of rational design approaches.

Annotation

The credits for the course "Managing Organizations" have been changed from 4 to 3,5 from summer term 2015 on.

Workload

The total workload for this course is approximately 105.0 hours. For further information see German version.

Literature

- Laux, H.; Liermann, F.: *Grundlagen der Organisation*, Springer. 6. Aufl. Berlin 2005.
- Lindstädt, H.: *Organisation*, in Scholz, C. (Hrsg.): Vahlens Großes Personallexikon, Verlag Franz Vahlen. 1. Aufl. München, 2009.
- Schreyögg, G.: *Organisation. Grundlagen moderner Organisationsgestaltung*, Gabler. 4. Aufl. Wiesbaden 2003.

The relevant excerpts and additional sources are made known during the course.

T 6.90 Course: Managing the Marketing Mix [T-WIWI-102805]

Responsible:	Prof. Dr. Martin Klarmann
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101424 - Grundlagen des Marketing

Type Prüfungsleistung schriftlich	**Credits** 4,5	**Recurrence** Each summer term	**Version** 1

Events					
SS 2019	2571152	Managing the Marketing Mix	2 SWS	Lecture (V)	Klarmann
SS 2019	2571153	Übung zu Marketing Mix (Bachelor)	1 SWS	Practice (Ü)	Moosbrugger, Pade

Competence Certificate
The assessment consists of a written exam (60 minutes) (following §4(2), 1 of the examination regulation).

Prerequisites
None

Annotation
For further information please contact Marketing & Sales Research Group (marketing.iism.kit.edu).

Below you will find excerpts from events related to this course:

V Managing the Marketing Mix
2571152, SS 2019, 2 SWS, Open in study portal   **Lecture (V)**

Learning Content
The content of this course concentrates on the four elements of the marketing mix. Therefore the four main chapters are:

- Product management
- Pricing
- Promotion
- Sales management

Annotation
For further information please contact Marketing & Sales Research Group (marketing.iism.kit.edu).

Workload
The total workload for this course is approximately 135.0 hours. For further information see German version.

T   6.91 Course: Mathematics I for Information Engineering and Management - Exam [T-MATH-102266]

Responsible: Prof. Dr. Andreas Rieder
                   Dr. Daniel Weiß
                   Prof. Dr. Christian Wieners
Organisation: KIT Department of Mathematics
Part of: M-MATH-101311 - Mathematik I

Type	Credits	Version
Prüfungsleistung schriftlich	7	1

Events					
WS 18/19	0136000	**Mathematik I für die Fachrichtung Informationswirtschaft**	4 SWS	Lecture (V)	Weiß
Exams					
WS 18/19	6700033	**Mathematics I for Information Engineering and Management - Exam**		Prüfung (PR)	Weiß

T   6.92 Course: Mathematics I for Information Engineering and Management - Exercise [T-MATH-102267]

Responsible:	Prof. Dr. Andreas Rieder
	Dr. Daniel Weiß
	Prof. Dr. Christian Wieners
Organisation:	KIT Department of Mathematics
Part of:	M-MATH-101311 - Mathematik I

Type	Credits	Version
Prüfungsleistung schriftlich	1	1

Events					
WS 18/19	0136100	Übungen zu 0136000	2 SWS	Practice (Ü)	Weiß
Exams					
WS 18/19	6700010	Mathematics I for Information Engineering and Management - Exercise	Prüfung (PR)	Weiß	

T 6.93 Course: Mathematics II for Information Engineering and Management - Exam [T-MATH-102269]

Responsible:	Prof. Dr. Andreas Rieder
	Dr. Daniel Weiß
	Prof. Dr. Christian Wieners
Organisation:	KIT Department of Mathematics
Part of:	M-MATH-101312 - Mathematik II

Type	Credits	Version
Prüfungsleistung schriftlich	7	1

Events					
SS 2019	0187700	Mathematik II für Informationswirtschaft	4 SWS	Lecture (V)	Weiß
Exams					
WS 18/19	00022	Mathematics II for Information Engineering and Management - Exam		Prüfung (PR)	Weiß

T 6.94 Course: Mathematics II for Information Engineering and Management - Exercise [T-MATH-102268]

Responsible:	Prof. Dr. Andreas Rieder
	Dr. Daniel Weiß
	Prof. Dr. Christian Wieners
Organisation:	KIT Department of Mathematics
Part of:	M-MATH-101312 - Mathematik II

Type Prüfungsleistung schriftlich	**Credits** 1	**Version** 1

Events					
SS 2019	0187800	Übungen zu 0187700	2 SWS	Practice (Ü)	Weiß

T 6.95 Course: Mechanisms and Applications of Workflow Systems [T-INFO-101257]

Responsible: Jutta Mülle

Organisation: KIT Department of Informatics

Part of: M-INFO-101193 - Grundlagen von Informationssystemen
M-INFO-101193 - Grundlagen von Informationssystemen
M-INFO-101235 - Grundlagen des Daten- und Informationsmanagements
M-INFO-102060 - Weitere Leistungen

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	5	Each winter term	1

Events					
WS 18/19	24111	Konzepte und Anwendungen von Workflowsystemen	3 SWS	Lecture (V)	Mülle
Exams					
WS 18/19	7500089	Mechanisms and Applications of Workflow Systems		Prüfung (PR)	Böhm, Mülle

T   6.96 Course: Mechano-Informatics and Robotics [T-INFO-101294]

Responsible:	Prof. Dr.-Ing. Tamim Asfour
Organisation:	KIT Department of Informatics
Part of:	M-INFO-100757 - Mechano-Informatik in der Robotik
	M-INFO-102060 - Weitere Leistungen

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	4	Each winter term	1

Events					
WS 18/19	2400077	Mechano-Informatics and Robotics	2 SWS	Lecture (V)	Asfour, Kaul
Exams					
WS 18/19	7500176	Mechano-Informatics and Robotics		Prüfung (PR)	Asfour

Below you will find excerpts from events related to this course:

V	**Mechano-Informatics and Robotics**	Lecture (V)
	2400077, WS 18/19, 2 SWS, Open in study portal	

Learning Content

The lecture addresses various engineering and algorithmic aspects and topics in robotics which are illustrated and explained based on examples originating from current research conducted in the field of humanoid robotics. First, this lecture gives an introduction into the mathematical fundamentals which are needed to describe a robotic system as well as the basic algorithms commonly applied in motion planning.

Subsequently, models and methods are introduced with which dynamical systems can be formalized and which can be used to encode and represent robot actions. To do so, we will discuss linear time-invariant systems in state.

T · 6.97 Course: Mobile Computing and Internet of Things [T-INFO-102061]

Responsible: Prof. Dr.-Ing. Michael Beigl
Organisation: KIT Department of Informatics
Part of: M-INFO-101249 - Mobile Computing und Internet der Dinge
M-INFO-102060 - Weitere Leistungen

Type Prüfungsleistung mündlich	Credits 5	Recurrence Each winter term	Version 1

Events					
WS 18/19	2400051	Mobile Computing and Internet of Things	2+1 SWS	Lecture / Practice (VÜ)	Beigl
Exams					
WS 18/19	7500184	Mobile Computing and Internet of Things		Prüfung (PR)	Beigl
SS 2019	7500107	Mobile Computing and Internet of Things		Prüfung (PR)	Beigl

Below you will find excerpts from events related to this course:

V	**Mobile Computing and Internet of Things** 2400051, WS 18/19, 2+1 SWS, Open in study portal	**Lecture / Practice (VÜ)**

Notes
Lecture: Tue: 9:45-11:15. Exercise will be Tue 8:00-9:30. FIRST EXERCISE WILL BE ANNOUNCED. NO EXERCISE on Tue Oct, 17.

Literature
Wird in der Vorlesung bekannt gegeben

T 6.98 Course: Modeling and OR-Software: Introduction [T-WIWI-106199]

Responsible:	Prof. Dr. Stefan Nickel
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101413 - Anwendungen des Operations Research

Type Prüfungsleistung anderer Art	Credits 4,5	Recurrence Each summer term	Version 1

Events					
SS 2019	2550490	Modellieren und OR-Software: Einführung	3 SWS	Practical course (P)	Nickel, Bakker

Competence Certificate
The assessment is a 120 minutes examination, including a written and a practical part (according to §4(2), 1 of the examination regulation).

The examination is held in the term of the software laboratory and the following term.

Prerequisites
None

Recommendation
Firm knowledge of the contents from the lecture*Introduction to Operations Research I*[2550040] of the module*Operations Research*[WW1OR].

Annotation
Due to capacity restrictions, registration before course start is required. For further information see the webpage of the course.

The lecture is offered in every term. The planned lectures and courses for the next three years are announced online.

Below you will find excerpts from events related to this course:

V Modellieren und OR-Software: Einführung
2550490, SS 2019, 3 SWS, Open in study portal

Practical course (P)

Learning Content
The task of solving combinatorial and nonlinear optimization problems imposes much higher requirements on suggested solution approaches as in linear programming.

During the course of this software laboratory, students get to know important methods from combinatorial optimization, e.g. Branch & Cut- or Column Generation methods and are enabled to solve problems with the software system IBM ILOG CPLEX Optimization Studio and the corresponding modeling language OPL. In addition, issues of nonlinear optimization, e.g. quadratic optimization, are addressed. As an important part of the software laboratory, students get the possibility to model combinatorial and nonlinear problems and implement solution approaches in the software system.

The software laboratory also introduces some of the most frequently used modelling and programming languages that are used in practice to solve optimization problems.

Annotation
Due to capacity restrictions, registration before course start is required. For further information see the webpage of the course.

The lecture is held irregularly. The planned lectures and courses for the next three years are announced online.

Workload
The total workload for this course is approximately 135.0 hours. For further information see German version.

T 6.99 Course: Nonlinear Optimization I [T-WIWI-102724]

Responsible:	Prof. Dr. Oliver Stein
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101936 - Methodische Grundlagen des OR
	M-WIWI-103337 - Optimierung unter Unsicherheit

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	4,5	Each winter term	3

Events					
WS 18/19	2550111	Nichtlineare Optimierung I	2 SWS	Lecture (V)	Stein
WS 18/19	2550112	Übungen zu Nichtlineare Optimierung I + II	SWS	Practice (Ü)	Stein, Mohr
WS 18/19	2550142	Rechnerübung zu Nichtlineare Optimierung I + II	SWS	Practice (Ü)	Stein, Mohr
Exams					
WS 18/19	7900002_HK_WS1819	Nonlinear Optimization I		Prüfung (PR)	Stein

Competence Certificate

The assessment consits of a written exam (60 minutes) according to Section 4(2), 1 of the examination regulation and possibly of a compulsory prerequisite.

The exam takes place in the semester of the lecture and in the following semester.

The examination can also be combined with the examination of *Nonlinear Optimization II* [2550113]. In this case, the duration of the written examination takes 120 minutes.

Prerequisites

The module component exam T-WIWI-103637 "Nonlinear Optimization I and II" may not be selected.

Modeled Conditions

The following conditions have to be fulfilled:

1. The course T-WIWI-103637 - Nonlinear Optimization I and II must not have been started.

Annotation

Part I and II of the lecture are held consecutively in the *same* semester.

Below you will find excerpts from events related to this course:

V	**Nichtlineare Optimierung I**	Lecture (V)
	2550111, WS 18/19, 2 SWS, Open in study portal	

Learning Content
The lecture treats the minimization of smooth nonlinear functions under nonlinear constraints. For such problems, which occur very often in economics, engineering, and natural sciences, we derive optimality conditions that form the basis for numerical solution methods. The lecture is structured as follows:

- Introduction, examples, and terminology
- Existence results for optimal points
- First and second order optimality condtions for unconstrained problems
- Optimality conditions for unconstrained convex problems
- Numerical methods for unconstrained problems (line search, steepest descent method, variable metric methods, Newton method, Quasi Newton methods, CG method, trust region method)

Constrained problems are the contents of part II of the lecture.

The lecture is accompanied by computer exercises in which you can learn the programming language MATLAB and implement and test some of the methods for practically relevant examples.

Annotation
Part I and II of the lecture are held consecutively in the *same* semester.

Literature
Elective literature:

- W. Alt, Nichtlineare Optimierung, Vieweg, 2002
- M.S. Bazaraa, H.D. Sherali, C.M. Shetty, Nonlinear Programming, Wiley, 1993
- O. Güler, Foundations of Optimization, Springer, 2010
- H.Th. Jongen, K. Meer, E. Triesch, Optimization Theory, Kluwer, 2004
- J. Nocedal, S. Wright, Numerical Optimization, Springer, 2000

T 6.100 Course: Nonlinear Optimization I and II [T-WIWI-103637]

Responsible:	Prof. Dr. Oliver Stein
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101936 - Methodische Grundlagen des OR

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	9	Each winter term	5

Events					
WS 18/19	2550111	Nichtlineare Optimierung I	2 SWS	Lecture (V)	Stein
WS 18/19	2550112	Übungen zu Nichtlineare Optimierung I + II	SWS	Practice (Ü)	Stein, Mohr
WS 18/19	2550113	Nichtlineare Optimierung II	2 SWS	Lecture (V)	Stein
WS 18/19	2550142	Rechnerübung zu Nichtlineare Optimierung I + II	SWS	Practice (Ü)	Stein, Mohr
Exams					
WS 18/19	7900151_HK_WS1819	Nonlinear Optimization I and II		Prüfung (PR)	Stein

Competence Certificate
The assessment consits of a written exam (120 minutes) according to Section 4(2), 1 of the examination regulation and possibly of a compulsory prerequisite.

The exam takes place in the semester of the lecture and in the following semester.

Prerequisites
None.

Modeled Conditions
The following conditions have to be fulfilled:

1. The course T-WIWI-102724 - Nonlinear Optimization I must not have been started.
2. The course T-WIWI-102725 - Nonlinear Optimization II must not have been started.

Annotation
Part I and II of the lecture are held consecutively in the **same** semester.

Below you will find excerpts from events related to this course:

V	**Nichtlineare Optimierung I**	Lecture (V)
	2550111, WS 18/19, 2 SWS, Open in study portal	

Learning Content
The lecture treats the minimization of smooth nonlinear functions under nonlinear constraints. For such problems, which occur very often in economics, engineering, and natural sciences, we derive optimality conditions that form the basis for numerical solution methods. The lecture is structured as follows:

- Introduction, examples, and terminology
- Existence results for optimal points
- First and second order optimality condtions for unconstrained problems
- Optimality conditions for unconstrained convex problems
- Numerical methods for unconstrained problems (line search, steepest descent method, variable metric methods, Newton method, Quasi Newton methods, CG method, trust region method)

Constrained problems are the contents of part II of the lecture.

The lecture is accompanied by computer exercises in which you can learn the programming language MATLAB and implement and test some of the methods for practically relevant examples.

Annotation
Part I and II of the lecture are held consecutively in the*same*semester.

Literature
Elective literature:

- W. Alt, Nichtlineare Optimierung, Vieweg, 2002
- M.S. Bazaraa, H.D. Sherali, C.M. Shetty, Nonlinear Programming, Wiley, 1993
- O. Güler, Foundations of Optimization, Springer, 2010
- H.Th. Jongen, K. Meer, E. Triesch, Optimization Theory, Kluwer, 2004
- J. Nocedal, S. Wright, Numerical Optimization, Springer, 2000

V	**Nichtlineare Optimierung II** 2550113, WS 18/19, 2 SWS, **Open in study portal**	**Lecture (V)**

Learning Content
The lecture treats the minimization of smooth nonlinear functions under nonlinear constraints. For such problems, which occur very often in economics, engineering, and natural sciences, we derive optimality conditions that form the basis for numerical solution methods. Part I of the lecture treats unconstrained optimization problems. Part II of the lecture is structured as follows:

- Topology and first order approximations of the feasible set
- Theorems of the alternative, first and second order optimality conditions for constrained problems
- Optimality conditions for constrained convex problems
- Numerical methods for constrained problems (penalty method, multiplier method, barrier method, interior point method, SQP method, quadratic optimization)

The lecture is accompanied by computer exercises in which you can learn the programming language MATLAB and implement and test some of the methods for practically relevant examples.

