Julius-Maximilians-
UNIVERSITÄT
WÜRZBURG

Subdivided Module Catalogue

for the Subject

Information Systems

as a Master's with 1 major

with the degree "Master of Science"

(120 ECTS credits)

Examination regulations version: 2024
Responsible: Faculty of Business Management and Economics

Learning Outcomes

German contents and learning outcome available but not translated yet.
Der Master-Studiengang Information Systems wird von der Wirtschaftswissenschaftlichen Fakultät der JMU als forschungsorientierter Studiengang mit dem Abschluss „Master of Science" (M. Sc.) im Rahmen eines konsekutiven Bachelor- und Master- Modells angeboten. Der Grad des Master of Science stellt einen weiteren forschungsorientierten und berufsqualifizierenden Abschluss dar; die im Rahmen des Masterstudiums erworbene Qualifikation entspricht der eines Diplom-Wirtschaftsinformatikers bzw. einer Diplom-Wirtschaftsinformatikerin.
Im Masterstudiengang Information Systems erwerben die Studierenden vertiefte Kenntnisse und Fähigkeiten im Bereich der Wirtschaftsinformatik und erlangen so eine hohe wissenschaftliche und an¬ wendungsbezogene Qualifikation und Selbstständigkeit auf diesem Gebiet. Die Studierenden lernen Aufgabenstellungen und Systeme der Wirtschaftsinformatik zu analysieren, Defizite zu identifizieren und unter Einsatz etablierter sowie neuer Methoden und Techniken systematisch eine konzeptionell neue bzw. verbesserte Lösung zu erarbeiten. Durch die Master-Prüfung weist der Kandidat bzw. die Kandidatin nach, dass er bzw. sie fundierte Fachkenntnisse erworben hat und Aufgaben dieser Themenbereiche selbständig bearbeiten kann.
Die Masterprüfung führt zu einem zweiten berufsqualifizierenden Abschluss, welcher auf einem Bachelorstudiengang im Bereich Wirtschaftsinformatik bzw. auf einem wirtschaftswissenschaftlichen Bachelorstudiengang mit einer Schwerpunktsetzung im Bereich Wirtschaftsinformatik aufbaut. Durch die Masterprüfung wird festgestellt, ob die Studierenden die Zusammenhänge im Bereich Wirtschaftsinformatik so beherrschen, dass sie einen eigenen Forschungsbeitrag darin leisten können.
Durch die Ausbildung und Schulung des analytischen Denkens erwerben die Studierenden die Fähigkeit, sich später in die an sie herangetragenen Aufgabengebiete einzuarbeiten und insbesondere das bereits aus dem Bachelorstudium erworbene Grundwissen in einem Masterstudiengang selbständig anzuwenden sowie auf neue Aufgabenstellungen zu übertragen. Die Absolventinnen und Absolventen sind in der Lage, Informationen im ökonomischen Kontext differenziert zu betrachten und sie mit geeigneten Mo¬ dellen und Methoden zu analysieren und zu bewerten. Unter Berücksichtigung ethischer und ökologischer Fragestellungen können sie Potenziale und Risiken abschätzen sowie nachhaltige Verbesserungen oder Lösungen entwickeln. Ihre Urteile sind wissenschaftlich fundiert und beziehen die Abschätzung ökologischer und gesellschaftlicher Folgen ein. Die Absolventinnen und Absolventen sind in der Lage, ihre Entscheidungen zu erläutern und unter Beachtung wissenschaftlicher Grundsätze zu verteidigen.
Die Absolventinnen und Absolventen können am wissenschaftlichen Diskurs mit Fachvertreterinnen und Fachvertretern teilnehmen. Sie haben die notwendigen unternehmerischen, interkulturellen und Innovationskompetenzen für verantwortungsvolle Positionen in internationalen Teams und Unternehmen erworben. Neben Tätigkeiten in der Praxis sollen die Absolventen bzw. Absolventinnen befähigt werden, in Universitäten und wissenschaftlichen Einrichtungen tätig zu werden.
Zum Erreichen der Ziele ist ein hohes Maß an Eigeninitiative der Studierenden erforderlich. Studieren bedeutet insbesondere auch ein Selbststudium und das Studieren in Arbeitsgruppen. Die wissenschaftliche Literatur ist dabei eine unentbehrliche Hilfe.
Für den Erfolg im Studium und den beruflichen Erfolg nach dem Studium sind die Beherrschung der englischen Sprache und möglichst einer weiteren Fremdsprache in Wort und Schrift sowie Kenntnisse in Rhetorik und Präsentationstechniken besonders förderlich. Die Entwicklung dieser Kenntnisse fordert die eigene Initiative der Studierenden über das Lehrangebot hinaus. Das Studium fördert die Persönlichkeitsentwicklung und Ausbildung interkultureller Kompetenzen durch entsprechende Lehrangebote (auch in englischer Sprache) sowie die Förderung von Auslandsaufenthalten durch zahlreiche Partnerprogramme und die vereinfachte Anerkennung von im Ausland erworbenen Leistungen.

Abbreviations used

Course types: **E** = field trip, **K** = colloquium, **O** = conversatorium, **P** = placement/lab course, **R** = project, **S** = seminar, **T** = tutorial, **Ü** = exercise, **V** = lecture

Term: **SS** = summer semester, **WS** = winter semester

Methods of grading: **NUM** = numerical grade, **B/NB** = (not) successfully completed

Regulations: **(L)ASPO** = general academic and examination regulations (for teaching-degree programmes), **FSB** = subject-specific provisions, **SFB** = list of modules

Other: **A** = thesis, **LV** = course(s), **PL** = assessment(s), **TN** = participants, **VL** = prerequisite(s)

Conventions

Unless otherwise stated, courses and assessments will be held in German, assessments will be offered every semester and modules are not creditable for bonus.

Notes

Should there be the option to choose between several methods of assessment, the lecturer will agree with the module coordinator on the method of assessment to be used in the current semester by two weeks after the start of the course at the latest and will communicate this in the customary manner.

Should the module comprise more than one graded assessment, all assessments will be equally weighted, unless otherwise stated below.

Should the assessment comprise several individual assessments, successful completion of the module will require successful completion of all individual assessments.

In accordance with

the general regulations governing the degree subject described in this module catalogue:

ASPO2015

associated official publications (FSB (subject-specific provisions)/SFB (list of modules)):

20-Mar-2024 (2024-29)

This module handbook seeks to render, as accurately as possible, the data that is of statutory relevance according to the examination regulations of the degree subject. However, only the FSB (subject-specific provisions) and SFB (list of modules) in their officially published versions shall be legally binding. In the case of doubt, the provisions on, in particular, module assessments specified in the FSB/SFB shall prevail.

The subject is divided into

Abbreviation	Module title	ECTS credits	Method of grading	page
Compulsory Courses (20 ECTS credits)				
12-M-IS-242-m01	Information Systems	5	NUM	92
12-M-PSI-242-m01	Project Seminar	15	NUM	101
Compulsory Electives I: Fundamentals Computer Science (20 ECTS credits)				
10-I=IR-212-m01	Information Retrieval	5	NUM	14
10-I=SSS-232-m01	Security of Software Systems	5	NUM	36
10-I=SAR-161-m01	Software Architecture	5	NUM	30
10-I=KI1-212-m01	Artificial Intelligence 1	5	NUM	15
10-I=ST-232-m01	Discrete Event Simulation	5	NUM	38
10-I=APR-212-m01	Advanced Programming	5	NUM	9
10-I=NLP-212-m01	Machine Learning for Natural Language Processing	5	NUM	22
10-I=KI2-212-m01	Artificial Intelligence 2	5	NUM	17
10-I=PNN-212-m01	Programming with neural nets	5	NUM	28
10-I=STM-162-m01	NLP and Text Mining	5	NUM	40
10-I=SB-212-m01	Systems Benchmarking	5	NUM	32
10-AI=CV1-242-m01	Computer Vision 1	5	NUM	7
10-I=IP-222-m01	Image Processing and Computational Photography	5	NUM	12
10-I=MNLP-232-m01	Multilingual NLP	5	NUM	20
10-I=SNA-232-m01	Statistical Network Analysis	5	NUM	34
10-I=OR-232-m01	Operations Research	5	NUM	24
10-I=MLN1-232-m01	Machine Learning for Networks 1	5	NUM	18
10-I=DM-232-m01	Data Science	5	NUM	11
Compulsory Electives II: Tracks (40 ECTS credits) Out of the four tracks, students may select two.				
Track 1: Enterprise Systems (20 ECTS credits)				
Core (10 ECTS credits)				
12-M-GPU-242-m01	Business Software 1: Management and Implementation of Information Systems	5	NUM	86
12-M-ERP-242-m01	Business Software 2: Data-driven Business Process Management and Automation	5	NUM	79
Core Electives (10 ECTS credits)				
10-I=PM-212-m01	Professional Project Management	5	NUM	26
10-I=PRJAK-212-m01	Project - Current Topics in Computer Science	5	NUM	29
12-M-SBM-242-m01	Industrial Management 1	5	NUM	106
12-M-SPM-242-m01	Industrial Management 3	5	NUM	114
12-M-HRM-242-m01	Human Resource Management and Industrial Relations	5	NUM	87
12-M-PROM-242-m01	Project Management and Control	5	NUM	100
10-I=SAR-161-m01	Software Architecture	5	NUM	30
12-M-CIU-242-m01	Change Management	5	NUM	72
12-M-ESE-242-m01	Entrepreneurship in Software-Ecosystems: Start & Scale Up, Venture Capital, Private Equity, EXIT	5	NUM	82
12-M-APW1-161-m01	Selected Topics in Business Management and Economics 1	5	NUM	47
12-M-AWI1-242-m01	Selected Topics in Business Information Systems 1	5	NUM	65

12-M-TES-242-m01	Topics in Enterprise Systems	5	NUM	128
Track 2: Business Analytics (20 ECTS credits)				
Core (10 ECTS credits)				
12-M-DSS-242-m01	Decision Support Systems	5	NUM	74
12-M-AOLM-182-m01	Advanced Operations & Logistics Management	5	NUM	43
12-M-BI-242-m01	Analytical Information Systems	5	NUM	69
Core Electives (10 ECTS credits)				
12-M-BI-242-m01	Analytical Information Systems	5	NUM	69
12-M-EAI-242-m01	Enterprise AI	5	NUM	75
10-I=OR-232-m01	Operations Research	5	NUM	24
12-M-GLSC-182-m01	Global Logistics & Supply Chain Management	5	NUM	84
12-M-ATDS-242-m01	Topics in Data Science	5	NUM	56
12-M-TE-242-m01	Applied Data Science in Business and Economics	5	NUM	125
12-M-TDS-242-m01	Applied Data Analysis and Machine Learning	5	NUM	123
12-M-OEDT-231-m01	Organizational Economics and Digital Transformation	5	NUM	99
12-M-APW2-161-m01	Selected Topics in Business Management and Economics 2	5	NUM	49
12-M-AWI2-242-m01	Selected Topics in Business Information Systems 2	5	NUM	66
12-M-TBA-242-m01	Topics in Business Analytics	5	NUM	122
Track 3: Electronic Business (20 ECTS credits)				
Core (10 ECTS credits)				
12-M-IBS-242-m01	E-Business Strategies	5	NUM	89
12-M-MUS-242-m01	Mobile and Ubiquitous Business	5	NUM	98
Core Electives (10 ECTS credits)				
12-M-UGF1-242-m01	Corporate Entrepreneurship and Innovation	5	NUM	130
12-M-UGF2-182-m01	Corporate Strategy	5	NUM	132
12-M-UGF3-242-m01	Digital Entrepreneurship and Digital Transformation	5	NUM	134
12-M-MA-242-m01	Marketing Analytics	5	NUM	95
12-M-EC1-242-m01	E-Commerce	5	NUM	77
12-M-SMGS-242-m01	Strategic Management of Global Supply Chains	5	NUM	112
12-M-INST-242-m01	Strategic Managerial Accounting	5	NUM	91
12-M-APW3-161-m01	Selected Topics in Business Management and Economics 3	5	NUM	51
12-M-AWI3-242-m01	Selected Topics in Business Information Systems 3	5	NUM	67
12-M-TEB-242-m01	Topics in Electronic Business	5	NUM	126
Track 4: Artifical Intelligence (20 ECTS credits)				
Core (10 ECTS credits)				
12-M-EAI-242-m01	Enterprise AI	5	NUM	75
12-M-BI-242-m01	Analytical Information Systems	5	NUM	69
Core Electives (10 ECTS credits)				
10-AI=CV1-242-m01	Computer Vision 1	5	NUM	7
12-M-ATDS-242-m01	Topics in Data Science	5	NUM	56
12-M-MA-242-m01	Marketing Analytics	5	NUM	95
12-M-TE-242-m01	Applied Data Science in Business and Economics	5	NUM	125
10-I=SNA-232-m01	Statistical Network Analysis	5	NUM	34
10-I=NLP-212-m01	Machine Learning for Natural Language Processing	5	NUM	22
10-I=MNLP-232-m01	Multilingual NLP	5	NUM	20
12-M-APW4-161-m01	Selected Topics in Business Management and Economics 4	5	NUM	53

12-M-AWI4-242-m01	Selected Topics in Business Information Systems 4	5	NUM	68
12-M-TAI-242-m01	Topics in Artificial Intelligence	5	NUM	121
Compulsory Electives III: Seminar (10 ECTS credits)				
12-M-MSS-242-m01	Advanced Seminar: Marketing Strategy	10	NUM	97
12-M-SI-242-m01	Advanced Seminar: Industrial Management	10	NUM	110
12-M-SER-242-m01	Advanced Seminar: Financial Accounting	10	NUM	109
12-M-SBL-242-m01	Advanced Seminar: Corporate Finance	10	NUM	105
12-M-SSL-242-m01	Advanced Seminar: Analytical Tax Research	10	NUM	117
12-M-ES-242-m01	Advanced Seminar: Enterprise Systems	10	NUM	81
12-M-SPO-242-m01	Advanced Seminar: Topics in Personnel Economics and Organizational Theory	10	NUM	116
12-M-SAS-242-m01	Advanced Seminar: Entrepreneurship and Management	10	NUM	103
12-M-AUAS-242-m01	Advanced Seminar: Managerial Accounting	10	NUM	64
12-M-BUA-242-m01	Business Analytics	10	NUM	70
12-M-LSCM-242-m01	Seminar: Applied Analytics in Logistics & Supply Chain Management	10	NUM	93
12-M-WUE-242-m01	Economic and Business Ethics	10	NUM	138
12-M-SWJ-242-m01	Practical Seminar: Economic Journalism	10	NUM	119
12-M-WPJ-242-m01	Project Modul: Journalism in Economic Policy	10	NUM	136
12-M-APS-242-m01	Project: Selected Topics in Business Management and Economics I	10	NUM	46
12-M-APS2-242-m01	Project: Selected Topics in Business Management and Economics II	10	NUM	45
12-M-ATIÖ1-242-m01	International Economics 1	10	NUM	58
12-M-ATIÖ2-242-m01	International Economics 2	10	NUM	60
12-M-ATIÖ3-242-m01	International Economics 3	10	NUM	62
12-M-AMTIÖ-242-m01	Seminar: International Economics	10	NUM	42
12-M-SIO-242-m01	Advanced Seminar: Industrial Organization	10	NUM	111
12-M-SWOSP-242-m01	Advanced Seminar: Labour Economics	10	NUM	120
12-M-SV5-242-m01	Advanced Seminar: Public Finance	10	NUM	118
12-M-SOE-242-m01	Advanced Seminar: Econometrics	10	NUM	113
12-M-MEW-242-m01	Seminar: Macroeconomics and Quantitative Economic Research	10	NUM	96
12-M-ATC-242-m01	Seminar: Strategic Incentive Design	10	NUM	55
12-M-SEBS-242-m01	Seminar: E-Business Strategies	10	NUM	108
12-M-TEE-242-m01	Seminar: Topics in Economics and Ethics of Artificial Intelligence	10	NUM	127
12-M-RS-242-m01	Research Seminar in Applied Data Science	10	NUM	102
12-M-UAAI-242-m01	Enterprise AI and Urban Analytics	10	NUM	129
12-M-ICP-242-m01	Seminar: International Climate Policy	10	NUM	90
Thesis (30 ECTS credits)				
12-WI-MA-192-m01	Master Thesis Information Systems	30	NUM	139

Module title			Abbreviation
Computer Vision 1			10-AI=CV1-242-m01
Module coordinator		**Module offered by**	
holder of the Chair of Computer Science IV		Institute of Computer Science	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

The lecture provides knowledge about current methods and algorithms in the field of computer vision. Important basics as well as the most recent approaches to image representation, image processing and image analysis are taught.
Topics include data representation, image acquisition, restoration and enhancement, features, object modeling, image and video understanding, deep learning and generative methods and applications.
Actual models and methods of machine learning as well as their technical backgrounds are presented and their respective applications in Computer Vision are shown.

Intended learning outcomes

Students have fundamental knowledge of problems and techniques in the field of computer vision and are able to independently identify and apply suitable methods for concrete problems.

- Overview of the most important concepts of image representation, image analysis, machine learning and algorithms from Computer Vision
- Gaining experience through home assignments, practical computer and programming exercises
- Providing a sound solid background knowledge for the advanced Computer Vision 2 course

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Written examination (approx. 60 to 120 minutes)
If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate).
Language of assessment: English
Creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Artificial Intelligence & Extended Reality (2024)
Master's degree (1 major) Artificial Intelligence (2024)
Master's degree (1 major) Management (2024)

Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Advanced Programming			10-I=APR-212-m01
Module coordinator		**Module offered by**	
holder of the Chair of Computer Science II		Institute of Computer Science	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

With the knowledge of basic programming, taught in introductory lectures, it is possible to realize simpler programs. If more complex problems are to be tackled, suboptimal results like long, incomprehensible functions and code duplicates occur. In this lecture, further knowledge is to be conveyed on how to give programs and code a sensible structure. Also, further topics in the areas of software security and parallel programming are discussed.