Annotation
Part I and II of the lecture are held consecutively in the*same*semester.

Literature
Elective literature:

- W. Alt, Nichtlineare Optimierung, Vieweg, 2002
- M.S. Bazaraa, H.D. Sherali, C.M. Shetty, Nonlinear Programming, Wiley, 1993
- O. Güler, Foundations of Optimization, Springer, 2010
- H.Th. Jongen, K. Meer, E. Triesch, Optimization Theory, Kluwer, 2004
- J. Nocedal, S. Wright, Numerical Optimization, Springer, 2000

T 6.101 Course: Nonlinear Optimization II [T-WIWI-102725]

Responsible:	Prof. Dr. Oliver Stein
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101936 - Methodische Grundlagen des OR

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	4,5	Each winter term	2

Events					
WS 18/19	2550112	Übungen zu Nichtlineare Optimierung I + II	SWS	Practice (Ü)	Stein, Mohr
WS 18/19	2550113	Nichtlineare Optimierung II	2 SWS	Lecture (V)	Stein
Exams					
WS 18/19	7900050_HK_WS1819	Nonlinear Optimization II		Prüfung (PR)	Stein

Competence Certificate
The assessment consits of a written exam (60 minutes) according to Section 4(2), 1 of the examination regulation and possibly of a compulsory prerequisite.
The exam takes place in the semester of the lecture and in the following semester.

The exam can also be combined with the examination of *Nonlinear OptimizationI* [2550111]. In this case, the duration of the written exam takes 120 minutes.

Prerequisites
None.

Modeled Conditions
The following conditions have to be fulfilled:

1. The course T-WIWI-103637 - Nonlinear Optimization I and II must not have been started.

Annotation
Part I and II of the lecture are held consecutively in the same semester.

Below you will find excerpts from events related to this course:

V Nichtlineare Optimierung II
2550113, WS 18/19, 2 SWS, Open in study portal

Lecture (V)

Learning Content
The lecture treats the minimization of smooth nonlinear functions under nonlinear constraints. For such problems, which occur very often in economics, engineering, and natural sciences, we derive optimality conditions that form the basis for numerical solution methods. Part I of the lecture treats unconstrained optimization problems. Part II of the lecture is structured as follows:

• Topology and first order approximations of the feasible set
• Theorems of the alternative, first and second order optimality conditions for constrained problems
• Optimality conditions for constrained convex problems
• Numerical methods for constrained problems (penalty method, multiplier method, barrier method, interior point method, SQP method, quadratic optimization)

The lecture is accompanied by computer exercises in which you can learn the programming language MATLAB and implement and test some of the methods for practically relevant examples.

Annotation
Part I and II of the lecture are held consecutively in the *same* semester.

Literature
Elective literature:

- W. Alt, Nichtlineare Optimierung, Vieweg, 2002
- M.S. Bazaraa, H.D. Sherali, C.M. Shetty, Nonlinear Programming, Wiley, 1993
- O. Güler, Foundations of Optimization, Springer, 2010
- H.Th. Jongen, K. Meer, E. Triesch, Optimization Theory, Kluwer, 2004
- J. Nocedal, S. Wright, Numerical Optimization, Springer, 2000

T 6.102 Course: Operative CRM [T-WIWI-102597]

Responsible:	Prof. Dr. Andreas Geyer-Schulz
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101422 - Vertiefung im Customer Relationship Management
	M-WIWI-101460 - CRM und Servicemanagement

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	4,5	Each winter term	1

Events					
WS 18/19	2540522	Operative CRM	2 SWS	Lecture (V)	Geyer-Schulz
WS 18/19	2540523	Übung Operatives CRM	1 SWS	Practice (Ü)	Schweigert
Exams					
WS 18/19	7900145	Operative CRM		Prüfung (PR)	Geyer-Schulz

Competence Certificate
Written examination (60 minutes) according to §4(2), 1 SPO. The exam is considered passed if at least 50 out of a maximum of 100 possible points are achieved. The grades are graded in five steps (best grade 1.0 from 95 points). Details of the grade formation and scale will be announced in the course.

A bonus can be acquired through successful participation in the practice. If the grade of the written examination is between 4.0 and 1.3, the bonus improves the grade by one grade level (0.3 or 0.4). The exact criteria for awarding a bonus will be announced at the beginning of the course.

Prerequisites
None

Recommendation
The attendance of courses Customer Relationship Management and Analytical CRM is advised.

Below you will find excerpts from events related to this course:

V Operative CRM
2540522, WS 18/19, 2 SWS, Open in study portal   Lecture (V)

Learning Content
The Student should be able to understand and implement methods and applications within the operative CRM. This includes, but is not limited to the analysis of business processes, as a basis for improvements in CRM, and applications like call centers.

Workload
The total workload for this course is approximately 135 hours (4.5 credits):

Time of attendance

- Attending the lecture: 15 x 90min = 22h 30m
- Attending the exercise classes: 7 x 90min = 10h 30m
- Examination: 1h 00m

Self-study

- Preparation and wrap-up of the lecture: 15 x 180min = 45h 00m
- Preparing the exercises: 25h 00m
- Preparation of the examination: 31h 00m

Sum: 135h 00m

Literature

Jill Dyché. The CRM Handbook: A Business Guide to Customer Relationship Management. Addison-Wesley, Boston, 2 edition, 2002.

Ronald S. Swift. Accelerating Customer Relationships: Using CRM and RelationshipTechnologies. Prentice Hall, Upper Saddle River, 2001.

Elective literature:

Alex Berson, Kurt Thearling, and Stephen J. Smith. Building Data Mining Applications for CRM. Mc Graw-Hill, New York, 2000.

Stanley A. Brown. Customer Relationship Management: A Strategic Imperative in theWorld of E-Business. John Wiley, Toronto, 2000.

Dimitris N. Chorafas. Integrating ERP, CRM, Supply Chain Management, and SmartMaterials. Auerbach Publications, Boca Raton, Florida, 2001.

Keith Dawson. Call Center Handbook: The Complete Guide to Starting, Running, and Improving Your Call Center. CMP Books, Gilroy, CA, 4 edition, 2001.

Andreas Eggert and Georg Fassot. eCRM – Electronic Customer Relationship Management: Anbieter von CRM-Software im Vergleich. Schäffer-Poeschel, Stuttgart, 2001.

Seth Godin. Permission Marketing. Kunden wollen wählen können. FinanzBuch Verlag, München, 1999.

Paul Greenberg. CRM at the Speed of Light: Capturing and Keeping Customers in Internet Real Time. Osborne/McGraw-Hill, 3rd ed. edition, Aug 2004.

Philip Kotler. Marketing Management: Millennium Edition. Prentice Hall, Upper Saddle River, 10 edition, 2000.

Don Peppers and Martha Rogers. The One To One Future. Currency Doubleday, New York, 1997.

Duane E. Sharp. Customer Relationship Management Systems Handbook. Auerbach, 2002.

Len Silverston. The Data Model Resource Book: A Library of Universal Data Models for All Entrepises, volume 1. John Wiley & Sons, 2001.

Toby J. Teorey. Database Modeling and Design. Morgan Kaufmann, San Francisco, 3 edition, 1999.

Chris Todman. Designing a Data Warehouse : Supporting Customer Relationship Management. Prentice Hall, Upper Saddle River, 1 edition, 2001.

T 6.103 Course: Optimization under Uncertainty [T-WIWI-106545]

Responsible: Prof. Dr. Steffen Rebennack
Organisation: KIT Department of Economics and Management
Part of: M-INFO-102060 - Weitere Leistungen
M-WIWI-101413 - Anwendungen des Operations Research

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	5	Irregular	1

Events					
WS 18/19	2550464	Optimierungsansätze unter Unsicherheit	SWS	Lecture (V)	Sinske
WS 18/19	2550465	Übungen zu Optimierungsansätze unter Unsicherheit	SWS	Practice (Ü)	Füllner
WS 18/19	2550466	Rechnerübungen zu Optimierungsansätze unter Unsicherheit	2 SWS	Practice (Ü)	Füllner
Exams					
WS 18/19	7900158	Optimization under uncertainty		Prüfung (PR)	Rebennack

Competence Certificate

The assessment consists of a written exam (60 minutes) according to Section 4(2), 1 of the examination regulation. The exam takes place in every the semester.

Prerequisites

None.

T　6.104 Course: Personnel Policies and Labor Market Institutions [T-WIWI-102908]

Responsible:	Prof. Dr. Petra Nieken
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101513 - Personal und Organisation
	M-WIWI-101668 - Wirtschaftspolitik I

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	4,5	Each summer term	1

Events					
SS 2019	2573001	Personnel Policies and Labor Market Institutions	2 SWS	Lecture (V)	Nieken
SS 2019	2573002	Übungen zu Personalpolitik und Arbeitsmarktinstitutionen	1 SWS	Practice (Ü)	Nieken, Mitarbeiter
Exams					
WS 18/19	7900202	Personnel Policies and Labor Market Institutions		Prüfung (PR)	Nieken

Competence Certificate
The assessment of this course is a written examination (60 min) according to §4(2), 1 of the examination regulation. The exam takes place in every semester. Re-examinations are offered at every ordinary examination date.
In case of a small number of registrations, we might offer an oral exam instead of a written exam.

Prerequisites
None

Recommendation
Completion of module Business Administration is recommended.
Basic knowledge of microeconomics, game theory, and statistics is recommended.

Below you will find excerpts from events related to this course:

V　Personnel Policies and Labor Market Institutions
2573001, SS 2019, 2 SWS, Open in study portal　　　　　　　　　Lecture (V)

Learning Content
The students acquire knowledge about the process and the strategic aspects of collective bargaining about wages. They analyze selected aspects of corporate governance and co-determination in Germany. The lecture also addresses questions of personnel politics and issue of labor market discrimination. Microeconomic and behavioral approaches as well as empirical data is used and evaluated critically.

Annotation
Is carried out routinely in summer.

Workload
The total workload for this course is approximately 135 hours.

Lecture 32h
Preparation of lecture 52h
Exam preparation 51h

Literature
Arbeitsmarktökonomik, W. Franz, Springer, 2013

T 6.105 Course: Platform Economy [T-WIWI-107506]

Responsible:	Tim Straub
	Prof. Dr. Christof Weinhardt
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101421 - Supply Chain Management

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	4,5	Each winter term	1

Exams				
WS 18/19	7900213	**Platform Economy**	Prüfung (PR)	Weinhardt
WS 18/19	7900214	**Platform Economy**	Prüfung (PR)	Weinhardt

Competence Certificate
The assessment consists of a written exam (60 min.) according to § 4 paragraph 2 Nr. 1 of the examination regulation. Details of the grades will be announced at the beginning of the course.

Prerequisites
None

Recommendation
None

Annotation
New course starting winter term 2017/2018.

T	6.106 Course: Platform Economy [T-WIWI-109936]

Responsible:	Prof. Dr. Christof Weinhardt
Organisation:	KIT Department of Economics and Management
Part of:	M-WIWI-101434 - eBusiness und Service Management

Type Prüfungsleistung schriftlich	**Credits** 4,5	**Recurrence** Each winter term	**Version** 3

Competence Certificate

The assessment consists of a written exam (60 min.) according to § 4 paragraph 2 Nr. 1 of the examination regulation. Details of the grades will be announced at the beginning of the course.

Prerequisites

see below

Modeled Conditions

The following conditions have to be fulfilled:

1. The course T-WIWI-107506 - Platform Economy must not have been started.

Recommendation

None

T 6.107 Course: Practical Course: Lego Mindstorms [T-INFO-107502]

Responsible:	Prof. Dr.-Ing. Tamim Asfour
Organisation:	KIT Department of Informatics
Part of:	M-INFO-102060 - Weitere Leistungen
	M-INFO-102557 - Lego Mindstorms - Basispraktikum

Type	Credits	Recurrence	Version
Studienleistung	4	Each winter term	1

Events					
WS 18/19	24306	Lego Mindstorms - Laboratory	2 SWS	Practical course (P)	Asfour, Beil, Ottenhaus, Weiner, Grotz, Starke
Exams					
WS 18/19	7500179	Lego Mindstorms - Practical Course		Prüfung (PR)	Asfour

Recommendation

Basic knowledge in JAVA is necessary for successful completion of this course.

Below you will find excerpts from events related to this course:

V Lego Mindstorms - Laboratory
24306, WS 18/19, 2 SWS, Open in study portal   **Practical course (P)**

Learning Content

In this practical course, teams of three students build and program a mobile robot using Lego Mindstorms and the Java programming language. The robots are challenged to complete a versatile parkour including sections like the traversal of a maze, following a line, crossing a bridge or avoiding obstacle. After initial building of the robots, a section of the parkour will be set up each week and tackled by the robots, for which the students have to prepare their code beforehand. A final race of the robots on the entire parkour will be held at the end of the semester.

Workload

120 h

T 6.108 Course: Practical Seminar Digital Services [T-WIWI-105711]

Responsible:	Prof. Dr. Wolf Fichtner
	Prof. Dr. Alexander Mädche
	Prof. Dr. Stefan Nickel
	Prof. Dr. Gerhard Satzger
	Prof. Dr. York Sure-Vetter
	Prof. Dr. Christof Weinhardt
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-102752 - Fundamentals of Digital Service Systems

Type	**Credits**	**Recurrence**	**Version**
Prüfungsleistung anderer Art	4,5	Each summer term	1

Competence Certificate

The assessment consists of a seminar paper, a presentation of the results and the contribution to the discussion (according to §4(2), 3 of the examination regulation). The final grade is based on the evaluation of each component (seminar paper, oral presentation, and active participation).

Prerequisites

None

Recommendation

None

Annotation

The current range of seminar topics is announced on the KSRI website www.ksri.kit.edu.

T 6.109 Course: Problem Solving, Communication and Leadership [T-WIWI-102871]

Responsible:	Prof. Dr. Hagen Lindstädt
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101425 - Strategie und Organisation
	M-WIWI-101513 - Personal und Organisation

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	2	Each summer term	1

Events					
SS 2019	2577910	**Problem solving, communication and leadership**	1 SWS	Lecture (V)	Lindstädt
Exams					
WS 18/19	7900069	**Problem Solving, Communication and Leadership**		Prüfung (PR)	Lindstädt

Competence Certificate
The assessment consists of a written exam (30 minutes) (following §4(2), 1 of the examination regulation). The exam takes place in every semester. Re-examinations are offered at every ordinary examination date.

Prerequisites
None

Below you will find excerpts from events related to this course:

V Problem solving, communication and leadership
2577910, SS 2019, 1 SWS, Open in study portal   Lecture (V)

Learning Content
The course deals with various aspects of problem solving and communication processes and is divided into two parts. The first part of the course addresses the fundamental steps in the problem-solving process; namely, problem identification, problem structuring, problem analysis and communication of solution. Ideas for structuring problem solving processes will be discussed and the perquisites for and principles of structured communication based on charts and presentations will be explained. The second part of the course addresses important concepts in leadership, including the context-specificity of influence, the choice of leader and the characteristics of employees. The course content reflects current issues in management and communication practice and is oriented toward the practical application of theoretical insights to these issues. In this respect, the course aims to develop interdisciplinary skills.

Workload
The total workload for this course is approximately 60 hours. For further information see German version.

Literature
The relevant excerpts and additional sources are made known during the course.

T 6.110 Course: Process Mining [T-WIWI-109799]

Responsible:	Prof. Dr. Andreas Oberweis
Organisation:	KIT Department of Economics and Management
Part of:	M-WIWI-101476 - Geschäftsprozesse und Informationssysteme

Type Prüfungsleistung schriftlich	Credits 5	Recurrence Each summer term	Version 1

Events					
SS 2019	2511204	**Process Mining**	2 SWS	Lecture (V)	Oberweis
SS 2019	2511205	**Exercise Process Mining**	1 SWS	Practice (Ü)	Oberweis, Ullrich
Exams					
SS 2019	7900048	**Process Mining**		Prüfung (PR)	Oberweis

Competence Certificate
The assessment of this course is a written examination (60 min) according to §4(2), 1 of the examination regulation in the first week after lecture period.