Intended learning outcomes

Students learn advanced programming paradigms. Different patterns are then implemented in multiple languages and their efficiency measured using standard metrics. In addition, parallel processing concepts are introduced culminating in the use of GPU architectures for extremely quick processing.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 60 to 120 minutes).
If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate).
creditable for bonus
Language of assessment: German and/or English

Allocation of places

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Additional information

Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): SE,KI,LR, HCI, ES,GE,SEC

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) eXtended Artificial Intelligence (xtAI) (2020)
Master's degree (1 major) Computer Science (2021)
Master's degree (1 major) Aerospace Computer Science (2021)
Master's degree (1 major) Computational Mathematics (2022)
Master's degree (1 major) Information Systems (2022)
Master's degree (1 major) Mathematics (2022)
Master's degree (1 major) Computer Science (2023)
Master's degree (1 major) Aerospace Computer Science (2023)

Master's degree (1 major) Artificial Intelligence & Extended Reality (2024)
Master's degree (1 major) Artificial Intelligence (2024)
Master's degree (1 major) Computational Mathematics (2024)
Master's degree (1 major) Mathematics (2024)
Master's degree (1 major) Information Systems (2024)

Module title			Abbreviation
Data Science			10-I=DM-232-m01
Module coordinator		**Module offered by**	
holder of the Chair of Computer Science X		Institute of Computer Science	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Foundations in the following areas: definition of data mining and knowledge discovery in databases, process model, relationship to data warehouse and OLAP data preprocessing, data visualisation, unsupervised learning methods (cluster- and association methods), supervised learning (e. g. Bayes classification, KNN, decision trees, SVM), learning methods for special data types, further learning paradigms.

Intended learning outcomes

The students possess a theoretical and practical knowledge of typical methods and algorithms in the area of data mining and machine learning. They are able to solve practical knowledge discovery problems with the help of the knowledge acquired in this course and by using the KDD process. They have acquired experience in the use or implementation of data mining algorithms.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 60 to 120 minutes).
If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate).
Language of assessment: German and/or English
creditable for bonus

Allocation of places

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Additional information

Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): IT,KI,HCI,GE,SEC

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Information Systems (2019)
Master's degree (1 major) Information Systems (2022)
Master's degree (1 major) Computer Science (2023)
Master's degree (1 major) Aerospace Computer Science (2023)
Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Image Processing and Computational Photography			10-I=IP-222-m01
Module coordinator		**Module offered by**	
holder of the Chair of Computer Science IV		Institute of Computer Science	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

This course aims at offering a self-contained account of image processing and computational photography and its underlying concepts, including the recent use of deep learning. The topics that will be covered are:

- introduction to image processing and computational photography
- sampling and quantization
- light and color
- image acquisition
- deep learning
- generative methods
- image signal processing
- image restoration
- sensor and image quality assessment
- image compression
- applications

Intended learning outcomes

Students have fundamental knowledge of problems and techniques in the field of image processing and computational photography and are able to independently identify and apply suitable methods for concrete problems.

- Overview of the most important concepts of image formation, perception and analysis, and Computational Photography
- Gaining experience through home assignments, practical computer and programming exercises
- Providing a sound solid background knowledge for the Computer Vision courses

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 60 to 120 minutes)
If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate).
Language of assessment: English
Creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)
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Module appears in
Master's degree (1 major) Information Systems (2019) Master's degree (1 major) eXtended Artificial Intelligence (xtAI) (2020) Master's degree (1 major) Information Systems (2022) Master's degree (1 major) Computer Science (2023) Master's degree (1 major) Aerospace Computer Science (2023) Master's degree (1 major) Artificial Intelligence & Extended Reality (2024) Master's degree (1 major) Artificial Intelligence (2024) Master's degree (1 major) Information Systems (2024)

Module title			Abbreviation
Information Retrieval			10-I=IR-212-m01
Module coordinator		**Module offered by**	
holder of the Chair of Computer Science XII		Institute of Computer Science	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

IR models (e. g. Boolean and vector space model, evaluation), processing of text (tokenising, text properties), data structures (e. g. inverted index), query elements (e. g. query operations, relevance feedback, query languages and paradigms, structured queries), search engine (e. g. architecture, crawling, interfaces, link analysis), methods to support IR (e. g. recommendation systems, text clustering and classification, information extraction).

Intended learning outcomes

The students possess theoretical and practical knowledge in the area of information retrieval and have acquired the technical know-how to create a search engine.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 60 to 120 minutes).
If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate).
creditable for bonus
Language of assessment: German and/or English

Allocation of places

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Additional information

Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): IT,KI,HCI,GE

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Computer Science (2021)
Master's degree (1 major) Computational Mathematics (2022)
Master's degree (1 major) Information Systems (2022)
Master's degree (1 major) Mathematics (2022)
Master's degree (1 major) Computer Science (2023)
Master's degree (1 major) Computational Mathematics (2024)
Master's degree (1 major) Mathematics (2024)
Master's degree (1 major) Information Systems (2024)

Module title			Abbreviation
Artificial Intelligence 1			10-I=KI1-212-m01
Module coordinator		**Module offered by**	
holder of the Chair of Computer Science VI		Institute of Computer Science	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Intelligent agents, uninformed and heuristic search, constraint problem solving, search with partial information, propositional and predicate logic and inference, knowledge representation.

Intended learning outcomes

The students possess theoretical and practical knowledge about artificial intelligence in the area of agents, search and logic and are able to assess possible applications.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 60 to 120 minutes).
If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate).
creditable for bonus
Language of assessment: German and/or English

Allocation of places

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Additional information

Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,SE,KI,HCI

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Computer Science (2021)
Master's degree (1 major) Aerospace Computer Science (2021)
Master's degree (1 major) Computational Mathematics (2022)
Master's degree (1 major) Information Systems (2022)
Master's degree (1 major) Mathematics (2022)
Master's degree (1 major) Computer Science (2023)
Master's degree (1 major) Aerospace Computer Science (2023)
Master's degree (1 major) Quantum Engineering (2024)
Master's degree (1 major) Physics International (2024)
Master's degree (1 major) Computational Mathematics (2024)
Master's degree (1 major) Mathematics (2024)

Master's degree (1 major) Information Systems (2024)

Module title			Abbreviation
Artificial Intelligence 2			10-I=KI2-212-m01
Module coordinator		**Module offered by**	
holder of the Chair of Computer Science VI		Institute of Computer Science	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Planning, probabilistic closure and Bayesian networks, utility theory and decidability problems, learning from observations, knowledge while learning, neural networks and statistical learning methods, reinforcement learning, processing of natural language.

Intended learning outcomes

The students possess theoretical and practical knowledge about artificial intelligence in the area of probabilistic closure, learning and language processing and are able to assess possible applications.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 60 to 120 minutes).
If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate).
creditable for bonus
Language of assessment: German and/or English

Allocation of places

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Additional information

Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits):
AT,SE,KI,HCI,GE

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Computer Science (2021)
Master's degree (1 major) Aerospace Computer Science (2021)
Master's degree (1 major) Computational Mathematics (2022)
Master's degree (1 major) Information Systems (2022)
Master's degree (1 major) Mathematics (2022)
Master's degree (1 major) Computer Science (2023)
Master's degree (1 major) Aerospace Computer Science (2023)
Master's degree (1 major) Computational Mathematics (2024)
Master's degree (1 major) Mathematics (2024)
Master's degree (1 major) Information Systems (2024)

Module title			Abbreviation
Machine Learning for Networks 1			10-I=MLN1-232-m01
Module coordinator		**Module offered by**	
holder of the Chair of Computer Science XV		Institute of Computer Science	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Networks matter! This holds for technical infrastructures like communication or transportation networks, for information systems and social media in the World Wide Web, but also for various social, economic and biological systems. What can we learn from data that capture the interaction topology of such complex systems? What is the role of individual nodes and how can we discover significant patterns in the structure of networks? How do these structures influence dynamical process like diffusion or the spreading of epidemics? Which are the most influential actors in a social network? And how can we analyze time series data on systems with dynamic network topologies?

Addressing those questions, the course combines a series of lectures -- which introduce fundamental concepts for the statistical modelling of complex networks -- with weekly exercises that show how we can apply them to practical network analysis tasks. Topics covered include foundations of graph theory, centrality and modularity measures, aggregate statistical characteristics of large networks, random graphs and statistical ensembles of complex networks, generating function analysis of expected graph properties, scale-free networks, stochastic dynamics in networks, spectral analysis, as well as the modelling of time-varying networks. The course material consists of annotated slides for lectures as well as a accompanying git-Repository of jupyter notebooks, which implement and validate the theoretical concepts covered in the lectures. Students can test and deepen their knowledge through weekly exercise sheets. The successful completion of the course requires to pass a final written exam.

Intended learning outcomes

The course will equip participants with statistical network analysis techniques that are needed for the data-driven modelling of complex technical, social, and biological systems. Students will understand how we can quantitatively model the topology of networked systems and how we can detect and characterize topological patterns. Participants will learn how to use analytical methods to make statements about the expected properties of very large networks that are generated based on different stochastic models. They further gain an analytical understanding of how the structure of networks shapes dynamical processes, how statistical fluctuations in degree distributions influence the robustness of systems, and how emergent network features emerge from simple random processes.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 60 to 120 minutes)
If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate).
Language of assessment: English
creditable for bonus

Allocation of places

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Additional information
Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,IT,SE,KI,HCI,IN
Workload
150 h
Teaching cycle
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Referred to in LPO I (examination regulations for teaching-degree programmes)
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Module appears in
Master's degree (1 major) Information Systems (2019) Master's degree (1 major) Information Systems (2022) Master's degree (1 major) Computer Science (2023) Master's degree (1 major) Artificial Intelligence & Extended Reality (2024) Master's degree (1 major) Artificial Intelligence (2024) Master's degree (1 major) Computational Mathematics (2024) Master's degree (1 major) Mathematics (2024) Master's degree (1 major) Information Systems (2024)

Module title			Abbreviation
Multilingual NLP			10-I=MNLP-232-m01
Module coordinator		**Module offered by**	
holder of the Chair of Computer Science XII		Institute of Computer Science	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Languages of the world: language families, typology, etymology. Linguistic universals: words, morphology, parts-of-speech, syntax. Alphabets (scripts), encoding, and language identification. Multilingual word representation spaces (aka cross-lingual word embeddings). Transformer architecture and Pretrained (multilingual) Language Models. Machine translation. Multilingual resources: unlabeled corpora, lexico-semantic networks and word translations, parallel corpora. Cross-lingual transfer: from word alignment and label projection, over MT-based transfer to zero-shot and few-shot transfer with multilingual Transformer-based language models. Advanced topics: curse of multilinguality, modularization and language adaptation, multilingual sentence encoders, contextual parameter generation, multi-source transfer, gradient manipulations.

Intended learning outcomes

Students will acquire theoretical and practical knowledge on modern multilingual natural language processing and also get an insight into cutting edge research in (multilingual) NLP. They will learn how to represent texts from different languages in shared representation spaces that enable semantic comparison and cross-lingual transfer for various NLP tasks. Upon successful completion of the course, the students will be well-equipped to solve practical NLP problems regardless of the language of the text data, and to determine the optimal strategy to obtain best performance for any concrete target language.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 60 to 120 minutes)
If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate).
Language of assessment: English
Creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Information Systems (2019)
Master's degree (1 major) Information Systems (2022)

Master's degree (1 major) Computer Science (2023)
Master's degree (1 major) Artificial Intelligence (2024)
Master's degree (1 major) Computational Mathematics (2024)
Master's degree (1 major) Management (2024)
Master's degree (1 major) Mathematics (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Machine Learning for Natural Language Processing			10-I=NLP-212-m01
Module coordinator		**Module offered by**	
holder of the Chair of Computer Science X		Institute of Computer Science	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

The lecture conveys advanced knowledge about methods in computational text processing. To this end, it presents state of the art models and techniques in the area of machine learning, as well as their technical background, and their respective applications in Natural Language Processing. As one important building block of almost all modern NLP-models, different techniques for learning representations of words, so called Word Embeddings, are presented. Starting from this we cover, among others, models from the area of Deep Learning, like CNNs, RNNs and Sequence-to-Sequence architectures. The theoretical foundations of these models, like their training with Backpropagation, are also covered in depth. For all models presented in the lecture, we show their application to problems like sentiment analysis, text generation and machine translation in practice.

Intended learning outcomes

The participants have solid knowledge on problems and methods in the area of computational text processing and are able to identify and apply suitable methods for a specific task.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 60 to 120 minutes).
If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate).
creditable for bonus
Language of assessment: German and/or English

Allocation of places

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Additional information

Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,KI,HCI

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Module studies (Master) Computer Science (2019)
Master's degree (1 major) Computer Science (2021)
Master's degree (1 major) Computational Mathematics (2022)
Master's degree (1 major) Information Systems (2022)
Master's degree (1 major) Mathematics (2022)
Master's degree (1 major) Computer Science (2023)

Master's degree (1 major) Computational Mathematics (2024)
Master's degree (1 major) Management (2024)
Master's degree (1 major) Mathematics (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Operations Research			10-I=OR-232-m01
Module coordinator		**Module offered by**	
holder of the Chair of Computer Science I		Institute of Computer Science	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Production plans, railway timetables, the assignment of radio frequencies, planning of delivery tours, or the construction of an 'optimal' university timetable: these problems – and many more – can be modeled as (mixed-) integer linear optimization problems and solved with integer programming methods.
This course teaches integer programming methods like branch-and-bound, cutting plane, and decomposition methods. Furthermore, we practice our modeling skills by studying a variety of application examples.

Intended learning outcomes

After completing the course
- The students are able to model optimization problems as mathematical program (in particular: mixed-integer linear programs).
- The students are able to apply integer programming methods and understand how and why these work.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 60 to 120 minutes)
If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate).
Language of assessment: German and/or English
creditable for bonus

Allocation of places

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Additional information

Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): IN

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Information Systems (2019)
Master's degree (1 major) Information Systems (2022)
Master's degree (1 major) Computer Science (2023)
Master's degree (1 major) Computational Mathematics (2024)
Master's degree (1 major) Management (2024)
Master's degree (1 major) Mathematics (2024)
Master's degree (1 major) Information Systems (2024)

Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Professional Project Management			10-I=PM-212-m01
Module coordinator		**Module offered by**	
holder of the Chair of Computer Science III		Institute of Computer Science	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	We recommend completing module 10-I=PRJAK in parallel.	

Contents

Project goals, project assignment, project success criteria, business plan, environment analysis and stakeholder management, initialisation, definition, planning, execution/control, finishing of projects, reporting, project communication and marketing, project organisation, team building and development, opportunity and risk management; conflict and crisis management, change and claim management; contract and procurement management, quality management, work techniques, methods and tools; leadership and social skills in project management, program management, multiproject management, project portfolio management, PMOs; peculiarities of software projects; agile project management/SCRUM, combination of classic and agile methods.

Intended learning outcomes

The students possess practically relevant knowledge about the topics of production management and/or professional project management. They are familiar with the critical success criteria and are able to initiate, define, plan, control and review projects.

Courses (type, number of weekly contact hours, language — if other than German)

V (4)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 60 to 120 minutes).
If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate).
creditable for bonus
Language of assessment: German and/or English

Allocation of places

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Additional information

Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): SE,IT,KI,ES,LR,HCI,GE

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Computer Science (2021)
Master's degree (1 major) Computational Mathematics (2022)
Master's degree (1 major) Information Systems (2022)
Master's degree (1 major) Mathematics (2022)
Master's degree (1 major) Management (2022)
Master's degree (1 major) Media Entertainment (2022)

Master's degree (1 major) Psychology of digital media (2022)
Master's degree (1 major) Computer Science (2023)
Master's degree (1 major) Computational Mathematics (2024)
Master's degree (1 major) Management (2024)
Master's degree (1 major) Mathematics (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Programming with neural nets			10-I=PNN-212-m01
Module coordinator		**Module offered by**	
holder of the Chair of Computer Science VI		Institute of Computer Science	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Overview over NN, implementation of important NN-architectures like FCN, CNN and LSTMs, practical example for NN-architectures, among others in the area of image and language processing.

Intended learning outcomes

Knowledge about possible applications and limitations of NN, for important architectures (eg. FCN, CNN, LSTM) and how they are implemented in NN-tools like Tensorflow/Keras, ability to program network structures from literature, to prepare data and solve concrete tasks for NN.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 60 to 120 minutes).
If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate).
creditable for bonus
Language of assessment: German and/or English

Allocation of places

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Additional information

Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): IT,KI,HCI,GE

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Information Systems (2019)
Master's degree (1 major) Computer Science (2021)
Master's degree (1 major) Information Systems (2022)
Master's degree (1 major) Computer Science (2023)
Master's degree (1 major) Information Systems (2024)

Module title			Abbreviation
Project - Current Topics in Computer Science			10-I=PRJAK-212-m01
Module coordinator		**Module offered by**	
Dean of Studies Informatik (Computer Science)		Institute of Computer Science	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Completion of a project task (in Teams).

Intended learning outcomes

The project allows participants to work on a problem in computer science in teams.