Prerequisites
None

Modeled Conditions
The following conditions have to be fulfilled:

1. The course T-WIWI-102662 - Workflow-Management must not have been started.

Annotation
Former name (up to winter semester 2018/1019) "Workflow Management".

Below you will find excerpts from events related to this course:

V Process Mining
2511204, SS 2019, 2 SWS, Open in study portal

Lecture (V)

Learning Content
The area of process mining covers approaches which aim at deducting new knowledge on the basis of logfiles generated by information systems. Such information systems are e.g., workflow-management-systems which are used for an efficient control of processes in enterprises and organisations. The lecture introduces the foundations of processes and respective modeling and analysis techniques. In the following, the foundations of process mining and the three classical types of approaches - discovery, conformance and enhancement - will be taught. In addition to the theoretical basics, tools, application scenarios in practice and open research questions are covered as well.

Workload
Lecture 30h
Exercise 15h

Preparation of lecture 30h
Preparation of exercises 30h
Exam preparation 44h
Exam 1h

Total: 150h

Literature

- W. van der Aalst, H. van Kees: Workflow Management: Models, Methods and Systems, Cambridge, The MIT Press, 2002.
- W. van der Aalst: Process Mining: Data Science in Action. Springer, 2016.
- J. Carmona, B. van Dongen, A. Solti, M. Weidlich: Conformance Checking: Relating Processes and Models. Springer, 2018.
- A. Drescher, A. Koschmider, A. Oberweis: Modellierung und Analyse von Geschäftsprozessen: Grundlagen und Übungsaufgaben mit Lösungen. De Gruyter Studium, 2017.
- A. Oberweis: Modellierung und Ausführung von Workflows mit Petri-Netzen. Teubner-Reihe Wirtschaftsinformatik, B.G. Teubner Verlag, 1996.
- R. Peters, M. Nauroth: Process-Mining: Geschäftsprozesse: smart, schnell und einfach, Springer, 2019.
- F. Schönthaler, G.Vossen, A. Oberweis, T. Karle: Business Processes for Business Communities: Modeling Languages, Methods, Tools. Springer, 2012.
- M. Weske: Business Process Management: Concepts, Languages, Architectures. Springer, 2012.
-
Further literature is given in the lecture.

T 6.111 Course: Production Economics and Sustainability [T-WIWI-102820]

Responsible:	Dr. Jérémy Rimbon
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101437 - Industrielle Produktion I

Type Prüfungsleistung schriftlich	**Credits** 3,5	**Recurrence** Each winter term	**Version** 1

Events					
WS 18/19	2581960	Production Economics and Sustainability	2 SWS	Lecture (V)	Rimbon
Exams					
WS 18/19	7981960	Production Economics and Sustainability		Prüfung (PR)	Schultmann

Competence Certificate
The assessment consists of an oral (30 minutes) or a written (60 minutes) exam (following §4(2), 1 of the examination regulation). The exam takes place in every semester. Re-examinations are offered at every ordinary examination date.

Below you will find excerpts from events related to this course:

V Production Economics and Sustainability
2581960, WS 18/19, 2 SWS, Open in study portal   **Lecture (V)**

Learning Content
The analysis and management of material flows on the company level and above will be the focus of this lecture. Herein, the discussion will be about cost-effective and environmentally acceptable steps to avoid, abate and recycle emissions and waste as well as ways of efficient resources handling. As methods material flow analysis (MFA), life cycle assessment (LCA) and OR methods, e.g. for decision support, are introduced.

Topics:
- regulations related to materials and substances
- raw materials, reserves and their availabilities/lifetimes
- material and substance flow analysis (MFA/SFA)
- material related ecoprofiles, e.g. Carbon Footprint
- LCA
- resource efficiency
- emission abatement
- waste management and closed-loop recycling
- raw material oriented production systems
- environmental management (EMAS, ISO 14001, Ecoprofit), eco-controlling

Workload
Total effort required will account for approximately 105h (3.5 credits).

Literature
will be announced in the course

T   6.112 Course: Programming [T-INFO-101531]

Responsible:	Prof. Dr.-Ing. Anne Koziolek
	Prof. Dr. Ralf Reussner
Organisation:	KIT Department of Informatics
Part of:	M-INFO-101174 - Programmieren
	M-WIWI-101528 - Orientierungsprüfung

Type	**Credits**	**Recurrence**	**Version**
Prüfungsleistung anderer Art	5	Each winter term	1

Events					
WS 18/19	24004	**Programming**	4 SWS	Lecture / Practice (VÜ)	Reussner
Exams					
WS 18/19	7500075	**Programming**		Prüfung (PR)	Reussner
SS 2019	7500195	**Programming**		Prüfung (PR)	Reussner

Modeled Conditions

The following conditions have to be fulfilled:

1. The course **T-INFO-101967 - Programming Pass** must have been passed.

T 6.113 Course: Programming Pass [T-INFO-101967]

Responsible: Prof. Dr.-Ing. Anne Koziolek
Prof. Dr. Ralf Reussner

Organisation: KIT Department of Informatics

Part of: M-INFO-101174 - Programmieren
M-WIWI-101528 - Orientierungsprüfung

Type Studienleistung	Credits 0	Recurrence Each term	Version 1

Events					
WS 18/19	24004	**Programming**	4 SWS	Lecture / Practice (VÜ)	Reussner
Exams					
WS 18/19	7500074	**Programming Pass**		Prüfung (PR)	Reussner
SS 2019	7500022	**Programming Pass**		Prüfung (PR)	Reussner

T 6.114 Course: Project Management in Practice [T-INFO-101976]

Responsible:	Prof. Dr.-Ing. Klemens Böhm
Organisation:	KIT Department of Informatics
Part of:	M-INFO-101193 - Grundlagen von Informationssystemen
	M-INFO-101235 - Grundlagen des Daten- und Informationsmanagements
	M-INFO-102060 - Weitere Leistungen

Type	Credits	Recurrence	Version
Studienleistung	1,5	Irregular	1

Events					
SS 2019	2400019	Project Management in Practice	2 SWS	Lecture (V)	Böhm, Schnober

Below you will find excerpts from events related to this course:

V Project Management in Practice
2400019, SS 2019, 2 SWS, Open in study portal

Lecture (V)

Learning Content

- General project conditions
- Project goals / creative methods for identifying project goals and priorities
- Project planning
- Activity planning
- Cost/time/resource planning
- Phase models
- Risk management
- Project control / success control / monitoring
- Crisis management
- Project termination / lessons learned

T   6.115 Course: Public Law I - Basic Principles [T-INFO-101963]

Responsible:	Prof. Dr. Nikolaus Marsch
Organisation:	KIT Department of Informatics
Part of:	M-INFO-101192 - Verfassungs- und Verwaltungsrecht

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	3	Each term	2

Events					
WS 18/19	24016	Öffentliches Recht I - Grundlagen	2 SWS	Lecture (V)	Marsch
Exams					
WS 18/19	7500051	Public Law I - Basic Principles		Prüfung (PR)	Marsch
SS 2019	7500100	Public Law I - Basic Principles		Prüfung (PR)	Marsch

T 6.116 Course: Public Law II [T-INFO-102042]

Responsible: Prof. Dr. Nikolaus Marsch
Organisation: KIT Department of Informatics
Part of: M-INFO-101192 - Verfassungs- und Verwaltungsrecht

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	3	Each term	1

Events					
SS 2019	24520	Öffentliches Recht II - Öffentliches Wirtschaftsrecht	2 SWS	Lecture (V)	Marsch
Exams					
WS 18/19	7500052	Public Law II		Prüfung (PR)	Marsch
SS 2019	7500081	Public Law II		Prüfung (PR)	Marsch

T 6.117 Course: Public Revenues [T-WIWI-102739]

Responsible: Prof. Dr. Berthold Wigger
Organisation: KIT Department of Economics and Management
Part of: M-INFO-102060 - Weitere Leistungen
M-WIWI-101403 - Finanzwissenschaft
M-WIWI-101499 - Angewandte Mikroökonomik
M-WIWI-101668 - Wirtschaftspolitik I

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	4,5	Each summer term	1

Events					
SS 2019	2560120	Public Revenues	2 SWS	Lecture (V)	Wigger
SS 2019	2560121	Übung zu Öffentliche Einnahmen	1 SWS	Practice (Ü)	Wigger
Exams					
WS 18/19	790oeff	Public Revenues		Prüfung (PR)	Wigger
SS 2019	790oeff	Public Revenues		Prüfung (PR)	Wigger

Competence Certificate
The assessment consists of an 1h written exam following Art. 4, para. 2, clause 1 of the examination regulation. The grade for this course equals the grade of the written exam.

Prerequisites
None

Recommendation
Basic knowledge of Public Finance is required.

Below you will find excerpts from events related to this course:

V Public Revenues
2560120, SS 2019, 2 SWS, Open in study portal

Lecture (V)

Description
The *Public Revenues* lecture is concerned with the theory and policy of taxation and public dept. In the first chapter, fundamental concepts of taxation theory are introduced, whereas the second chapter deals with key elements of the German taxation system. The allocative and distributive effects of different taxation types are examined in chapter three and four. Chapter five integrates both allocative and distributive components in order to derive a theory of optimal taxation. The core of the sixth chapter is represented by international aspects of taxation. The debt part begins with a description of the extent and structure of public dept in chapter seven. In the following chapter, macroeconomic theories of national dept are evolved, while chapter nine is concerned with its long term consequences when employed as a regular instrument of budgeting. Finally, the tenth chapter deals with constitutional limits to public debt-incurring.

Learning Content
The *Public Revenues* lecture is concerned with the theory and policy of taxation and public dept. In the first chapter, fundamental concepts of taxation theory are introduced, whereas the second chapter deals with key elements of the German taxation system. The allocative and distributive effects of different taxation types are examined in chapter three and four. Chapter five integrates both allocative and distributive components in order to derive a theory of optimal taxation. The core of the sixth chapter is represented by international aspects of taxation. The debt part begins with a description of the extent and structure of public dept in chapter seven. In the following chapter, macroeconomic theories of national dept are evolved, while chapter nine is concerned with its long term consequences when employed as a regular instrument of budgeting. Finally, the tenth chapter deals with constitutional limits to public debt-incurring.

Workload
The total workload for this course is approximately 135.0 hours. For further information see German version.

Literature
Elective literature:

- Homburg, S.(2000): *Allgemeine Steuerlehre,* Vahlen
- Rosen, H.S.(1995): *Public Finance*; 4th ed., Irwin
- Wellisch, D.(2000): *Finanzwissenschaft I* and *Finanzwissenschaft III,* Vahlen
- Wigger, B. U.(2006): *Grundzüge der Finanzwissenschaft*; 2nd ed., Springer

T 6.118 Course: Public Sector Finance [T-WIWI-109590]

Responsible:	Prof. Dr. Berthold Wigger
Organisation:	KIT Department of Economics and Management
Part of:	M-WIWI-101403 - Finanzwissenschaft

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	4,5	Each winter term	1

Events					
WS 18/19	2560120	Öffentliches Finanzwesen	3 SWS	Lecture (V)	Wigger, Groh
Exams					
WS 18/19	790oefi	Public Sector Finance		Prüfung (PR)	Wigger
SS 2019	790oefi	Public Sector Finance		Prüfung (PR)	Wigger

Competence Certificate

The assessment consists of a written exam (60 min.) according to § 4 paragraph 2 Nr. 1 of the examination regulation SPO 2015.

Prerequisites

T-WIWI-107763 "Municipal Finance" must not be selected.

Annotation

Previous title until winter semester 2018/19 "Municipal Finance".

Below you will find excerpts from events related to this course:

V Öffentliches Finanzwesen
2560120, WS 18/19, 3 SWS, Open in study portal

Lecture (V)

Learning Content

The course *Municipal Finance* addresses the theory and policy of municipal revenues and spending including grants, municipal revenue equalisation, taxation as well as municipal and public enterprises.

At the beginning of the course, fundamental concepts of taxation theory as well as key elements of the German taxation system are introduced. The allocative and distributive effects of different taxation methods are examined thereafter and are combined within the theory of optimal taxation. The following chapter is concerned with municipal borrowing and illustrates ways to acquire additional funding. After addressing the extent, structure and variety of municipal borrowing, macroeconomic theories are introduced and applied to the municipal sector. In the course of this final chapter, special attention will be paid to the long term consequences and the sustainability of municipal borrowing as a means of budgeting.

Literature

- Ade, K., Notheis, K. & Schmid, H. (2011). *Kommunales Wirtschaftsrecht in Baden Württemberg*. Boorberg-Verlag.
- Aker, B., Hafner, W. & Notheis, K. (2012). *Gemeindeordnung Baden-Württemberg* (Kommentar). Boorberg-Verlag.
- Groh, M. (1994). Kommunalleasing und Investorenfinanzierung als Private Public Partnership. *Stadt und Gemeinde*, 49. Jahrgang, 09/94.
- Wigger, B. U. (2006). *Grundzüge der Finanzwissenschaft*. Springer-Verlag.
- Several publications of the Ministry of Interior and the Ministry of Finance Baden-Württemberg.

T 6.119 Course: Real Estate Management I [T-WIWI-102744]

Responsible: Prof. Dr.-Ing. Thomas Lützkendorf
Organisation: KIT Department of Economics and Management
Part of: M-INFO-102060 - Weitere Leistungen
M-WIWI-101466 - Real Estate Management

Type Prüfungsleistung schriftlich	**Credits** 4,5	**Recurrence** Each winter term	**Version** 1

Events					
WS 18/19	2586400	Real Estate Management I	2 SWS	Lecture (V)	Lützkendorf
WS 18/19	2586401	Übungen zu Real Estate Management I	2 SWS	Practice (Ü)	Worschech
Exams					
WS 18/19	7900249	Real Estate Management I		Prüfung (PR)	Lützkendorf
WS 18/19	7900250	Real Estate Management I		Prüfung (PR)	Lützkendorf

Competence Certificate
The assessment consists of a written exam (60 minutes) (following §4(2), 1 of the examination regulation). The exam takes place two times only in the semester in which the lecture is takes place (winter semester). Re-examinations are offered at every ordinary examination date.

Prerequisites
None

Annotation
The course is replenished by excursions and guest lectures by practicioners out of the real estate business.

Below you will find excerpts from events related to this course:

V Real Estate Management I
2586400, WS 18/19, 2 SWS, Open in study portal   **Lecture (V)**

Description
The course Real Estate Management I deals with questions concerning the economy of a single building througout its lifecycle. Among other topics this includes project development, location and market studies, german federal building codes as well as finance and assessment of economic efficiency.
The tutorial recesses the contents of the course by means of practical examples and, in addition to that, goes into the possible use of software tools.

Learning Content
The course Real Estate Management I deals with questions concerning the economy of a single building througout its lifecycle. Among other topics this includes project development, location and market studies, german federal building codes as well as finance and assessment of economic efficiency.
The tutorial recesses the contents of the course by means of practical examples and, in addition to that, goes into the possible use of software tools.

Annotation
The course is replenished by excursions and guest lectures by practicioners out of the real estate business.

Workload
The total workload for this course is approximately 135.0 hours. For further information see German version.

Literature
Elective literature:

- Gondring (Hrsg.): "Immobilienwirtschaft: Handbuch für Studium und Praxis". ISBN 3-8006-2989-5. Vahlen 2004
- Kühne-Büning (Hrsg.): "Grundlagen der Wohnungs- und Immobilienwirtschaft". ISBN 3-8314-0706-1. Knapp & Hammonia-Verlag 2005
- Schulte (Hrsg.): "Immobilienökonomie Bd. I". ISBN 3-486-25430-8. Oldenbourg 2000

T 6.120 Course: Real Estate Management II [T-WIWI-102745]

Responsible:	Prof. Dr.-Ing. Thomas Lützkendorf
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101466 - Real Estate Management

Type Prüfungsleistung schriftlich	Credits 4,5	Recurrence Each summer term	Version 1

Events					
SS 2019	2585400	**Real Estate Management II**	2 SWS	Lecture (V)	Lützkendorf, Worschech
SS 2019	2585401	**Übung zu Real Estate Management II**	2 SWS	Practice (Ü)	Worschech

Competence Certificate
The assessment consists of a written exam (60 minutes) (following §4(2), 1 of the examination regulation). The exam takes place two times only in the semester in which the lecture is takes place (summer semester). Reexaminations are offered at every ordinary examination date.