Courses (type, number of weekly contact hours, language — if other than German)

P (4)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

project report (10 to 15 pages) and presentation of project (15 to 30 minutes)
Language of assessment: German and/or English
Assessment offered: In the semester in which the course is offered (Each project is offered one time only. The project will not be repeated; there will not be another project with the same topic. Assessment can, therefore, only be offered for the project offered in the respective semester)

Allocation of places

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Additional information

Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT,SE,IT,KI,ES,LR,HCI,GE

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Computer Science (2021)
Master's degree (1 major) Computational Mathematics (2022)
Master's degree (1 major) Information Systems (2022)
Master's degree (1 major) Mathematics (2022)
Master's degree (1 major) Management (2022)
Master's degree (1 major) Media Entertainment (2022)
Master's degree (1 major) Psychology of digital media (2022)
Master's degree (1 major) Computer Science (2023)
Master's degree (1 major) Computational Mathematics (2024)
Master's degree (1 major) Management (2024)
Master's degree (1 major) Mathematics (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Software Architecture			10-I=SAR-161-m01
Module coordinator		**Module offered by**	
holder of the Chair of Computer Science II		Institute of Computer Science	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Introduction to software architecture, architectural styles and patterns, software metrics, evaluation of architectural styles, software components, interface models and design guidelines, design-by-contract, component-based software engineering, service-oriented architectures, microservice architectures, scalability of databases, cloud-native and serverless computing, continuous integration, continuous delivery, continuous deployment, model-driven architecture

Intended learning outcomes

The students possess a fundamental and applicable knowledge about advanced topics in software engineering with a focus on modern software architectures and fundamental approaches to model-driven software engineering.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 60 to 120 minutes).
If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate).
Language of assessment: German and/or English
creditable for bonus

Allocation of places

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Additional information

Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): SE,IT,ES

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Computer Science (2016)
Master's degree (1 major) Mathematics (2016)
Master's degree (1 major) Computational Mathematics (2016)
Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016)
Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016)
Master's degree (1 major) Computer Science (2017)
Master's degree (1 major) Computer Science (2018)
Module studies (Master) Computer Science (2019)

Master's degree (1 major) Computational Mathematics (2019)
Master's degree (1 major) Mathematics (2019)
Master's degree (1 major) Information Systems (2019)
Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020)
Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020)
Master's degree (1 major) Computer Science (2021)
Master's degree (1 major) Computational Mathematics (2022)
Master's degree (1 major) Information Systems (2022)
Master's degree (1 major) Mathematics (2022)
Master's degree (1 major) Computer Science (2023)
Master's degree (1 major) Computational Mathematics (2024)
Master's degree (1 major) Management (2024)
Master's degree (1 major) Mathematics (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Systems Benchmarking			10-I=SB-212-m01
Module coordinator		**Module offered by**	
holder of the Chair of Computer Science II		Institute of Computer Science	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Benchmarking has become a major discipline in science and technology as a driver of product quality, efficiency, and sustainability. Reliable and fair benchmarks enable educated decisions and play an important role as evaluation tools during system design, development, and maintenance. In research, benchmarks play an integral part in the evaluation and validation of new approaches and methodologies. The course introduces the foundations of benchmarking as a discipline, covering the three fundamental elements of each benchmarking approach: metrics, workloads, and measurement methodology. More specifically the following topics are covered: benchmarking basics, metrics, statistical measurements, experimental design, workloads, measurement tools, operational analysis, basic queueing models, and benchmark standardization. Furthermore, the course covers selected application areas and case studies, such as benchmarking of energy efficiency, virtualization, storage, microservices, cloud elasticity, performance isolation, resource demand estimation, and software and system security.

Intended learning outcomes

Students are able to design and build fair and reliable benchmarks, metrics, and measurement tools. Students can evaluate the quality of existing benchmarking approaches and benchmark results.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 60 to 120 minutes).
If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate).
creditable for bonus
Language of assessment: German and/or English

Allocation of places

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Additional information

Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits):
SE,IT,ES,HCI,GE

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Information Systems (2019)
Master's degree (1 major) eXtended Artificial Intelligence (xtAI) (2020)
Master's degree (1 major) Computer Science (2021)
Master's degree (1 major) Aerospace Computer Science (2021)

Master's degree (1 major) Information Systems (2022)
Master's degree (1 major) Computer Science (2023)
Master's degree (1 major) Aerospace Computer Science (2023)
Master's degree (1 major) Artificial Intelligence & Extended Reality (2024)
Master's degree (1 major) Artificial Intelligence (2024)
Master's degree (1 major) Information Systems (2024)

Module title			Abbreviation
Statistical Network Analysis			10-I=SNA-232-m01
Module coordinator		**Module offered by**	
holder of the Chair of Computer Science XV		Institute of Computer Science	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Networks matter! This holds for technical infrastructures like communication or transportation networks, for information systems and social media in the World Wide Web, but also for various social, economic and biological systems. What can we learn from data that capture the interaction topology of such complex systems? What is the role of individual nodes and how can we discover significant patterns in the structure of networks? How do these structures influence dynamical process like diffusion or the spreading of epidemics? Which are the most influential actors in a social network? And how can we analyze time series data on systems with dynamic network topologies?
Addressing those questions, the course combines a series of lectures -- which introduce fundamental concepts for the statistical modelling of complex networks -- with weekly exercises that show how we can apply them to practical network analysis tasks. Topics covered include foundations of graph theory, centrality and modularity measures, aggregate statistical characteristics of large networks, random graphs and statistical ensembles of complex networks, generating function analysis of expected graph properties, scale-free networks, stochastic dynamics in networks, spectral analysis, as well as the modelling of time-varying networks. The course material consists of annotated slides for lectures as well as a accompanying git-Repository of jupyter notebooks, which implement and validate the theoretical concepts covered in the lectures. Students can test and deepen their knowledge through weekly exercise sheets. The successful completion of the course requires to pass a final written exam.

Intended learning outcomes

The course will equip participants with statistical network analysis techniques that are needed for the data-driven modelling of complex technical, social, and biological systems. Students will understand how we can quantitatively model the topology of networked systems and how we can detect and characterize topological patterns. Participants will learn how to use analytical methods to make statements about the expected properties of very large networks that are generated based on different stochastic models. They further gain an analytical understanding of how the structure of networks shapes dynamical processes, how statistical fluctuations in degree distributions influence the robustness of systems, and how emergent network features emerge from simple random processes.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 60 to 120 minutes).
If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate).
Language of assessment: German and/or English
creditable for bonus

Allocation of places

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Additional information

Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits):
IN

Workload
150 h
Teaching cycle
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Referred to in LPO I (examination regulations for teaching-degree programmes)
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Module appears in
Master's degree (1 major) Information Systems (2019) Master's degree (1 major) Information Systems (2022) Master's degree (1 major) Computer Science (2023) Master's degree (1 major) Aerospace Computer Science (2023) Master's degree (1 major) Computational Mathematics (2024) Master's degree (1 major) Management (2024) Master's degree (1 major) Mathematics (2024) Master's degree (1 major) Information Systems (2024) Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Security of Software Systems			10-I=SSS-232-m01
Module coordinator		**Module offered by**	
holder of the Chair of Computer Science II		Institute of Computer Science	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

The lecture provides an overview of common software vulnerabilities, state-of-the-art attack techniques on modern computer systems, as well as the measures implemented to protect against these attacks. In the course, the following topics are discussed:

- x86-64 instruction set architecture and assembly language
- Runtime attacks (code injection, code reuse, defenses)
- Web security
- Blockchains and smart contracts
- Side-channel attacks
- Hardware security

Intended learning outcomes

Students gain a deep understanding of software security, from hardware and low-level attacks to modern concepts such as blockchains. The lecture prepares for research in the area of security and privacy, while the exercises allow students to gain hands-on experience with attacks and analysis of systems from an attacker's perspective.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 60 to 120 minutes).
If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate).
Language of assessment: English
creditable for bonus

Allocation of places

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Additional information

Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): SE,KI,LR, HCI, ES, SEC,IN

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Module studies (Master) Computer Science (2019)
Master's degree (1 major) Computer Science (2023)

Master's degree (1 major) Artificial Intelligence & Extended Reality (2024)
Master's degree (1 major) Artificial Intelligence (2024)
Master's degree (1 major) Computational Mathematics (2024)
Master's degree (1 major) Mathematics (2024)
Master's degree (1 major) Information Systems (2024)

Module title			Abbreviation
Discrete Event Simulation			10-I=ST-232-m01
Module coordinator		**Module offered by**	
holder of the Chair of Computer Science III		Institute of Computer Science	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

The simulation of communication systems is illustrated and practically performed on contemporary examples, e.g., popular Internet services or the Internet of Things (IoT). The following topics will be conveyed:
Introduction to simulation techniques, discrete-event simulation and process-oriented simulation, generating random numbers and random variables, statistical analysis of simulation results, evaluation of measured data, designing and evaluating simulation experiments, special random processes, possibilities and limitations of modelling and simulation, advanced concepts and techniques, practical execution of simulation projects.

Intended learning outcomes

The students possess the methodic knowledge and the practical skills necessary for the stochastic simulation of (technical) systems, the evaluation of results and the correct assessment of the possibilities and limits of simulation methods.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 60 to 120 minutes).
If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate).
Language of assessment: German and/or English
creditable for bonus

Allocation of places

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Additional information

Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): IT,KI,ES,GE,IN

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Module studies (Master) Computer Science (2019)
Master's degree (1 major) Computer Science (2023)
Master's degree (1 major) Aerospace Computer Science (2023)
Master's degree (1 major) Artificial Intelligence & Extended Reality (2024)
Master's degree (1 major) Artificial Intelligence (2024)
Master's degree (1 major) Computational Mathematics (2024)
Master's degree (1 major) Mathematics (2024)

Master's degree (1 major) Information Systems (2024)

Module title			Abbreviation
NLP and Text Mining			10-I=STM-162-m01
Module coordinator		**Module offered by**	
holder of the Chair of Computer Science VI		Institute of Computer Science	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Foundations in the following areas: definition of NLP and text mining, properties of text, sentence boundary detection, tokenisation, collocation, N-gram models, morphology, hidden Markov models for tagging, probabilistic parsing, word sense disambiguation, term extraction methods, information extraction, sentiment analysis. The students possess theoretical and practical knowledge about typical methods and algorithms in the area of text mining and language processing mostly for English. They are able to solve problems through the methods taught. They have gained experience in the application of text mining algorithms.

Intended learning outcomes

The students possess theoretical and practical knowledge about typical methods and algorithms in the area of text mining and language processing. They are able to solve practical problems with the methods acquired in class. They have gained experience in the application of text mining algorithms.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 60 to 120 minutes).
If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate).
Language of assessment: German and/or English

Allocation of places

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Additional information

Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): AT, IT, HCI.

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Computer Science (2016)
Master's degree (1 major) Computer Science (2017)
Master's degree (1 major) Computer Science (2018)
Master's degree (1 major) Computational Mathematics (2019)
Master's degree (1 major) Mathematics (2019)
Master's degree (1 major) Information Systems (2019)
Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020)
Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020)

Master's degree (1 major) Computer Science (2021)
Master's degree (1 major) Computational Mathematics (2022)
Master's degree (1 major) Information Systems (2022)
Master's degree (1 major) Mathematics (2022)
Master's degree (1 major) Computer Science (2023)
Master's degree (1 major) Computational Mathematics (2024)
Master's degree (1 major) Mathematics (2024)
Master's degree (1 major) Information Systems (2024)

Module title			Abbreviation
Seminar: International Economics			12-M-AMTIÖ-242-m01
Module coordinator			**Module offered by**
Holder of the Chair of International Economics			Faculty of Business Management and Economics
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	--	--	

Contents

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Intended learning outcomes

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Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

term paper (approx. 15 pages) and presentation (approx. 40 minutes) with thesis paper (1 page) (weighted 3:1)
Language of assessment: English

Allocation of places

10 places.
WA1:
(1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title	Abbreviation
Advanced Operations & Logistics Management	12-M-AOLM-182-m01

Module coordinator	Module offered by
Holder of the Chair of Logistics and Quantitative Methods in Business Administration	Faculty of Business Management and Economics

ECTS	Method of grading	Only after succ. compl. of module(s)
5	numerical grade	--

Duration	Module level	Other prerequisites
1 semester	graduate	--

Contents

The course "Advanced Operations & Logistics Management" acquaints students with advanced methods for the planning of integrated production and logistics systems and demonstrates the application of these with the help of multiple case studies

Intended learning outcomes

After completing this course students can
(i) analyze and evaluate integrated production and logistics systems;
(ii) develop and apply appropriate methods to plan complex production and logistics systems;
(iii) evaluate the consequences of uncertainties in processes, and
(iv) apply concepts and methods to plan uncertainties processes.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 minutes) or b) term paper (approx. 15 to 20 pages)
Language of assessment: English
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2018)
Master's degree (1 major) International Economic Policy (2018)
Master's degree (1 major) China Business and Economics (2019)
Master's degree (1 major) China Language and Economy (2019)
Master's degree (1 major) Information Systems (2019)
Master's degree (1 major) China Business and Economics (2021)
Master's degree (1 major) China Language and Economy (2021)
Master's degree (1 major) Economathematics (2021)
Master's degree (1 major) Information Systems (2022)

Master's degree (1 major) International Economic Policy (2022)
Master's degree (1 major) Management (2022)
Master's degree (1 major) Economathematics (2022)
exchange program Business Management and Economics (2022)
Master's degree (1 major) Management International (2024)
Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Project: Selected Topics in Business Management and Economics II			12-M-APS2-242-m01
Module coordinator		**Module offered by**	
Dean of the Faculty of Business Management and Economics		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

This module serves the purpose of transferring credits from
- courses taken at other German or non-German universities
- additional courses offered on a short-term basis
- courses offered by new Chairs that are yet to be included in the FSB (subject-specific provisions)

The holders of the respective Chairs will ensure that the courses are eligible for credit transfer.

Intended learning outcomes

As a result of accrediting multiple kinds of modules, a description of acquired skills cannot be given.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

term paper (approx. 20 pages) and presentation (approx. 20 minutes), weighted 2:1
Assessment offered: In the semester in which the course is offered
Language of assessment: German and/or English
creditable for bonus

Allocation of places

10 places.
WA1:
(1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Project: Selected Topics in Business Management and Economics I			12-M-APS-242-m01
Module coordinator		**Module offered by**	
Dean of the Faculty of Business Management and Economics		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

This module serves the purpose of transferring credits from
- courses taken at other German or non-German universities
- additional courses offered on a short-term basis
- courses offered by new Chairs that are yet to be included in the FSB (subject-specific provisions)

The holders of the respective Chairs will ensure that the courses are eligible for credit transfer.

Intended learning outcomes

As a result of accrediting multiple kinds of modules, a description of acquired skills cannot be given.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

term paper (approx. 20 pages) and presentation (approx. 20 minutes), weighted 2:1
Assessment offered: In the semester in which the course is offered
Language of assessment: German and/or English
creditable for bonus

Allocation of places

10 places.
WA1:
(1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Selected Topics in Business Management and Economics 1			12-M-APW1-161-m01
Module coordinator		**Module offered by**	
Dean of the Faculty of Business Management and Economics		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

This module serves the purpose of transferring credits from
- courses taken at other German or non-German universities
- additional courses offered on a short-term basis
- courses offered by new Chairs that are yet to be included in the FSB (subject-specific provisions)

The holders of the respective Chairs will ensure that the courses are eligible for credit transfer.

Intended learning outcomes

As a result of accrediting multiple kinds of modules, a description of acquired skills cannot be given.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 to 90 minutes) or b) written examination (questions concerning mathematical methodology; approx. 120 minutes) or c) term paper (approx. 15 to 20 pages) or presentation (approx. 30 to 45 minutes)
Assessment offered: In the semester in which the course is offered
Language of assessment: German and/or English
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Business Information Systems (2016)
Master's degree (1 major) Business Management (2015)
Master's degree (1 major) China Business and Economics (2016)
Master's degree (1 major) International Economic Policy (2015)
Master's degree (1 major) China Language and Economy (2016)
Master's degree (1 major) Management (2018)
Master's degree (1 major) International Economic Policy (2018)
Master's degree (1 major) China Business and Economics (2019)
Master's degree (1 major) China Language and Economy (2019)

Master's degree (1 major) Information Systems (2019)
Master's degree (1 major) China Business and Economics (2021)
Master's degree (1 major) China Language and Economy (2021)
Master's degree (1 major) Information Systems (2022)
Master's degree (1 major) International Economic Policy (2022)
Master's degree (1 major) Management (2022)
Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)

Module title			Abbreviation
Selected Topics in Business Management and Economics 2			12-M-APW2-161-m01
Module coordinator		**Module offered by**	
Dean of the Faculty of Business Management and Economics		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

This module serves the purpose of transferring credits from
- courses taken at other German or non-German universities
- additional courses offered on a short-term basis
- courses offered by new Chairs that are yet to be included in the FSB (subject-specific provisions)

The holders of the respective Chairs will ensure that the courses are eligible for credit transfer.