Prerequisites
None

Recommendation
A combination with the module*Design Construction and Assessment of Green Buildings I*is recommended.
Furthermore it is recommeded to choose courses of the following fields

- Finance and Banking
- Insurance
- Civil Engineering and Architecture (building physics, structural design, facility management)

Annotation
The course is replenished by excursions and guest lectures by practicioners out of the real estate business.

Below you will find excerpts from events related to this course:

V Real Estate Management II
2585400, SS 2019, 2 SWS, Open in study portal   **Lecture (V)**

Description
The course Real Estate Management II gives special attention to topics in connection to the management of large real estate portfolios. This especially includes property valuation, market and object rating, maintenance and modernization, as well as real estate portfolio and risk management. The tutorial provides examples in order to practice the application of theoretical knowledge to practical problems.

Notes
The course is replenished by excursions and guest lectures by practicioners out of the real estate business.

Learning Content
The course Real Estate Management II gives special attention to topics in connection to the management of large real estate portfolios. This especially includes property valuation, market and object rating, maintenance and modernization, as well as real estate portfolio and risk management. The tutorial provides examples in order to practice the application of theoretical knowledge to practical problems.

Annotation
The course is replenished by excursions and guest lectures by practicioners out of the real estate business.

Workload
The total workload for this course is approximately 135.0 hours. For further information see German version.

Literature
Elective literature:

See german version.

T 6.121 Course: Renewable Energy-Resources, Technologies and Economics [T-WIWI-100806]

Responsible:	PD Dr. Patrick Jochem Prof. Dr. Russell McKenna
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen M-WIWI-101464 - Energiewirtschaft

Type Prüfungsleistung schriftlich	Credits 3,5	Recurrence Each winter term	Version 2

Events					
WS 18/19	2581012	Renewable Energy – Resources, Technologies and Economics	2 SWS	Lecture (V)	McKenna, Jochem
Exams					
WS 18/19	7981012	Renewable Energy-Resources, Technologies and Economics		Prüfung (PR)	Fichtner

Competence Certificate
The assessment consists of a written exam (60 min., in English, answers in English or German) according to § 4 paragraph 2 Nr. 1 of the examination regulation SPO2015.

Prerequisites
None.

Below you will find excerpts from events related to this course:

V Renewable Energy – Resources, Technologies and Economics
2581012, WS 18/19, 2 SWS, Open in study portal   Lecture (V)

Learning Content
1. General introduction: Motivation, Global situation
2. Basics of renewable energies: Energy balance of the earth, potential definition
3. Hydro
4. Wind
5. Solar
6. Biomass
7. Geothermal
8. Other renewable energies
9. Promotion of renewable energies
10. Interactions in systemic context
11. Excursion to the "Energieberg" in Mühlburg

Workload
The total workload for this course is approximately 105.0 hours. For further information see German version.

Literature
Elective literature:

- Kaltschmitt, M., 2006, Erneuerbare Energien : Systemtechnik, Wirtschaftlichkeit, Umweltaspekte, aktualisierte, korrigierte und ergänzte Auflage Berlin, Heidelberg : Springer-Verlag Berlin Heidelberg.
- Kaltschmitt, M., Streicher, W., Wiese, A. (eds.), 2007, Renewable Energy: Technology, Economics and Environment, Springer, Heidelberg.
- Quaschning, V., 2010, Erneuerbare Energien und Klimaschutz : Hintergründe - Techniken - Anlagenplanung – Wirtschaftlichkeit München : Hanser, Ill.2., aktualis. Aufl.
- Harvey, D., 2010, Energy and the New Reality 2: Carbon-Free Energy Supply, Eathscan, London/Washington.
- Boyle, G. (ed.), 2004, Renewable Energy: Power for a Sustainable Future, 2nd Edition, Open University Press, Oxford.

T   6.122 Course: Security [T-INFO-101371]

Responsible: Prof. Dr. Dennis Hofheinz
                    Prof. Dr. Jörn Müller-Quade
Organisation: KIT Department of Informatics
Part of: M-INFO-100834 - Sicherheit
                    M-INFO-102060 - Weitere Leistungen

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	6	Each summer term	1

Events

SS 2019	24941	Security	3 SWS	Lecture (V)	Müller-Quade

T 6.123 Course: Selling IT-Solutions Professionally [T-INFO-101977]

Responsible:	Prof. Dr.-Ing. Klemens Böhm
Organisation:	KIT Department of Informatics
Part of:	M-INFO-101193 - Grundlagen von Informationssystemen
	M-INFO-101235 - Grundlagen des Daten- und Informationsmanagements
	M-INFO-102060 - Weitere Leistungen

Type	Credits	Recurrence	Version
Studienleistung	1,5	Irregular	1

T 6.124 Course: Semantic Web Technologies [T-WIWI-102874]

Responsible: Prof. Dr. York Sure-Vetter
Organisation: KIT Department of Economics and Management
Part of: M-INFO-102060 - Weitere Leistungen
M-WIWI-101438 - Semantisches Wissensmanagement
M-WIWI-101439 - Semantic Web und Anwendungen
M-WIWI-101440 - Internetanwendungen

Type Prüfungsleistung schriftlich	**Credits** 5	**Recurrence** Each summer term	**Version** 1

Events					
SS 2019	2511310	**Semantic Web Technologies**	2 SWS	Lecture (V)	Sure-Vetter, Acosta Deibe, Käfer
SS 2019	2511311	**Exercises to Semantic Web Technologies**	1 SWS	Practice (Ü)	Sure-Vetter, Acosta Deibe, Käfer
Exams					
WS 18/19	7900022	**Semantic Web Technologies**		Prüfung (PR)	Sure-Vetter
SS 2019	7900028	**Semantic Web Technologies**		Prüfung (PR)	Sure-Vetter

Competence Certificate
The assessment consists of an 1h written exam following §4, Abs. 2, 1 of the examination regulation or of an oral exam (20 min) following §4, Abs. 2, 2 of the examination regulation.

The exam takes place every semester and can be repeated at every regular examination date.

Prerequisites
None

Recommendation
Lectures on Informatics of the Bachelor on Information Systems (Semester 1-4) or equivalent are required.

Below you will find excerpts from events related to this course:

V Semantic Web Technologies
2511310, SS 2019, 2 SWS, Open in study portal   **Lecture (V)**

Description
The aim of the Semantic Web is to make the meaning (semantics) of data on the web usable in intelligent systems, e.g. in e-commerce and internet portals

Central concepts are the representation of knowledge in form of RDF and ontologies, the access via Linked Data, as well as querying the data by using SPARQL. This lecture provides the foundations of knowledge representation and processing for the corresponding technologies and presents example applications.

Learning Content
The following topics are covered:

- Resource Description Framework (RDF) and RDF Schema (RDFS)
- Web Architecture and Linked Data
- Web Ontology Language (OWL)
- Query language SPARQL
- Rule languages
- Applications

Workload

- The total workload for this course is approximately 150 hours
- Time of presentness: 45 hours
- Time of preperation and postprocessing: 67.5 hours
- Exam and exam preperation: 37.5 hours

Literature

- Pascal Hitzler, Markus Krötzsch, Sebastian Rudolph, York Sure: Semantic Web – Grundlagen. Springer, 2008.
- John Domingue, Dieter Fensel, James A. Hendler (Editors). Handbook of Semantic Web Technologies. Springer, 2011.

Additional Literature

- S. Staab, R. Studer (Editors). Handbook on Ontologies. International Handbooks in Information Systems. Springer, 2003.
- Tim Berners-Lee. Weaving the Web. Harper, 1999 geb. 2000 Taschenbuch.
- Ian Jacobs, Norman Walsh. Architecture of the World Wide Web, Volume One. W3C Recommendation 15 December 2004. http://www.w3.org/TR/webarch/
- Dean Allemang. Semantic Web for the Working Ontologist: Effective Modeling in RDFS and OWL. Morgan Kaufmann, 2008.
- Tom Heath and Chris Bizer. Linked Data: Evolving the Web into a Global Data Space. Synthesis Lectures on the Semantic Web: Theory and Technology, 2011.

V	**Exercises to Semantic Web Technologies** 2511311, SS 2019, 1 SWS, Open in study portal	**Practice (Ü)**

Description

Multiple exercises are held that capture the topics, held in the lecture Semantic Web Technologies, and discuss them in detail. Thereby, practical examples are given to the students in order to transfer theoretical aspects into practical implementation.

Learning Content

The following topics are covered:

- Resource Description Framework (RDF) and RDF Schema (RDFS)
- Web Architecture and Linked Data
- Web Ontology Language (OWL)
- Query language SPARQL
- Rule languages
- Applications

Workload

The total workload for the lecture Semantic Web Technologiesis given out on the description of the lecture.

Literature

- Pascal Hitzler, Markus Krötzsch, Sebastian Rudolph, York Sure: Semantic Web – Grundlagen. Springer, 2008.
- John Domingue, Dieter Fensel, James A. Hendler (Editors). Handbook of Semantic Web Technologies. Springer, 2011.

Additional Literature

- S. Staab, R. Studer (Editors). Handbook on Ontologies. International Handbooks in Information Systems. Springer, 2003.
- Tim Berners-Lee. Weaving the Web. Harper, 1999 geb. 2000 Taschenbuch.
- Ian Jacobs, Norman Walsh. Architecture of the World Wide Web, Volume One. W3C Recommendation 15 December 2004. http://www.w3.org/TR/webarch/
- Dean Allemang. Semantic Web for the Working Ontologist: Effective Modeling in RDFS and OWL. Morgan Kaufmann, 2008.
- Tom Heath and Chris Bizer. Linked Data: Evolving the Web into a Global Data Space. Synthesis Lectures on the Semantic Web: Theory and Technology, 2011.

T 6.125 Course: Seminar in Applied Informatics (Bachelor) [T-WIWI-102701]

Responsible: Prof. Dr. Andreas Oberweis
Prof. Dr. Ali Sunyaev
Prof. Dr. York Sure-Vetter
Prof. Dr. Melanie Volkamer
Prof. Dr.-Ing. Johann Marius Zöllner

Organisation: KIT Department of Economics and Management

Part of: M-INFO-102060 - Weitere Leistungen
M-WIWI-101438 - Semantisches Wissensmanagement
M-WIWI-101439 - Semantic Web und Anwendungen

Type	Credits	Recurrence	Version
Prüfungsleistung anderer Art	3	Each term	1

Events					
SS 2019	2512300	Knowledge Discovery and Data Mining	3 SWS	Seminar / Practical course (S/P)	Sure-Vetter, Färber, Nguyen, Weller
SS 2019	2513300	Technology-enhanced Learning	2 SWS	Seminar (S)	Böhm, Beyerer, Roller, Streicher, Szentes, Mandausch
SS 2019	2513306	Data Science & Real-time Big Data Analytics	2 SWS	Seminar / Practical course (S/P)	Sure-Vetter, Riemer, Zehnder
SS 2019	2595470	Seminar Service Science, Management & Engineering	2 SWS	Seminar (S)	Weinhardt, Nickel, Fichtner, Satzger, Sure-Vetter, Fromm

Competence Certificate

The assessment is done according to §4(2), 3 of the examination regulation in form of an evaluation of the seminar presentation and a written seminar report. The weighting of the individual marks (presentation and report) is announced at the beginning of the seminar.

Prerequisites

None

Annotation

The title of this course is a generic one. Specific titles and the topics of offered seminars will be announced before the start of a semester in the internet at http://www.aifb.uni-karlsruhe.de/Lehre

Below you will find excerpts from events related to this course:

V Knowledge Discovery and Data Mining
2512300, SS 2019, 3 SWS, Open in study portal   Seminar / Practical course (S/P)

Description

The seminar includes different methods of machine learning and data mining. Participants of the seminar should have basic knowledge of machine learning and programming skills.

Notes

The exact dates and information for registration will be announced at the event page.

Learning Content

Domains of interest include, but are not limited to:

- Medicine
- Social Media
- Finance Market

Literature
Detailed references are indicated together with the respective subjects. For general background information look up the following textbooks:

- Mitchell, T.; Machine Learning
- McGraw Hill, Cook, D.J. and Holder, L.B. (Editors) Mining Graph Data, ISBN:0-471-73190-0
- Wiley, Manning, C. and Schütze, H.; Foundations of Statistical NLP, MIT Press, 1999.

V	**Technology-enhanced Learning** 2513300, SS 2019, 2 SWS, Open in study portal	**Seminar (S)**

Notes
The date of the first event will be announced on the homepage.

V	**Data Science & Real-time Big Data Analytics** 2513306, SS 2019, 2 SWS, Open in study portal	**Seminar / Practical course (S/P)**

Description
Event processing and real-time data are everywhere: financial market data, sensors, business intelligence, social media analytics, logistics. Many applications collect large volumes of data in real time and are increasingly faced with the challenge of being able to process them quickly and react promptly. The challenges of this real-time processing are currently also receiving a great deal of attention under the term "Big Data". The complex processing of real-time data requires both knowledge of methods for data analysis (data science) and their processing (real-time analytics). Seminar papers are offered on both of these areas as well as on interface topics, the input of own ideas is explicitly desired.

V	**Seminar Service Science, Management & Engineering** 2595470, SS 2019, 2 SWS, Open in study portal	**Seminar (S)**

Learning Content
Each Semester, the seminar will cover topics from a different selected subfield of Service Science, Management & Engineering. Topics include service innovation, service economics, service computing, transformation and coordination of service value networks as well as collaboration for knowledge intensive services.

See the KSRI website for more information about this seminar: www.ksri.kit.edu

Workload
The total workload for this course is approximately 90 hours. For further information see German version.

Literature
The student will receive the necessary literature for his research topic.

T 6.126 Course: Seminar in Business Administration (Bachelor) [T-WIWI-103486]

Responsible: Professorenschaft des Fachbereichs Betriebswirtschaftslehre
Organisation: KIT Department of Economics and Management
Part of: M-INFO-102060 - Weitere Leistungen
M-WIWI-101826 - Seminarmodul Wirtschaftswissenschaften

Type Prüfungsleistung anderer Art	Credits 3	Recurrence Each term	Version 1

Events

WS 18/19	2530372	Investment Case Studies	2 SWS	Seminar (S)	Ulrich
WS 18/19	2530580	Seminar in Finance	2 SWS	Seminar (S)	Uhrig-Homburg, Mitarbeiter
WS 18/19	2540524	Bachelor Seminar in CRM	2 SWS	Seminar (S)	Geyer-Schulz, Ball, Schweigert, Schweizer
WS 18/19	2540557	Literature Review Seminar: Information Systems and Service Design	SWS	Seminar (S)	Mädche, Augenstein
WS 18/19	2545010	Entrepreneurship Basics (Track 1)	2 SWS	Seminar (S)	Schwarzkopf, Terzidis
WS 18/19	2545011	Entrepreneurship Basics (Track 2)	2 SWS	Seminar (S)	Böhrer, Terzidis
WS 18/19	2545012	Entrepreneurship Basics (Track 3)	2 SWS	Seminar (S)	Ziegler, Ntagiakou, Terzidis
WS 18/19	2572173	Seminar in Marketing & Innovation (Bachelor)	SWS	Seminar (S)	Feurer
WS 18/19	2573010	Seminar Human Resources and Organizations	2 SWS	Seminar (S)	Nieken, Mitarbeiter
WS 18/19	2573011	Seminar Human Resource Management	2 SWS	Seminar (S)	Nieken, Mitarbeiter
WS 18/19	2579905	Special Topics in Management Accounting	2 SWS	Seminar (S)	Riar
WS 18/19	2581976	Seminar in Production and Operations Management I	2 SWS	Seminar (S)	Glöser-Chahoud, Schultmann
WS 18/19	2581977	Seminar in Production and Operations Management II	2 SWS	Seminar (S)	Volk, Schultmann
WS 18/19	2581978	Seminar in Production and Operations Management III	2 SWS	Seminar (S)	Wiens, Schultmann
WS 18/19	2581980	Seminar Energiewirtschaft II	2 SWS	Seminar (S)	Keles
WS 18/19	2581981	Seminar Energiewirtschaft III	2 SWS	Seminar (S)	Ardone
SS 2019	2530293	Seminar in Finance (Bachelor, Prof. Ruckes)	2 SWS	Seminar (S)	Ruckes, Luedecke, Hoang, Scholz-Daneshgari, Strych, Schubert, Benz
SS 2019	2530580	Seminar in Finance (Master, Prof. Uhrig-Homburg)	2 SWS	Seminar (S)	Uhrig-Homburg, Hofmann, Reichenbacher, Eska
SS 2019	2540524	Bachelor Seminar aus CRM (nur Bachelor)	2 SWS	Seminar (S)	Geyer-Schulz, Schweigert, Schweizer
SS 2019	2571180	Seminar in Marketing und Vertrieb (Bachelor)	2 SWS	Seminar (S)	Klarmann, Assistenten
SS 2019	2573010	Seminar Human Resources and Organizations (Bachelor)	2 SWS	Seminar (S)	Nieken, Mitarbeiter
SS 2019	2573011	Seminar Human Resource Management (Bachelor)	2 SWS	Seminar (S)	Nieken, Mitarbeiter
SS 2019	2579904	Seminar Management Accounting	2 SWS	Seminar (S)	Hammann, Disch

SS 2019	2579905	Special Topics in Management Accounting	2 SWS	Seminar (S)	Mickovic, Riar
SS 2019	2581977	Seminar Produktionswirtschaft und Logistik II	2 SWS	Seminar (S)	Schultmann
Exams					
WS 18/19	7500175	Seminar: Energy Informatics		Prüfung (PR)	Wagner
WS 18/19	7900001	Investment Case Studies		Prüfung (PR)	Ulrich
WS 18/19	7900009	Alternative and Big Data in Finance		Prüfung (PR)	Ulrich
WS 18/19	7900017	Seminar Smart Grid and Energy Markets		Prüfung (PR)	Weinhardt
WS 18/19	7900085	Entrepreneurship Basics (Track 1)		Prüfung (PR)	Terzidis
WS 18/19	7900087	Entrepreneurship Basics (Track 2)		Prüfung (PR)	Terzidis
WS 18/19	7900088	Entrepreneurship Basics (Track 3)		Prüfung (PR)	Terzidis
WS 18/19	7900157	Seminar Human Resources and Organizations (Bachelor)		Prüfung (PR)	Nieken
WS 18/19	7900160	Seminar in Marketing und Innovation (Bachelor)		Prüfung (PR)	Feurer
WS 18/19	7900161	Seminar Human Resource Management (Bachelor)		Prüfung (PR)	Nieken
WS 18/19	7900165	Seminar Digital Experience and Participation		Prüfung (PR)	Weinhardt
WS 18/19	7900168	Bachelor Seminar in CRM		Prüfung (PR)	Geyer-Schulz
WS 18/19	7900175	Seminar in Finance (Bachelor)		Prüfung (PR)	Uhrig-Homburg
WS 18/19	7900203	Seminar in Finance		Prüfung (PR)	Uhrig-Homburg
WS 18/19	7900233	Literature Review Seminar: Information Systems and Service Design (Seminar)		Prüfung (PR)	Mädche
WS 18/19	7900265	Seminar in Business Administration (Bachelor)		Prüfung (PR)	Weissenberger-Eibl
WS 18/19	7900283	Seminar Electronic Markets and User Behavior		Prüfung (PR)	Weinhardt
WS 18/19	7900285	Seminar in Business Administration (Bachelor)		Prüfung (PR)	Lützkendorf
WS 18/19	79-2579905-01	Special Topics in Management Accounting (Bachelor)		Prüfung (PR)	Wouters
WS 18/19	7981976	Seminar in Production and Operations Management I		Prüfung (PR)	Schultmann
WS 18/19	7981977	Seminar in Production and Operations Management II		Prüfung (PR)	Schultmann
WS 18/19	7981978	Seminar in Production and Operations Management III		Prüfung (PR)	Schultmann
WS 18/19	7981979	Seminar in Business Administration A (Master)		Prüfung (PR)	Fichtner
WS 18/19	7981980	Seminar in Business Administration A (Master)		Prüfung (PR)	Fichtner
WS 18/19	7981981	Seminar in Business Administration (Bachelor)		Prüfung (PR)	Fichtner
SS 2019	7900021	Seminar in Marketing and Sales (Bachelor)		Prüfung (PR)	Klarmann
SS 2019	7900093	Seminar in Business Administration A		Prüfung (PR)	Weinhardt
SS 2019	79-2579904-01	Seminar Management Accounting (Bachelor)		Prüfung (PR)	Wouters
SS 2019	79-2579905-01	Seminar Special Topics in Management Accounting (Bachelor)		Prüfung (PR)	Wouters

Competence Certificate

The non examassessment (§4(2), 3 SPO 2007) or alternative exam assessment (§ 4(2), 3 SPO 2015) consists of

- a talk about the research topic of the seminar together with discussion,
- a written summary about the major issues of the topic and
- attending the discussions of the seminar

The grade is achieved by the weighted sum of the grades.

Prerequisites

None.

Recommendation

See seminar description in the course catalogue of the KIT (https://campus.kit.edu/)

Annotation

The listed seminar titles are placeholders. Currently offered seminars of each semester will be published on the websites of the institutes and in the course catalogue of the KIT. In general, the current seminar topics of each semester are already announced at the end of the previous semester. Furthermore for some seminars there is an application required.
The available places are listed on the internet: https://portal.wiwi.kit.edu.

Below you will find excerpts from events related to this course:

V	**Bachelor Seminar in CRM** 2540524, WS 18/19, 2 SWS, Open in study portal	**Seminar (S)**

Learning Content

This seminar serves as an introduction into the process of scientific work. As a consequence, four (mandatory) introductory lessons are given that will give insight to philosophy of science, researching literature, typesetting with LaTeX and writing/ presenting of content.

The seminar roughly treats questions of Customer Relationship Management. Exact topics are announced with the beginning of the application period.

Workload

The total workload for this course is approximately 90 hours (3 credits):

Time of attendance

- Introductory lessons: 4 x 90min = 6h 00m
- Presentations: 4 x 90min = 6h 00m

Selbststudium

- Preparing the presentation: 8h
- Literature research: 40h
- Writing the seminar paper: 30h

Summe: 90h 00m

Literature
Elective literature:

- W. Thomson. A Guide for the Young Economist. The MIT Press, 2001
- D.J. Brauner, H.-U. Vollmer. Erfolgreiches wissenschaftliches Arbeiten. Verlag Wissenschaft & Praxis, 2004
- University of Chicago Press. The Chicago Manual of Style. University of Chicago Press, 13th ed., 1982
- American Psychological Association. Concise of Rules of APA Style. American Psychological Association, 2005
- American Psychological Association. Publication Manual of the American Psychological Association. American Psychological Association, 2001

V	**Entrepreneurship Basics (Track 2)** 2545011, WS 18/19, 2 SWS, Open in study portal	**Seminar (S)**

Annotation
Please register on the seminar website.

V	**Seminar in Marketing & Innovation (Bachelor)** 2572173, WS 18/19, SWS, Open in study portal	Seminar (S)

Learning Content
The seminary teaches students to gain a systematic overview of a field of literature in Marketing - an important prerequisite for a successful thesis. Central aspects are identification of relevant literature sources, systematization of the field, working out central insights, and writing comprehensively.

Annotation
Students interested in thesis positions at the chair of marketing should participate in the marketing seminar. For further information please contact Marketing & Sales Research Group (marketing.iism.kit.edu)

Workload
The total workload for this course is approximately 90 hours. For further information see German version.

Literature
will be announced in the seminary

V	**Seminar Human Resources and Organizations** 2573010, WS 18/19, 2 SWS, Open in study portal	Seminar (S)

Learning Content
The topics are redefined each semester on basis of current research topics. The topics will be announced on the website of the Chair.

Workload
The total workload for this course is approximately 90 hours.

Lecture 30h
Preparation of lecture 45h
Exam preparation 15h

V	**Seminar Human Resource Management** 2573011, WS 18/19, 2 SWS, Open in study portal	Seminar (S)

Workload
The total workload for this course is approximately 90 hours.

Lecture 30h
Preparation of lecture 45h
Exam preparation 15h

V	**Special Topics in Management Accounting** 2579905, WS 18/19, 2 SWS, Open in study portal	Seminar (S)

Learning Content
The course will be a mix of lectures, discussions, and student presentations. Students will write a paper in small groups, and present this in the final week. Topics are selectively prediscibed. The seminar course is concentrated in four meetings that are spread throughout the semester.

Meeting 1: Introductory lecture. You need to conduct a first literature search and at the end of the first week you should identify (provisionally) the topic for your paper.

Meeting 2 and 3: The purpose of the second week is to define the topics and research questions in much more detail. Different types of papers may be selected: literature review, research paper, descriptive case study, or teaching case. Students will present their ideas and all participants should ask questions, help each other focus, offer ideas, etc.

Meeting 4: In the third week we are going to present and discuss the final papers.

Annotation
Maximum of 24 students.

Workload
The total workload for this course is approximately 90 hours. For further information see German version.

Literature
Will be announced in the course.

V	**Seminar in Finance (Master, Prof. Uhrig-Homburg)**	**Seminar (S)**
	2530580, SS 2019, 2 SWS, Open in study portal	

Learning Content
Within this seminar different topics of current concern are treated. These topics have their foundations in the contents of certain lectures.

The topics of the seminar are published on the website of the involved finance chairs at the end of the foregoing semester.

Workload
The total workload for this course is approximately 90 hours. For further information see German version.

Literature
Will be announced at the end of the foregoing semester.

V	**Seminar Human Resources and Organizations (Bachelor)**	**Seminar (S)**
	2573010, SS 2019, 2 SWS, Open in study portal	

Learning Content
The topics are redefined each semester on basis of current research topics. The topics will be announced on the website of the Chair.

Workload
The total workload for this course is approximately 90 hours.

Lecture 30h
Preparation of lecture 45h
Exam preparation 15h

V	**Seminar Human Resource Management (Bachelor)**	**Seminar (S)**
	2573011, SS 2019, 2 SWS, Open in study portal	

Learning Content
The topics are redefined each semester on basis of current research topics. The topics will be announced on the website of the Chair.

Workload
The total workload for this course is approximately 90 hours.

Lecture 30h
Preparation of lecture 45h
Exam preparation 15h

Literature
Selected journal articles and books.

V	**Seminar Management Accounting**	**Seminar (S)**
	2579904, SS 2019, 2 SWS, Open in study portal	

Learning Content

The course will be a mix of lectures, discussions, and student presentations. Students will write a paper in small groups, and present this in the final week. You are to a large extent free to select your own topic. The seminar course is concentrated in four meetings that are spread throughout the semester.

Meeting 1: Introductory lecture. You need to conduct a first literature search and at the end of the first week you should identify (provisionally) the topic for your paper.

Meeting 2 and 3: The purpose of the second week is to define the topics and research questions in much more detail. Different types of papers may be selected: literature review, research paper, descriptive case study, or teaching case. Students will present their ideas and all participants should ask questions, help each other focus, offer ideas, etc.

Meeting 4: In the third week we are going to present and discuss the final papers.

Annotation

Maximum of 24 students.

Workload

The total workload for this course is approximately 90 hours. For further information see German version.

Literature

Will be announced in the course.

V	**Special Topics in Management Accounting** 2579905, SS 2019, 2 SWS, Open in study portal	**Seminar (S)**

Learning Content

The course will be a mix of lectures, discussions, and student presentations. Students will write a paper in small groups, and present this in the final week. Topics are selectively prediscibed. The seminar course is concentrated in four meetings that are spread throughout the semester.

Meeting 1: Introductory lecture. You need to conduct a first literature search and at the end of the first week you should identify (provisionally) the topic for your paper.

Meeting 2 and 3: The purpose of the second week is to define the topics and research questions in much more detail. Different types of papers may be selected: literature review, research paper, descriptive case study, or teaching case. Students will present their ideas and all participants should ask questions, help each other focus, offer ideas, etc.

Meeting 4: In the third week we are going to present and discuss the final papers.

Annotation

Maximum of 24 students.

Workload

The total workload for this course is approximately 90 hours. For further information see German version.

Literature

Will be announced in the course.

| **T** | **6.127 Course: Seminar in Economics (Bachelor) [T-WIWI-103487]** |

Responsible: Professorenschaft des Fachbereichs Volkswirtschaftslehre
Organisation: KIT Department of Economics and Management
Part of: M-INFO-102060 - Weitere Leistungen
M-WIWI-101826 - Seminarmodul Wirtschaftswissenschaften

Type Prüfungsleistung anderer Art	**Credits** 3	**Recurrence** Each term	**Version** 1

Events

WS 18/19	2512312	Cooperation seminar: Innovative applications on single board computers as well as their economic relevance	3 SWS	Seminar / Practical course (S/P)	Sure-Vetter, Ott, Weller, Bälz
WS 18/19	2520405	Topics in Experimental Economics	SWS	Seminar (S)	Reiß, Hofmann, Mitarbeiter
WS 18/19	2521310	Topics in Econometrics	2 SWS	Seminar (S)	Buse, Görgen
WS 18/19	2560140	Topics on Political Economics	2 SWS	Seminar (S)	Szech, Engel
WS 18/19	2560141	Morals & Social Behavior	2 SWS	Seminar (S)	Szech, Huber
WS 18/19	2560400	Seminar in Macroeconomics	2 SWS	Seminar (S)	Brumm, Krause, Pegorari
WS 18/19	2561208	Ausgewählte Aspekte der europäischen Verkehrsplanung und -modellierung	1 SWS	Seminar (S)	Szimba
SS 2019	2560553	Topics in Political Economics (Bachelor)	2 SWS	Seminar (S)	Szech, Maus
SS 2019	2560555	Morals and Social Behavior (Bachelor)	2 SWS	Seminar (S)	Szech, Huber

Exams

WS 18/19	7900094	Selected Topics in Text Mining - Cooperation Seminar AIFB and ECON	Prüfung (PR)	Sure-Vetter, Ott
WS 18/19	7900132	Seminar in Economics A (Master)	Prüfung (PR)	Fuchs-Seliger
WS 18/19	7900139	Seminar in Economics (Bachelor/Master)	Prüfung (PR)	Mitusch
WS 18/19	7900141	Seminar on Voting Theory	Prüfung (PR)	Puppe
WS 18/19	7900216	Seminar in Macroeconomics	Prüfung (PR)	Brumm
WS 18/19	7900254	Topics in Econometrics. Seminar in Economics (Bachelor)	Prüfung (PR)	Schienle
WS 18/19	7900257	Date Mining	Prüfung (PR)	Nakhaeizadeh
WS 18/19	7900278	Seminar on Morals and Social Behavior	Prüfung (PR)	Szech
WS 18/19	7900282	Seminar in Political Economics (Bachelor)	Prüfung (PR)	Szech
WS 18/19	79191ee	Seminar Topics in Experimental Economics	Prüfung (PR)	Reiß
WS 18/19	79sefi1	Seminar in Economics (Bachelor)	Prüfung (PR)	Wigger
SS 2019	7900130	Seminar in Economics (Bachelor)	Prüfung (PR)	Szech
SS 2019	7900131	Seminar in Economics (Bachelor)	Prüfung (PR)	Szech
SS 2019	79sefi1	Seminar in Economics (Bachelor)	Prüfung (PR)	Wigger

Competence Certificate

The non exam assessment (§4(2), 3 SPO 2007) or alternative exam assessment (§ 4(2), 3 SPO 2015) consists of

- a talk about the research topic of the seminar together with discussion,
- a written summary about the major issues of the topic and
- attending the discussions of the seminar

The grade is achieved by the weighted sum of the grades.