Intended learning outcomes

As a result of accrediting multiple kinds of modules, a description of acquired skills cannot be given.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 to 90 minutes) or b) written examination (questions concerning mathematical methodology; approx. 120 minutes) or c) term paper (approx. 15 to 20 pages) or d) presentation (approx. 30 to 45 minutes)
Assessment offered: In the semester in which the course is offered
Language of assessment: German and/or English
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Business Information Systems (2016)
Master's degree (1 major) Business Management (2015)
Master's degree (1 major) China Business and Economics (2016)
Master's degree (1 major) International Economic Policy (2015)
Master's degree (1 major) China Language and Economy (2016)
Master's degree (1 major) Management (2018)
Master's degree (1 major) International Economic Policy (2018)
Master's degree (1 major) China Business and Economics (2019)
Master's degree (1 major) China Language and Economy (2019)

Master's degree (1 major) Information Systems (2019)
Master's degree (1 major) China Business and Economics (2021)
Master's degree (1 major) China Language and Economy (2021)
Master's degree (1 major) Information Systems (2022)
Master's degree (1 major) International Economic Policy (2022)
Master's degree (1 major) Management (2022)
Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)

Module title			Abbreviation
Selected Topics in Business Management and Economics 3			12-M-APW3-161-m01
Module coordinator		**Module offered by**	
Dean of the Faculty of Business Management and Economics		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

This module serves the purpose of transferring credits from
- courses taken at other German or non-German universities
- additional courses offered on a short-term basis
- courses offered by new Chairs that are yet to be included in the FSB (subject-specific provisions)

The holders of the respective Chairs will ensure that the courses are eligible for credit transfer.

Intended learning outcomes

As a result of accrediting multiple kinds of modules, a description of acquired skills cannot be given.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 to 90 minutes) or b) written examination (questions concerning mathematical methodology; approx. 120 minutes) or c) term paper (approx. 15 to 20 pages) or d) presentation (approx. 30 to 45 minutes)
Assessment offered: In the semester in which the course is offered
Language of assessment: German and/or English
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Business Information Systems (2016)
Master's degree (1 major) Business Management (2015)
Master's degree (1 major) China Business and Economics (2016)
Master's degree (1 major) International Economic Policy (2015)
Master's degree (1 major) China Language and Economy (2016)
Master's degree (1 major) Management (2018)
Master's degree (1 major) International Economic Policy (2018)
Master's degree (1 major) China Business and Economics (2019)
Master's degree (1 major) China Language and Economy (2019)

Master's degree (1 major) China Business and Economics (2021)
Master's degree (1 major) China Language and Economy (2021)
Master's degree (1 major) International Economic Policy (2022)
Master's degree (1 major) Management (2022)
Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)

Module title			Abbreviation
Selected Topics in Business Management and Economics 4			12-M-APW4-161-m01
Module coordinator		**Module offered by**	
Dean of the Faculty of Business Management and Economics		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

This module serves the purpose of transferring credits from
- courses taken at other German or non-German universities
- additional courses offered on a short-term basis
- courses offered by new Chairs that are yet to be included in the FSB (subject-specific provisions)

The holders of the respective Chairs will ensure that the courses are eligible for credit transfer.

Intended learning outcomes

As a result of accrediting multiple kinds of modules, a description of acquired skills cannot be given.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 to 90 minutes) or b) written examination (questions concerning mathematical methodology; approx. 120 minutes) or c) term paper (approx. 15 to 20 pages) or d) presentation (approx. 30 to 45 minutes)
Assessment offered: In the semester in which the course is offered
Language of assessment: German and/or English
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Business Information Systems (2016)
Master's degree (1 major) Business Management (2015)
Master's degree (1 major) China Business and Economics (2016)
Master's degree (1 major) International Economic Policy (2015)
Master's degree (1 major) China Language and Economy (2016)
Master's degree (1 major) Management (2018)
Master's degree (1 major) International Economic Policy (2018)
Master's degree (1 major) China Business and Economics (2019)
Master's degree (1 major) China Language and Economy (2019)

Master's degree (1 major) China Business and Economics (2021)
Master's degree (1 major) China Language and Economy (2021)
Master's degree (1 major) International Economic Policy (2022)
Master's degree (1 major) Management (2022)
Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)

Module title	Abbreviation
Seminar: Strategic Incentive Design	12-M-ATC-242-m01

Module coordinator	Module offered by
Holder of the Chair of Contract Theory and Information Economics	Faculty of Business Management and Economics

ECTS	Method of grading	Only after succ. compl. of module(s)
10	numerical grade	--

Duration	Module level	Other prerequisites
1 semester	graduate	--

Contents

This module covers varying classical or recent topics from microeconomics, usually with a focus on decision theory, contract theory or behavioral economics. As a solid understanding of the corresponding basics will be helpful, the course is intended in particular for advanced students who completed the classes "Advanced Micoeconomics" and "Contract Theory".

Intended learning outcomes

After completing the course students will have gathered experience in
- reading and understanding theoretical or experimental research articles,
- critically analyzing and discussing the results of research articles,
- relating the results of different research articles to each other,
- conveying their insights both verbally and in writing in accordance with common scientific standards.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

term paper (20 to 25 pages) and presentation (approx. 20 minutes), weighted 2:1
Language of assessment: English

Allocation of places

10 places.
WA1:
(1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Topics in Data Science			12-M-ATDS-242-m01
Module coordinator		**Module offered by**	
Holder of the Chair of Business Analytics		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

In this course, students work on advanced data science projects. The course covers the entire data science workflow from data collection to data preparation to modeling, evaluation and deployment. By following a top-down teaching approach, students are enabled to apply complex machine learning models from the beginning.

Intended learning outcomes

As part of the course work, students will acquire knowledge and skills in the following areas:
1. Becoming familiar with the principles and frameworks in the research area of Data Science.
2. Apply machine learning and deep learning frameworks to structured and unstructured data
3. Design, implementation and evaluation of key algorithms within an end-to-end workflow in the field of Data Science
4. Application of Jupyter notebooks and their infrastructure (collection, storage, retrieval, and analysis of data)
5. Understanding of a data-driven & analytical approach to decision problems

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 minutes) or
b) term paper (approx. 15 pages) or
c) portfolio (approx. 50 hours)
Language of assessment: English
Assessment offered: In the semester in which the course is offered
creditable for bonus

Allocation of places

Number of places: 35. Should the number of applications exceed the number of available places, places will be allocated as follows:
(1) Students who already have successfully completed courses offered by the supervising chair will be given preferential consideration.
a. Among applicants with the same number of successfully completed modules, places will be allocated according to the total number of ECTS credits achieved in the corresponding modules.
b. When places are allocated in accordance with 1.b) and the number of applications exceeds the number of available places, places will be allocated according to the average grade of assessments taken in the corresponding courses.
c. Among applicants with the same average grade, places will be allocated by lot.
(2) Any remaining places are available to students who have not yet successfully completed any courses of the supervising chair. The selection is made according to study progress (number of semesters); among applicants with the same number of semesters, places will be allocated by lot. A waiting list will be maintained and places re-allocated as they become available.

Additional information

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Workload

150 h

Teaching cycle
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Referred to in LPO I (examination regulations for teaching-degree programmes)
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Module appears in
Master's degree (1 major) Management International (2024) Master's degree (1 major) Management (2024) Master's degree (1 major) Information Systems (2024) Master's degree (1 major) International Economic Policy (2024) Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
International Economics 1			12-M-ATIÖ1-242-m01
Module coordinator		**Module offered by**	
Holder of the Chair of International Economics		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Content

Current topics in international economics and economic geography [e.g. Urbanization and Inequality; Tasks, Trade, and Cities; Outsourcing, Offshoring and Multinational Firms; Competition of Locations, Jurisdictions and Systems; Globalization and the Environment; Trade, Multinational Firms and Labor Markets; Triumph of the City]

Literature:

Peer-reviewed articles and/or monographs.

Intended learning outcomes

Drawing on current cutting-edge research, students are enabled to analyze current research questions and to learn and apply research methods. The seminar style of the course teaches them to present their own seminar papers and research both in written and in oral form. Students are enabled to critically analyze and discuss the work of their peers.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

term paper (approx. 15 pages) and presentation (approx. 40 minutes) with thesis paper (1 page) (weighted 3:1)
Language of assessment: English

Allocation of places

10 places.
WA1:
(1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)

Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
International Economics 2			12-M-ATIÖ2-242-m01
Module coordinator		**Module offered by**	
Holder of the Chair of International Economics		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Content

Current topics in international economics and economic geography [e.g. Urbanization and Inequality; Tasks, Trade, and Cities; Outsourcing, Offshoring and Multinational Firms; Competition of Locations, Jurisdictions and Systems; Globalization and the Environment; Trade, Multinational Firms and Labor Markets; Triumph of the City]

Literature:

Peer-reviewed articles and/or monographs.

Intended learning outcomes

Drawing on current cutting-edge research, students are enabled to analyze current research questions and to learn and apply research methods. The seminar style of the course teaches them to present their own seminar papers and research both in written and in oral form. Students are enabled to critically analyze and discuss the work of their peers.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

term paper (approx. 15 pages) and presentation (approx. 40 minutes) with thesis paper (1 page) (weighted 3:1)
Language of assessment: English

Allocation of places

10 places.
WA1:
(1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)

Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
International Economics 3			12-M-ATIÖ3-242-m01
Module coordinator		**Module offered by**	
Holder of the Chair of International Economics		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Content

Current topics in international economics and economic geography [e.g. Urbanization and Inequality; Tasks, Trade, and Cities; Outsourcing, Offshoring and Multinational Firms; Competition of Locations, Jurisdictions and Systems; Globalization and the Environment; Trade, Multinational Firms and Labor Markets; Triumph of the City]

Literature:

Peer-reviewed articles and/or monographs.