Prerequisites

None.

Recommendation

See seminar description in the course catalogue of the KIT (https://campus.kit.edu/)

Annotation

The listed seminar titles are placeholders. Currently offered seminars of each semester will be published on the websites of the institutes and in the course catalogue of the KIT. In general, the current seminar topics of each semester are already announced at the end of the previous semester. Furthermore for some seminars there is an application required.
The available places are listed on the internet: https://portal.wiwi.kit.edu.

Below you will find excerpts from events related to this course:

V	**Cooperation seminar: Innovative applications on single board computers as well as their economic relevance** 2512312, WS 18/19, 3 SWS, Open in study portal	**Seminar / Practical course (S/P)**

Description

This seminar is offered cooperatively by the Chair of Web Science (AIFB) and the Chair of Economic Policy (ECON).

The cooperation seminar deals with the technical realization of innovative applications using single board computers such as Arduino (https://www.arduino.cc) or Raspberry Pi (https://www.raspberrypi.org). These single board computers can be extended by various sensors and modules, thus fulfilling a wide range of tasks. Thus, the addition of a camera allows for example gesture and face detection, or the equipment with different sensors enables the measurement of temperature and perception of moving objects.

At the same time, the implications of cost-effective availability of these basic technologies are analyzed from an economic-scientific perspective. The spread and use of these single-board computers, as well as the concepts associated with their success, can have a decisive impact on innovation processes. The reasons and obstacles as well as their relevance to innovation are therefore also addressed from an economic perspective.

Microcomputers such as the Raspberry Pi, for example, are increasingly being used and expanded in the private environment, with numerous applications being possible in the household sector. They can be used as a monitoring system, as a home server or as an electronic func- tion opener. Likewise, due to their low cost, size and ease of use, they can also significantly support the development of innovative processes, for example in the development of prototypes.

Within the scope of this seminar, the possibilities of a single board computer are investigated using the Raspberry Pi. The students are to conceive, realize and present innovative applications in two-teams. Each team is provided with a Raspberry Pi. In addition to the realization of an innovative application, each team has to deal with and discuss an economic science issue. The use of the Raspberry Pi or the underlying concepts from an innovation-economic perspective are to be analyzed.

In addition to the Raspberry Pis, various sensors and expansion modules are also provided and can be purchased after consultation with the supervisors. Furthermore, it may be necessary to develop extensions in Python during the seminar. Previous knowledge in Python and Semantic Web technologies are therefore an advantage but not an imperative requirement.

Notes

The exact dates and information for registration will be announced at the event page.

Learning Content

Topics of interest include, but are not limited to:

- Smart Home Applications
- Environmental measurements
- Gesture control
- Security systems

| V | **Topics in Experimental Economics**
2520405, WS 18/19, SWS, Open in study portal | **Seminar (S)** |

Learning Content

The course covers selected topics in experimental economics and deepens the understanding of the experimental method. In particular, topics of current research into experimental and behavioral economics are discussed, along with a treatment of advanced methodic issues.

Annotation

The course is offered in summer 2016 for the first time. The course is not offered in every academic year.

Workload

The total workload for this course is approximately 90.0 hours. For further information see German version.

Literature

A selection of published papers is compulsory reading for the course. The course syllabus provides references and is announced at the beginning of the course.

| V | **Topics in Econometrics**
2521310, WS 18/19, 2 SWS, Open in study portal | **Seminar (S)** |

Annotation

In the winter semester 2018/19 the course will be held in English.

| V | **Topics on Political Economics**
2560140, WS 18/19, 2 SWS, Open in study portal | **Seminar (S)** |

Workload

About 90 hours.

| V | **Topics in Political Economics (Bachelor)**
2560553, SS 2019, 2 SWS, Open in study portal | **Seminar (S)** |

Description

In many companies relative reward schemes are used whereby employees earn a bonus if they perform better than their colleagues. Moreover, hierarchical structures mean that in many organizations, employees find themselves in constant competition for promotions. This is meant to provide incentives for higher performance. However, competitive remuneration schemes could also have detrimental effects such that individual workers may view their colleagues as direct competitors generating more selfish and/or less helpful behavior in the workplace. Furthermore, age, gender and culture seem to have impacts on willingness to compete. For example, in western cultures, adult men sometimes enter competition even though their performance level is way too low for success, i.e., they harm themselves by over-competitiveness. In contrast, adult females sometimes compete less than they could do successfully.

Another challenge in contest design, e.g. in sports, is that when competition takes place among workers with mixed abilities it may lead to a discouragement effect, which establishes that lower ability individuals often reduce effort competing against an individual they do not feel up to (e.g. it has been found that average golf players performed significantly worse when competing against a superstar like Tiger Woods). One solution suggested by the economic literature is to level the playing field between advantaged and disadvantaged individuals by favoring weaker individuals through bid-caps, asymmetric tie-breaking rules, or advances. In sports, asymmetric tie-breaking is already common, for instance, in the Champions League soccer playoffs "away goals" become the decisive factor in determining the winning team in case of a tie.

Contests are not only a well-established mechanism for incentivizing workers but also for encouraging innovation and advancing R&D. Elements of research and innovation contests can be found in the procurement of various goods and services. For instance, the construction of new buildings, proposals in a venture capital firm or TV shows for entertainment companies all flow through a similar innovation process that involves the solicitation of bids from multiple potential suppliers and the preparation of a pilot or a proposal. In other cases, e.g., in lobbying contests, it is often discussed whether investments are beneficial or not. Some authors have argued that investments into lobbying should be capped in order to soften competition among asymmetrically strong interest groups (e.g. the lobbying industry versus consumers' interest groups). Of course, then the question arises whether such caps achieve the respective design goal or not.

In this seminar, we discuss questions like: How can we design workplaces and labor contracts to increase motivation and productivity? How can contests be used to foster innovation? Which role should social preferences play and how could they inspire specific contest designs? How should sport contests be engineered depending on the respective goals? How should we design lobbying contests?

Also related topics are very welcome!

Notes

Participation will be limited to 12 students.

Annotation

For further questions, please contact Patrick Maus (Patrick.Maus@kit.edu).

Workload

About 90 hours

Literature

Charness, G., Kuhn, P. (2011) Lab labor: What can labor economists learn from the lab? Handbook of labor economics, 4, 229-330.

Cassar, A., Friedman, D. (2004) Economics lab: an intensive course in experimental economics. Routledge.

Croson, R., Gneezy, U. (2009). Gender differences in preferences. Journal of Economic literature, 47(2), 448-474.

Dechenaux, Emmanuel, Dan Kovenock, and Roman M. Sheremeta. "A survey of experimental research on contests, all-pay auctions and tournaments." Experimental Economics 18.4 (2015): 609-669.

V	**Morals and Social Behavior (Bachelor)** 2560555, SS 2019, 2 SWS, Open in study portal	**Seminar (S)**

Description

For a long time, economists studied given markets and mechanisms to predict outcomes, future developments or generally the participants' behavior. In contrast, Market Design uses theory, empirical and experimental work to design markets which incentivize their participants in a way that leads to a "desirable" outcome. In this, the designer can have different objectives, for example: Maximizing efficiency, welfare or minimizing negative externalities.

Prominent applications of Market Design include, quite topical, Germany's auction of 5G mobile licenses and matching markets, where there are two large populations that need to be matched to one another (think of hospitals and interns, students and dorm rooms or kidney donors and receivers). In this seminar, we think about ways to either design new markets or how we could alter existing ones in a socially beneficial way. Alternatively, research ideas could focus on finding failures or shortcomings of ineffectively designed markets.

Notes
Participation will be limited to 12 students.

Annotation
For further questions, please contact David Huber (david.huber@kit.edu).

Workload
About 90 hours.

T 6.128 Course: Seminar in Informatics (Bachelor) [T-WIWI-103485]

Responsible:	Professorenschaft des Fachbereichs Informatik
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102058 - Seminarmodul Informatik
	M-INFO-102060 - Weitere Leistungen

Type Prüfungsleistung anderer Art	Credits 3	Recurrence Each term	Version 1

Events					
WS 18/19	2512301	Linked Data and the Semantic Web	3 SWS	Seminar / Practical course (S/P)	Sure-Vetter, Acosta Deibe, Käfer, Heling, Weller
WS 18/19	2512311	Real-World Challenges in Data Science and Analytics	3 SWS	Seminar / Practical course (S/P)	Sure-Vetter, Nickel, Weinhardt, Zehnder, Brandt
WS 18/19	2512312	Cooperation seminar: Innovative applications on single board computers as well as their economic relevance	3 SWS	Seminar / Practical course (S/P)	Sure-Vetter, Ott, Weller, Bälz
WS 18/19	2513200	Seminar Betriebliche Informationssysteme: Programmieren 3 (Bachelor)	2 SWS	Seminar (S)	Oberweis, Zöllner, Drescher, Fritsch, Struppek
WS 18/19	2513400	Emerging Trends in Critical Information Infrastructures	2 SWS	Seminar (S)	Lins, Sunyaev, Thiebes
WS 18/19	2595470	Seminar Service Science, Management & Engineering	2 SWS	Seminar (S)	Weinhardt, Satzger, Nickel, Fromm, Fichtner, Sure-Vetter
SS 2019	2512300	Knowledge Discovery and Data Mining	3 SWS	Seminar / Practical course (S/P)	Sure-Vetter, Färber, Nguyen, Weller
SS 2019	2513200	Seminar Betriebliche Informationssysteme: Datenschutz und IT-Sicherheit (Bachelor)	2 SWS	Seminar (S)	Oberweis, Raabe, Volkamer, Aldag, Alpers, Fritsch, Mucha, Wagner, Schiefer
SS 2019	2513306	Data Science & Real-time Big Data Analytics	2 SWS	Seminar / Practical course (S/P)	Sure-Vetter, Riemer, Zehnder
SS 2019	2513400	Emerging Trends in Critical Information Infrastructures	2 SWS	Seminar (S)	Lins, Sunyaev, Thiebes
SS 2019	2595470	Seminar Service Science, Management & Engineering	2 SWS	Seminar (S)	Weinhardt, Nickel, Fichtner, Satzger, Sure-Vetter, Fromm
Exams					
WS 18/19	7500175	Seminar: Energy Informatics		Prüfung (PR)	Wagner
WS 18/19	7900038	Linked Data and the Semantic Web		Prüfung (PR)	Sure-Vetter
WS 18/19	7900042	Seminar Betriebliche Informationssysteme: Programmieren 3		Prüfung (PR)	Oberweis
WS 18/19	7900044	Seminar Service Science, Management & Engineering		Prüfung (PR)	Sure-Vetter
WS 18/19	7900094	Selected Topics in Text Mining - Cooperation Seminar AIFB and ECON		Prüfung (PR)	Sure-Vetter, Ott
WS 18/19	7900114	Emerging Trends in Critical Information Infrastructures		Prüfung (PR)	Sunyaev
WS 18/19	7900121	Seminar "Privacy Awareness"		Prüfung (PR)	Volkamer
WS 18/19	7900192	Data Science with Open Data		Prüfung (PR)	Sure-Vetter

SS 2019	7900087	Seminar Business Information Systems: Privacy and IT Security (Bachelor)	Prüfung (PR)	Oberweis
SS 2019	7900090	Data Science & Real-time Big Data Analytics	Prüfung (PR)	Sure-Vetter
SS 2019	7900092	Seminar Service Science, Management & Engineering	Prüfung (PR)	Sure-Vetter
SS 2019	7900094	Knowledge Discovery and Data Mining	Prüfung (PR)	Sure-Vetter

Competence Certificate
The non exam assessment (§4(2), 3 SPO 2007) or alternative exam assessment (§ 4(2), 3 SPO 2015) consists of

- a talk about the research topic of the seminar together with discussion,
- a written summary about the major issues of the topic and
- attending the discussions of the seminar

The grade is achieved by the weighted sum of the grades.

Prerequisites
None.

Recommendation
See seminar description in the course catalogue of the KIT (https://campus.kit.edu/)

Annotation
Placeholder for seminars offered by the Institute AIFB. Currently offered seminars of each semester will be published on the websites of the institutes and in the course catalogue of the KIT. In general, the current seminar topics of each semester are already announced at the end of the previous semester. Furthermore for some seminars there is an application required.

The available places are listed on the internet: https://portal.wiwi.kit.edu.

Below you will find excerpts from events related to this course:

V	**Linked Data and the Semantic Web** 2512301, WS 18/19, 3 SWS, Open in study portal	**Seminar / Practical course (S/P)**

Description
The Linked Data principles are a set of practices for data publishing on the web. Linked Data builds on the web architecture and uses HTTP for data access, and RDF for describing data, thus aiming towards web-scale data integration. There is a vast amount of data available published according to those principles: recently, 4.5 billion facts have been counted with information about various domains, including music, movies, geography, natural sciences. Linked Data is also used to make web-pages machine-understandable, corresponding annotations are considered by the big search engine providers. On a smaller scale, devices on the Internet of Things can also be accessed using Linked Data which makes the unified processing of device data and data from the web easy.

In this practical seminar, students will build prototypical applications and devise algorithms that consume, provide, or analyse Linked Data. Those applications and algorithms can also extend existing applications ranging from databases to mobile apps.

For the seminar, programming skills or knowledge about web development tools/technologies are highly recommended. Basic knowledge of RDF and SPARQL are also recommended, but may be acquired during the seminar. Students will work in groups. Seminar meetings will take place as 'Block-Seminar'.

Notes
The exact dates and information for registration will be announced at the event page.

Learning Content
Topics of interest include, but are not limited to:

- Travel Security
- Geo data
- Linked News
- Social Media

V	**Real-World Challenges in Data Science and Analytics** 2512311, WS 18/19, 3 SWS, Open in study portal	**Seminar / Practical course (S/P)**

Notes
The exact dates and information for registration will be announced at the event page.

V	**Cooperation seminar: Innovative applications on single board computers as well as their economic relevance** 2512312, WS 18/19, 3 SWS, Open in study portal	**Seminar / Practical course (S/P)**

Description
This seminar is offered cooperatively by the Chair of Web Science (AIFB) and the Chair of Economic Policy (ECON).

The cooperation seminar deals with the technical realization of innovative applications using single board computers such as Arduino (https://www.arduino.cc) or Raspberry Pi (https://www.raspberrypi.org). These single board computers can be extended by various sensors and modules, thus fulfilling a wide range of tasks. Thus, the addition of a camera allows for example gesture and face detection, or the equipment with different sensors enables the measurement of temperature and perception of moving objects.

At the same time, the implications of cost-effective availability of these basic technologies are analyzed from an economic-scientific perspective. The spread and use of these single-board computers, as well as the concepts associated with their success, can have a decisive impact on innovation processes. The reasons and obstacles as well as their relevance to innovation are therefore also addressed from an economic perspective.

Microcomputers such as the Raspberry Pi, for example, are increasingly being used and expanded in the private environment, with numerous applications being possible in the household sector. They can be used as a monitoring system, as a home server or as an electronic func- tion opener. Likewise, due to their low cost, size and ease of use, they can also significantly support the development of innovative processes, for example in the development of prototypes.

Within the scope of this seminar, the possibilities of a single board computer are investigated using the Raspberry Pi. The students are to conceive, realize and present innovative applications in two-teams. Each team is provided with a Raspberry Pi. In addition to the realization of an innovative application, each team has to deal with and discuss an economic science issue. The use of the Raspberry Pi or the underlying concepts from an innovation-economic perspective are to be analyzed.

In addition to the Raspberry Pis, various sensors and expansion modules are also provided and can be purchased after consultation with the supervisors. Furthermore, it may be necessary to develop extensions in Python during the seminar. Previous knowledge in Python and Semantic Web technologies are therefore an advantage but not an imperative requirement.

Notes
The exact dates and information for registration will be announced at the event page.

Learning Content
Topics of interest include, but are not limited to:

- Smart Home Applications
- Environmental measurements
- Gesture control
- Security systems

V	**Emerging Trends in Critical Information Infrastructures** 2513400, WS 18/19, 2 SWS, Open in study portal	**Seminar (S)**

Description
The block seminar Emerging Trends in Critical Information Infrastructures aims to provide insights into emerging topics in the field of information systems and to offer students an opportunity to write their first academic paper alone or in a group of students. Each semester, different topics are offered around the lectures and research domains of Prof. Sunyaev's chair, especially Trusted Engineering, Digital Health, Internet Technologies as well as Auditing and Certifications. Students can also submit their own topic suggestions within the framework of the main topics specified in the respective semester.

V	**Seminar Service Science, Management & Engineering** 2595470, WS 18/19, 2 SWS, Open in study portal	**Seminar (S)**

Learning Content

Each Semester, the seminar will cover topics from a different selected subfield of Service Science, Management & Engineering. Topics include service innovation, service economics, service computing, transformation and coordination of service value networks as well as collaboration for knowledge intensive services.

See the KSRI website for more information about this seminar: www.ksri.kit.edu

Workload

The total workload for this course is approximately 120 hours. For further information see German version.

Literature

The student will receive the necessary literature for his research topic.

V **Knowledge Discovery and Data Mining**
2512300, SS 2019, 3 SWS, Open in study portal

Seminar / Practical course (S/P)

Description

The seminar includes different methods of machine learning and data mining. Participants of the seminar should have basic knowledge of machine learning and programming skills.

Notes

The exact dates and information for registration will be announced at the event page.

Learning Content

Domains of interest include, but are not limited to:

- Medicine
- Social Media
- Finance Market

Literature

Detailed references are indicated together with the respective subjects. For general background information look up the following textbooks:

- Mitchell, T.; Machine Learning
- McGraw Hill, Cook, D.J. and Holder, L.B. (Editors) Mining Graph Data, ISBN:0-471-73190-0
- Wiley, Manning, C. and Schütze, H.; Foundations of Statistical NLP, MIT Press, 1999.

V **Data Science & Real-time Big Data Analytics**
2513306, SS 2019, 2 SWS, Open in study portal

Seminar / Practical course (S/P)

Description

Event processing and real-time data are everywhere: financial market data, sensors, business intelligence, social media analytics, logistics. Many applications collect large volumes of data in real time and are increasingly faced with the challenge of being able to process them quickly and react promptly. The challenges of this real-time processing are currently also receiving a great deal of attention under the term "Big Data". The complex processing of real-time data requires both knowledge of methods for data analysis (data science) and their processing (real-time analytics). Seminar papers are offered on both of these areas as well as on interface topics, the input of own ideas is explicitly desired.

V **Seminar Service Science, Management & Engineering**
2595470, SS 2019, 2 SWS, Open in study portal

Seminar (S)

Learning Content

Each Semester, the seminar will cover topics from a different selected subfield of Service Science, Management & Engineering. Topics include service innovation, service economics, service computing, transformation and coordination of service value networks as well as collaboration for knowledge intensive services.

See the KSRI website for more information about this seminar: www.ksri.kit.edu

Workload

The total workload for this course is approximately 90 hours. For further information see German version.

Literature
The student will receive the necessary literature for his research topic.

T 6.129 Course: Seminar in Operations Research (Bachelor) [T-WIWI-103488]

Responsible: Prof. Dr. Stefan Nickel
                    Prof. Dr. Steffen Rebennack
                    Prof. Dr. Oliver Stein

Organisation: KIT Department of Economics and Management

Part of: M-INFO-102060 - Weitere Leistungen
                    M-WIWI-101826 - Seminarmodul Wirtschaftswissenschaften

Type	Credits	Recurrence	Version
Prüfungsleistung anderer Art	3	Each term	1

Events					
WS 18/19	2550131	Seminar zu Methodische Grundlagen des Operations Research (BA)	SWS	Seminar (S)	Stein, Mohr, Neumann
WS 18/19	2550491	Seminar: Recent Topics in OR	SWS	Seminar (S)	Nickel, Mitarbeiter
SS 2019	2550132	Seminar zur Mathematischen Optimierung (MA)	2 SWS	Seminar (S)	Stein, Mohr, Neumann
SS 2019	2550472	Seminar on Power Systems Optimization (Bachelor)	2 SWS	Seminar (S)	Rebennack, Assistenten
SS 2019	2550491	Seminar zur diskreten Optimierung	SWS	Block (B)	Nickel, Mitarbeiter
Exams					
WS 18/19	7900216_WS1819	Seminar in Operations Research (Bachelor)	Prüfung (PR)	Stein	
WS 18/19	7900262	Seminar in Operations Research (Bachelor)	Prüfung (PR)	Nickel	
SS 2019	7900017_SS2019	Seminar in Operations Research (Bachelor)	Prüfung (PR)	Stein	

Competence Certificate

The non examassessment (§4(2), 3 SPO 2007) or alternative exam assessment (§ 4(2), 3 SPO 2015)consists of

- a talk about the research topic of the seminar together with discussion,
- a written summary about the major issues of the topic and
- attending the discussions of the seminar

The grade is achieved by the weighted sum of the grades.

Prerequisites

None.

Recommendation

See seminar description in the course catalogue of the KIT (https://campus.kit.edu/)

Annotation

The listed seminar titles are placeholders. Currently offered seminars of each semester will be published on the websites of the institutes and in the course catalogue of the KIT. In general, the current seminar topics of each semester are already announced at the end of the previous semester. Furthermore for some seminars there is an application required.
The available places are listed on the internet: https://portal.wiwi.kit.edu.

Below you will find excerpts from events related to this course:

V Seminar zu Methodische Grundlagen des Operations Research (BA)

2550131, WS 18/19, SWS, Open in study portal   Seminar (S)

Learning Content

The current seminar topics are announced under http://kop.ior.kit.edu at the end of the preceding semester.

Workload

The total workload for this course is approximately 90 hours. For further information see German version.

Literature

References and relevant sources are announced at the beginning of the seminar.

V **Seminar: Recent Topics in OR** 2550491, WS 18/19, SWS, Open in study portal	**Seminar (S)**

Learning Content

The topics of the seminar will be announced at the beginning of the term in a preliminaty meeting. Dates will be announced on the internet.

Annotation

The seminar is offered in each term.

Workload

The total workload for this course is approximately 90 hours. For further information see German version.

Literature

Literature and relevant sources will be announced at the beginning of the seminar.

V **Seminar zur diskreten Optimierung** 2550491, SS 2019, SWS, Open in study portal	**Block (B)**

Learning Content

The topics of the seminar will be announced at the beginning of the term in a preliminaty meeting. Dates will be announced on the internet.

Annotation

The seminar is offered in each term.

Workload

The total workload for this course is approximately 90 hours. For further information see German version.

Literature

Literature and relevant sources will be announced at the beginning of the seminar.

T 6.130 Course: Seminar in Statistics (Bachelor) [T-WIWI-103489]

Responsible:	Prof. Dr. Oliver Grothe Prof. Dr. Melanie Schienle
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen M-WIWI-101826 - Seminarmodul Wirtschaftswissenschaften

Type Prüfungsleistung anderer Art	**Credits** 3	**Recurrence** Each term	**Version** 1

Events					
WS 18/19	2521310	Topics in Econometrics	2 SWS	Seminar (S)	Buse, Görgen

Competence Certificate

The non exam assessment (§4(2), 3 SPO 2007) or alternative exam assessment (§ 4(2), 3 SPO 2015) consists of

- a talk about the research topic of the seminar together with discussion,
- a written summary about the major issues of the topic and
- attending the discussions of the seminar

The grade is achieved by the weighted sum of the grades.

Prerequisites

None.

Recommendation

See seminar description in the course catalogue of the KIT (https://campus.kit.edu/)

Annotation

The listed seminar titles are placeholders. Currently offered seminars of each semester will be published on the websites of the institutes and in the course catalogue of the KIT. In general, the current seminar topics of each semester are already announced at the end of the previous semester. Furthermore for some seminars there is an application required.
The available places are listed on the internet: https://portal.wiwi.kit.edu.

Below you will find excerpts from events related to this course:

V Topics in Econometrics
2521310, WS 18/19, 2 SWS, Open in study portal

Seminar (S)

Annotation

In the winter semester 2018/19 the course will be held in English.

T   6.131 Course: Seminar Informatics A [T-INFO-104336]

Responsible: Prof. Dr. Sebastian Abeck
Organisation: KIT Department of Informatics
Part of: M-INFO-102058 - Seminarmodul Informatik
M-INFO-102060 - Weitere Leistungen

Type Prüfungsleistung anderer Art	**Credits** 3	**Version** 1

Events					
WS 18/19	2400091	Seminar: Designing and Conducting Experimental Studies	2 SWS	Seminar (S)	Exler, Schankin, Beigl, Pescara
WS 18/19	24844	Seminar: Ubiquitous Systems	2 SWS	Seminar (S)	Beigl, Pescara
Exams					
WS 18/19	7500096	Seminar in Cryptography		Prüfung (PR)	Geiselmann, Müller-Quade, Hofheinz
WS 18/19	7500097	Seminar in Security		Prüfung (PR)	Geiselmann, Müller-Quade, Hofheinz
WS 18/19	7500220	Seminar Ubiquitous Computing		Prüfung (PR)	Beigl
SS 2019	7500149	Seminar: Designing and Conducting Experimental Studies		Prüfung (PR)	Beigl

T 6.132 Course: Seminar: Legal Studies I [T-INFO-101997]

Responsible:	Prof. Dr. Thomas Dreier
Organisation:	KIT Department of Informatics
Part of:	M-INFO-101218 - Seminarmodul Recht
	M-INFO-102060 - Weitere Leistungen

Type	Credits	Recurrence	Version
Prüfungsleistung anderer Art	3	Each term	1

Events					
WS 18/19	24389	IT-Sicherheit und Recht	2 SWS	Seminar (S)	Schallbruch
SS 2019	2400041	Governance, Risk & Compliance	2 SWS	Seminar (S)	Herzig
SS 2019	2400061	Internet und Gesellschaft - gesellschaftliche Werte und technische Umsetzung	2 SWS	Seminar (S)	Bless, Boehm, Hartenstein, Mädche, Sunyaev, Zitterbart
SS 2019	24820	Current Issues in Patent Law	2 SWS	Seminar (S)	Melullis
Exams					
WS 18/19	7500035	Seminar: Legal Studies II		Prüfung (PR)	Marsch
WS 18/19	7500182	Seminar: Legal Studies II		Prüfung (PR)	Raabe, Dreier, Boehm
SS 2019	7500159	Seminar: Legal Studies I		Prüfung (PR)	Marsch

Below you will find excerpts from events related to this course:

V Internet und Gesellschaft - gesellschaftliche Werte und technische Umsetzung   Seminar (S)
2400061, SS 2019, 2 SWS, Open in study portal

Notes
Registration via https://portal.wiwi.kit.edu/ys/2708

T   6.133 Course: Services Marketing and B2B Marketing [T-WIWI-102806]

Responsible:	Prof. Dr. Martin Klarmann
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101424 - Grundlagen des Marketing

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	3	Each winter term	1

Events					
WS 18/19	2572158	Services Marketing and B2B Marketing	2 SWS	Lecture (V)	Klarmann
Exams					
WS 18/19	7900081	Services Marketing and B2B Marketing		Prüfung (PR)	Klarmann, Kim
WS 18/19	7900126	Services Marketing and B2B Marketing		Prüfung (PR)	Klarmann

Competence Certificate
The assessment consists of a written exam (60 minutes) (following §4(2), 1 of the examination regulation).

Prerequisites
None

Annotation
For further information please contact Marketing & Sales Research Group (marketing.iism.kit.edu).

Below you will find excerpts from events related to this course:

V   Services Marketing and B2B Marketing
2572158, WS 18/19, 2 SWS, Open in study portal   Lecture (V)

Learning Content
The aim of this course is to prepare students for two certain marketing perspectives. The service marketing is concentrated on the particularities coming up when a company sells services instead of products. Subjects in this section are for example:

- Measuring service quality
- Pricing services
- Management of service staff

The second part of the course contains a business-to-business marketing perspective. Topics are below others:

- Management of buying centers
- Competitive Bidding
- B2B-Branding

Annotation
For further information please contact Marketing & Sales Research Group (marketing.iism.kit.edu).

Workload
The total workload for this course is approximately 90 hours.

Literature
Homburg, Christian (2016), Marketingmanagement, 6. ed., Wiesbaden.

| T | **6.134 Course: Software Engineering I [T-INFO-101968]** |

Responsible: Prof. Dr.-Ing. Anne Koziolek
Prof. Dr. Ralf Reussner
Prof. Dr. Walter Tichy

Organisation: KIT Department of Informatics

Part of: M-INFO-101175 - Softwaretechnik I

Type Prüfungsleistung schriftlich	**Credits** 6	**Recurrence** Each summer term	**Version** 1

Events

SS 2019	24518	Softwaretechnik I	4 SWS	Lecture / Practice (VÜ)	Tichy, Weigelt, Hey

T   6.135 Course: Software Engineering I Pass [T-INFO-101995]

Responsible: Prof. Dr. Walter Tichy
Organisation: KIT Department of Informatics
Part of: M-INFO-101175 - Softwaretechnik I

Type	Credits	Recurrence	Version
Studienleistung	0	Each summer term	1

Events					
SS 2019	24518	Softwaretechnik I	4 SWS	Lecture / Practice (VÜ)	Tichy, Weigelt, Hey

T 6.136 Course: Software Engineering II [T-INFO-101370]

Responsible: Prof. Dr.-Ing. Anne Koziolek
Prof. Dr. Ralf Reussner
Prof. Dr. Walter Tichy

Organisation: KIT Department of Informatics

Part of: M-INFO-100833 - Softwaretechnik II
M-INFO-102060 - Weitere Leistungen

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	6	Each winter term	1

Events					
WS 18/19	24076	Software Engineering II	4 SWS	Lecture (V)	Koziolek
Exams					
WS 18/19	7500289	Software Engineering II		Prüfung (PR)	Koziolek
WS 18/19	7500358	Software Engineering II		Prüfung (PR)	Koziolek

Below you will find excerpts from events related to this course:

V Software Engineering II
24076, WS 18/19, 4 SWS, Open in study portal

Lecture (V)

Description
Students learn methods and techniques for systematic software development. Advanced topics of software engineering are covered.

Literature
Craig Larman, Applying UML and Patterns, 3rd edition, Prentice Hall, 2004. More references will be provided in the lectures.

T 6.137 Course: Special Topics in Information Systems [T-WIWI-109940]

Responsible:	Prof. Dr. Christof Weinhardt
Organisation:	KIT Department of Economics and Management
Part of:	M-WIWI-101434 - eBusiness und Service Management

Type	Credits	Recurrence	Version
Prüfungsleistung anderer Art	4,5	Each term	1

Competence Certificate

The assessment of this course is according to §4(2), 3 SPO in form of a written documentation, a presentation of the outcome of the conducted pracitcal components and an active participation in class.

Please take into account that, beside the written documentation, also a practical component (such as a survey or an implementation of an application) is part of the course. Please examine the course description for the particular tasks.

The final mark is based on the graded and weighted attainments (such as the written documentation, presentation, practical work and an active participation in class).

Prerequisites

see below

Modeled Conditions

The following conditions have to be fulfilled:

1. The course T-WIWI-102706 - Special Topics in Information Engineering & Management must not have been started.

Recommendation

None

Annotation

All the practical seminars offered at the chair of Prof. Dr. Weinhardt can be chosen in the Special Topics in Information Systems course. The current topics of the practical seminars are available at the following homepage: www.iism.kit.edu/im/lehre

The Special Topics Information Systems is equivalent to the practical seminar, as it was only offered for the major in "Information Management and Engineering" so far. With this course students majoring in "Industrial Engineering and Management" and "Economics Engineering" also have the chance of getting practical experience and enhance their scientific capabilities.

The Special Topics Information Systems can be chosen instead of a regular lecture (see module description). Please take into account, that this course can only be accounted once per module.

T	**6.138 Course: Special Topics of Applied Informatics [T-WIWI-102910]**

Responsible: Prof. Dr. Andreas Oberweis
Prof. Dr. Harald Sack
Prof. Dr. Ali Sunyaev
Prof. Dr. York Sure-Vetter
Prof. Dr. Melanie Volkamer
Prof. Dr.-Ing. Johann Marius Zöllner

Organisation: KIT Department of Economics and Management

Part of: M-INFO-102060 - Weitere Leistungen
M-WIWI-101476 - Geschäftsprozesse und Informationssysteme

Type Prüfungsleistung schriftlich	**Credits** 5	**Recurrence** Each term	**Version** 4

Exams				
WS 18/19	7900066	Interdisciplinary Approach to Verifiable E-Voting	Prüfung (PR)	Volkamer

Competence Certificate

The assessment of this course is a written or (if necessary) oral examination according to §4(2) of the examination regulation.
Depending on the particular course associated with this placeholder a bonus on the examination grade is possible.

Prerequisites

None

Annotation

This course can be used in particular for the acceptance of external courses whose content is in the broader area of applied informatics, but is not equivalent to another course of this topic.

T 6.139 Course: Statistical Modeling of Generalized Regression Models [T-WIWI-103065]

Responsible:	Dr. Wolf-Dieter Heller
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101599 - Statistik und Ökonometrie

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	4,5	Each winter term	1

Events					
WS 18/19	2521350	Statistische Modellierung von Allgemeinen Regressionsmodellen	2 SWS	Lecture (V)	Heller
Exams					
WS 18/19	7900146	Statistical Modeling of generalized regression models		Prüfung (PR)	Heller

Competence Certificate

The assessment of this course is a written examination (60 min) according to §4(2), 1 of the examination regulation.

Prerequisites

None

Recommendation

Knowledge of the contents covered by the course "Economics III: Introduction in Econometrics" [2520016]

Below you will find excerpts from events related to this course:

V Statistische Modellierung von Allgemeinen Regressionsmodellen
2521350, WS 18/19, 2 SWS, Open in study portal   Lecture (V)

Annotation

Knowledge of the contents covered by the course "Economics III: Introduction in Econometrics" [2520016]

Workload

The total workload for this course is approximately 135 hours (4.5 credits).

regular attendance: 30 hours

self-study: 65 hours

exam preparation: 40 hours

T 6.140 Course: Statistics I [T-WIWI-102737]

Responsible:	Prof. Dr. Oliver Grothe
	Prof. Dr. Melanie Schienle
Organisation:	KIT Department of Economics and Management
Part of:	M-WIWI-101432 - Einführung in die Statistik

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	5	Each summer term	1

Events					
SS 2019	2600008	Statistics I	4 SWS	Lecture (V)	Schienle
SS 2019	2600009	Tutorien zu Statistik I	2 SWS	Practice (Ü)	Schienle, Rüter, Bitzer
Exams					
WS 18/19	7900140	Statistics I		Prüfung (PR)	Grothe

Competence Certificate

The assessment consists of a written exam according to Section 4 (2), 1 of the examination regulation.

The exam takes place at the end of the lecture period or at the beginning of the recess period. The re-examination takes place in the following semester.

Prerequisites

None

Below you will find excerpts from events related to this course:

V Statistics I
2600008, SS 2019, 4 SWS, Open in study portal   **Lecture (V)**

Learning Content

A. Descriptive Statistics: univariate und bivariate analysis

B. Probability Theory: probability space, conditional and product probabilities

C. Random variables: location and shape parameters, dependency measures, concrete distribution models

Workload

150 hours (5.0 Credits).

Literature

Skriptum: Kurzfassung Statistik I

Elective literature:

Bamberg, G., Baur, F. und Krapp, M.: Statistik, 15. überarb. Auflage. Oldenbourg, München 2009, ISBN 978-3486590883.

Fahrmeir, L., Heumann, C., Künstler, R., Pigeot, I. und Tutz, G.: Statistik - Der Weg zur Datenanalyse, 8. Auflage. Springer Spektrum. Berlin 2016, ISBN 978-3-662-50371-3.

Mosler, K. und Schmid, F.: Beschreibende Statistik und Wirtschaftsstatistik, 4. akt. und verb. Auflage, Springer, Berlin 2009, ISBN 978-3642015564.

Mosler, K. und Schmid, F.: Wahrscheinlichkeitsrechnung und schließende Statistik, 4. verb. Aufl., Springer, Berlin 2011, ISBN 978-3642150098.

Stock, J.H. und Watson M.W.: Introduction to Econometrics, 3. Auflage, Prentice Hall 2014, ISBN 978-1292071312

Stocker, T.C. und Steinke I.: Statistik: Grundlagen und Methodik. De Gruyter Oldenbourg, Berlin 2016 ISBN-13: 978-3110353884.

T 6.141 Course: Statistics II [T-WIWI-102738]

Responsible:	Prof. Dr. Oliver Grothe
	Prof. Dr. Melanie Schienle
Organisation:	KIT Department of Economics and Management
Part of:	M-WIWI-101432 - Einführung in die Statistik

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	5	Each winter term	1

Events					
WS 18/19	2610020	Statistics II	4 SWS	Lecture (V)	Grothe
WS 18/19	2610021	Tutorien zu Statistik II	2 SWS	Tutorial (Tu)	Grothe, Rüter, Bitzer
WS 18/19	2610022	PC-Praktikum zu Statistik II	2 SWS	Practice (PÜ)	Grothe, Rüter, Bitzer
Exams					
WS 18/19	7900217	Statistics II		Prüfung (PR)	Grothe
SS 2019	7900029	Statistics II		Prüfung (PR)	Grothe

Competence Certificate

The assessment consists of a written exam according to Section 4 (2), 1 of the examination regulation.

The exam takes place at the end of the lecture period or at the beginning of the recess period. The re-examination takes place in the following semester.

Prerequisites

None

Recommendation

It ist recommended to attend the course *Statistics I* [2600008] before the course *Statistics II* [2610020].

Below you will find excerpts from events related to this course:

V Statistics II
2610020, WS 18/19, 4 SWS, Open in study portal

Lecture (V)

Learning Content

D. Sampling and Estimation Theory: Sampling distributions, estimators, point and interval estimation
E. Test Theory: General Principles of Hypothesis Testing, Concrete 1- and 2-Sampling Tests
F. Regression analysis: Simple and multiple linear regression, statistical inference

Workload

150 hours (5.0 Credits).

Literature

Script: Kurzfassung Statistik II

Elective literature:

Bamberg, G., Baur, F. und Krapp, M.: Statistik, 15. überarb. Auflage. Oldenbourg, München 2009, ISBN 978-3486590883.

Fahrmeir, L., Heumann, C., Künstler, R., Pigeot, I. und Tutz, G.: Statistik - Der Weg zur Datenanalyse, 8. Auflage. Springer Spektrum. Berlin 2016, ISBN 978-3-662-50371-3.

Mosler, K. und Schmid, F.: Beschreibende Statistik und Wirtschaftsstatistik, 4. akt. und verb. Auflage, Springer, Berlin 2009, ISBN 978-3642015564.

Mosler, K. und Schmid, F.: Wahrscheinlichkeitsrechnung und schließende Statistik, 4. verb. Aufl., Springer, Berlin 2011, ISBN 978-3642150098.

Stock, J.H. und Watson M.W.: Introduction to Econometrics, 3. Auflage, Prentice Hall 2014, ISBN 978-1292071312

Stocker, T.C. und Steinke I.: Statistik: Grundlagen und Methodik. De Gruyter Oldenbourg, Berlin 2016 ISBN-13: 978-3110353884.

T 6.142 Course: Tactical and Operational Supply Chain Management [T-WIWI-102714]

Responsible:	Prof. Dr. Stefan Nickel
Organisation:	KIT Department of Economics and Management
Part of:	M-INFO-102060 - Weitere Leistungen
	M-WIWI-101413 - Anwendungen des Operations Research
	M-WIWI-101421 - Supply Chain Management
	M-WIWI-103337 - Optimierung unter Unsicherheit

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	4,5	Each summer term	3

Events					
SS 2019	2550486	**Taktisches und operatives SCM**	2 SWS	Lecture (V)	Nickel
SS 2019	2550487	**Übungen zu Taktisches und operatives SCM**	1 SWS	Practice (Ü)	Pomes
Exams					
WS 18/19	7900220	**Tactical and Operational Supply Chain Management**		Prüfung (PR)	Nickel

Competence Certificate
The assessment consists of a written exam (60 minutes) according to Section 4(2), 1 of the examination regulation.

The exam takes place in every the semester.

Prerequisite for admission to examination is the succesful completion of the online assessments.

Prerequisites
Prerequisite for admission to examination is the succesful completion of the online assessments.

Recommendation
None

Annotation
The lecture is held in every summer term. The planned lectures and courses for the next three years are announced online.

Below you will find excerpts from events related to this course:

V Taktisches und operatives SCM
2550486, SS 2019, 2 SWS, Open in study portal   Lecture (V)

Description
Since the classical work 'Theory of the Location of Industries' of Weber from 1909, the determination of an optimal location of a new facility with respect to existing customers is strongly connectedto strategical logistics planning. Strategic decisions concerning the location of facilities as production plants, distribution centers or warehouses are of high importance for the rentability of supply chains. Thoroughly carried out, location planning allows an efficient flow of materials and leads to lower costs and increased customer service.
Subject of the course is an introduction to the most important terms and definitions in location planning as well as the presentation of basic quantitative location planning models. Furthermore, specialized location planning models for Supply Chain Management will be addressed as they are part in many commercial SCM tools for strategic planning tasks.

Learning Content
The lecture covers basic quantitative methods in location planning in the context of strategic Supply Chain Planning. Besides the discussion of several criteria for the evaluation of the locations of facilities, the students are acquainted with classical location planning models (planar models, network models and discrete models) and advanced location planning models designed for Supply Chain Management (single-period and multi-period models).The exercisesaccompanying the lecture offer the possibility to apply the considered models to practical problems.

Annotation
The lecture is held in every summer term. The planned lectures and courses for the next three years are announced online.

Literature
Elective Literature

- Daskin: Network and Discrete Location: Models, Algorithms, and Applications, Wiley, 1995
- Domschke, Drexl: Logistik: Standorte, 4. Auflage, Oldenbourg, 1996
- Francis, McGinnis, White: Facility Layout and Location: An Analytical Approach, 2nd Edition, Prentice Hall, 1992
- Love, Morris, Wesolowsky: Facilities Location: Models and Methods, North Holland, 1988
- Thonemann: Operations Management - Konzepte, Methoden und Anwendungen, Pearson Studium, 2005

T   6.143 Course: Technical Conditions Met [T-WIWI-106623]

Organisation: KIT Department of Economics and Management
Part of: M-WIWI-101599 - Statistik und Ökonometrie

Type	Credits	Recurrence	Version
Studienleistung	0	Each term	1

Competence Certificate

This module element is intended to record the Bachelor-examination "Introduction to Game Theory". In the master module M-WIWI-101453 "Applied Strategic Decisions", this means that the obligatory course "Advanced Game Theory" is not required.

Prerequisites

None

T 6.144 Course: Telematics [T-INFO-101338]

Responsible: Prof. Dr. Martina Zitterbart
Organisation: KIT Department of Informatics
Part of: M-INFO-101194 - Telematics
M-INFO-102060 - Weitere Leistungen

Type Prüfungsleistung schriftlich	Credits 6	Recurrence Each winter term	Version 1

Events					
WS 18/19	24128	Telematics	3 SWS	Lecture (V)	Bauer, Friebe, Heseding, Hock, Zitterbart
Exams					
WS 18/19	7500166	Telematics		Prüfung (PR)	Zitterbart

Below you will find excerpts from events related to this course:

V	**Telematics** 24128, WS 18/19, 3 SWS, Open in study portal	Lecture (V)

Description
The lecture covers (i.a.) protocols, architectures, as well as methods and algorithms, for routing and establishing reliable end-to-end connections in the Internet. In addition to various methods for media access control in local area networks, the lecture also covers other communication systems, e.g. circuit-switched systems such as ISDN. Participants should also have understood the possibilities for managing and administering networks

T 6.145 Course: Theoretical Foundations of Computer Science [T-INFO-103235]

Responsible:	Prof. Dr. Jörn Müller-Quade
	Prof. Dr. Peter Sanders
	Prof. Dr. Dorothea Wagner
Organisation:	KIT Department of Informatics
Part of:	M-INFO-101189 - Theoretische Informatik

Type	Credits	Recurrence	Version
Prüfungsleistung schriftlich	6	Each winter term	1

Events					
WS 18/19	24005	Theoretical Foundations of Computer Science	3/1 SWS	Lecture (V)	Wagner, Brückner, Ueckerdt, Sauer
Exams					
WS 18/19	7500251	Theoretical Foundations of Computer Science		Prüfung (PR)	Wagner, Ueckerdt

T 6.146 Course: Welfare Economics [T-WIWI-102610]

Responsible: Prof. Dr. Clemens Puppe
Organisation: KIT Department of Economics and Management
Part of: M-INFO-102060 - Weitere Leistungen
M-WIWI-101501 - Wirtschaftstheorie

Type Prüfungsleistung schriftlich	**Credits** 4,5	**Recurrence** Each summer term	**Version** 2

Events					
SS 2019	2520517	Welfare Economics	SWS	Lecture (V)	Puppe, Rollmann
SS 2019	2520518	Übung zur Wohlfahrtstheorie	SWS	Practice (Ü)	Puppe, Rollmann

Competence Certificate
The assessment consists of a written exam at the end of the semester (according to Section 4 (2), 1 or 2 of the examination regulation).

Prerequisites
The course *Economics I: Microeconomics*[2610012] has to be completed beforehand.

Modeled Conditions
The following conditions have to be fulfilled:

1. The course **T-WIWI-102708 - Economics I: Microeconomics** must have been passed.

Recommendation
None

Below you will find excerpts from events related to this course:

V Welfare Economics
2520517, SS 2019, SWS, Open in study portal

Lecture (V)

Learning Content
The lecture "Welfare economics" deals with the question of efficiency and distributional properties of economic allocations, in particular allocations of market equilibria. The lecture is based on the two welfare theorems: The first welfare theorem (under weak preconditions) says that every competitive equilibrium is efficient.

According to the second welfare theorem (under stronger preconditions), every efficient allocation can be preserved as a competetive equilibrium through adequate choices of initial endowments. Afterwards, the terms and definitions of envy-freeness and the related concept of egalitarian equivalence in the context of the general theory of equilibrium will be discussed.

The second part of the lecture deals with the principle of "social justice" (i.e. distributational justice).The fundamental principles of utilitarism, Rawl's theory of justice as well as John Roemer's theory of equality of opportunity are explained and critically analyzed.

Annotation
The course will be held every two years in the summer.

Workload
The total workload for this course is approximately 135 hours. For further information see German version.

Literature
Elective literature:

- J. Rawls: *A Theory of Justice*. Harvard University Press (1971)
- J. Roemer: *Theories of Distributive Justice*. Harvard University Press (1996)

T   6.147 Course: Wildcard eBusiness and Service Management [T-WIWI-109808]

Organisation: University
Part of: M-WIWI-101434 - eBusiness und Service Management

Type	Credits	Version
Prüfungsleistung anderer Art	4,5	1

T 6.148 Course: Wildcard Supply Chain Management [T-WIWI-109803]

Organisation: University
Part of: M-WIWI-101421 - Supply Chain Management

Type	Credits	Version
Prüfungsleistung anderer Art	4,5	1

T 6.149 Course: Wildcard Supply Chain Management [T-WIWI-109802]

Organisation: University

Part of: M-WIWI-101421 - Supply Chain Management

Type	Credits	Version
Prüfungsleistung anderer Art	4,5	1