Intended learning outcomes

Drawing on current cutting-edge research, students are enabled to analyze current research questions and to learn and apply research methods. The seminar style of the course teaches them to present their own seminar papers and research both in written and in oral form. Students are enabled to critically analyze and discuss the work of their peers.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

term paper (approx. 15 pages) and presentation (approx. 40 minutes) with thesis paper (1 page) (weighted 3:1)
Language of assessment: English

Allocation of places

10 places.
WA1:
(1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)

Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title	Abbreviation
Advanced Seminar: Managerial Accounting	12-M-AUAS-242-m01

Module coordinator	Module offered by
Holder of the Chair of Business Management, Management Accounting and Control	Faculty of Business Management and Economics

ECTS	Method of grading	Only after succ. compl. of module(s)
10	numerical grade	--

Duration	Module level	Other prerequisites
1 semester	graduate	--

Contents

In this course, students will acquire important knowledge and skills that will enable them to prepare a well-structured paper and to present the results of their work by means of relevant topics in the field of managerial accounting.

Intended learning outcomes

After completion of the seminar, students will be able to answer complex questions from the field of managerial accounting at a scientific level. They are able to conduct scientific literature research in a targeted manner and understand its contents as well as apply further scientific methods to answer questions, integrate acquired results into scientific papers and, building on this, independently prepare presentations and lectures.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

term paper (15 to 20 pages) and presentation (approx. 20 minutes), weighted 2:1
Assessment offered: Once a year, summer semester
Language of assessment: German and/or English
creditable for bonus

Allocation of places

10 places.
WA1:
(1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Selected Topics in Business Information Systems 1			12-M-AWI1-242-m01
Module coordinator		**Module offered by**	
Dean of the Faculty of Business Management and Economics		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

This module serves the purpose of transferring credits from
- courses taken at other German or non-German universities
- additional courses offered on a short-term basis
- courses offered by new Chairs that are yet to be included in the FSB (subject-specific provisions)

The holders of the respective Chairs will ensure that the courses are eligible for credit transfer.

Intended learning outcomes

As a result of accrediting multiple kinds of modules, a description of acquired skills cannot be given.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: German and/or English
Course type: alternatively S instead of V + Ü

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 minutes) or
b) presentation (15 to 20 minutes) with term paper (approx. 20 pages), weighted 1:2 or
c) oral examination (one candidate each: approx. 10 to 15 minutes; groups of 2: approx. 20 minutes; groups of 3: approx. 30 minutes)
Language of assessment: German and/or English
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)

Module title			Abbreviation
Selected Topics in Business Information Systems 2			12-M-AWI2-242-m01
Module coordinator		**Module offered by**	
Dean of the Faculty of Business Management and Economics		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

This module serves the purpose of transferring credits from
- courses taken at other German or non-German universities
- additional courses offered on a short-term basis
- courses offered by new Chairs that are yet to be included in the FSB (subject-specific provisions)

The holders of the respective Chairs will ensure that the courses are eligible for credit transfer.

Intended learning outcomes

As a result of accrediting multiple kinds of modules, a description of acquired skills cannot be given.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: German and/or English
Course type: alternatively S instead of V + Ü

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 minutes) or
b) presentation (15 to 20 minutes) with term paper (approx. 20 pages), weighted 1:2 or
c) oral examination (one candidate each: approx. 10 to 15 minutes; groups of 2: approx. 20 minutes; groups of 3: approx. 30 minutes)
Language of assessment: German and/or English
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)

Module title			Abbreviation
Selected Topics in Business Information Systems 3			12-M-AWI3-242-m01
Module coordinator			**Module offered by**
--			Faculty of Business Management and Economics
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	--	--	

Contents

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Intended learning outcomes

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Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: German and/or English
Course type: alternatively S instead of V + Ü

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 minutes) or
b) presentation (15 to 20 minutes) with term paper (approx. 20 pages), weighted 1:2 or
c) oral examination (one candidate each: approx. 10 to 15 minutes; groups of 2: approx. 20 minutes; groups of 3: approx. 30 minutes)
Language of assessment: German and/or English
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Information Systems (2024)

Module title			Abbreviation
Selected Topics in Business Information Systems 4			12-M-AWI4-242-m01
Module coordinator		**Module offered by**	
--		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	--	--	

Contents

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Intended learning outcomes

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Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: German and/or English
Course type: alternatively S instead of V + Ü

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 minutes) or
b) presentation (15 to 20 minutes) with term paper (approx. 20 pages), weighted 1:2 or
c) oral examination (one candidate each: approx. 10 to 15 minutes; groups of 2: approx. 20 minutes; groups of 3: approx. 30 minutes)
Language of assessment: German and/or English
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Information Systems (2024)

Module title			Abbreviation
Analytical Information Systems			12-M-BI-242-m01
Module coordinator			**Module offered by**
--			Faculty of Business Management and Economics
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	--	--	

Contents

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Intended learning outcomes

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Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 60 minutes)
Language of assessment: English
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management International (2024)
Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Business Analytics			12-M-BUA-242-m01
Module coordinator		**Module offered by**	
Holder of the Chair of Business Analytics		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

In this course, students will acquire important knowledge and skills that will enable them to prepare a well-structured term paper and to present the results of their work with the help of relevant topics in the field of business management decision models and methods and their application in the development of decision-support systems as well as analytical information systems and quantitative methods of data analysis.

Students work on current topics using methods from machine learning, mathematical optimization and simulation.

Intended learning outcomes

The module provides students with knowledge of:
- Scientific literature
- Implementation of methods in code
- Integration of developed results in scientific papers
- Creating presentations and lectures

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

term paper (20 to 25 pages) and presentation (approx. 20 minutes), weighted 2:1
Language of assessment: German and/or English

Allocation of places

10 places.
WA1:
(1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)

Master's degree (1 major) Economathematics (2024)

Module title	Abbreviation
Change Management	12-M-CIU-242-m01

Module coordinator	Module offered by
Holder of the Chair of Business Management, Management Accounting and Control	Faculty of Business Management and Economics

ECTS	Method of grading	Only after succ. compl. of module(s)
5	numerical grade	--

Duration	Module level	Other prerequisites
1 semester	graduate	--

Contents

Within the module, theoretical basics of change management are covered. In addition, we present and jointly analyze existing change projects in detail. We try to answer related questions, too. For example, the module discusses how to involve stakeholders in change, what motivates them to embrace change, and whether participation is a universal principle. The module covers projects like merging two departments, restarting a department with team building, conducting an employee survey, or developing a new mission statement. The majority of the projects are taken from the social sector, but can be transferred to industry and SMEs.

Intended learning outcomes

After participating the lecture, students will be able to understand the occurrence of resistance and massive emotional reactions in change processes. Change processes can be critically analyzed and the use of typical instruments in change processes can be questioned. Students are able to identify the typical pitfalls and hurdles in these processes and are able to use their knowledge for own future projects as well as to create their own solutions in change processes.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 minutes) or
b) term paper (approx. 15 pages)
Assessment offered: In the semester in which the course is offered
Language of assessment: German and/or English
creditable for bonus

Allocation of places

Number of places: 16.
WA:
Should the number of applications exceed the number of available places, places will be allocated as follows:
(1) Students who already have successfully completed courses offered by the supervising chair will be given preferential consideration.
a. Among applicants with the same number of successfully completed modules, places will be allocated according to the total number of ECTS credits achieved in the corresponding modules.
b. When places are allocated in accordance with b) and the number of applications exceeds the number of available places, places will be allocated according to the average grade of assessments taken in the corresponding courses.
c. Among applicants with the same average grade, places will be allocated by lot.
(2) Any remaining places are available to students who have not yet successfully completed any courses of the supervising chair. The selection is made according to study progress (number of semesters); among applicants with the same number of semesters, places will be allocated by lot. A waiting list will be maintained and places re-allocated as they become available.

Additional information

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Workload
150 h
Teaching cycle
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Referred to in LPO I (examination regulations for teaching-degree programmes)
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Module appears in
Master's degree (1 major) Management (2024) Master's degree (1 major) Information Systems (2024) Master's degree (1 major) International Economic Policy (2024) Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Decision Support Systems			12-M-DSS-242-m01
Module coordinator		**Module offered by**	
Holder of the Chair of Business Analytics		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

The course discusses advanced approaches for modelling and solving decision problems in business settings. The acquired insights are used to design and implement decision support systems using standard software tools (Python).

Intended learning outcomes

After successfully completing the course, students should be able to

- Understand the structure of classic business decision problems
- Isolate key elements from general problem descriptions and convert them to quantitative decision models
- Solve different classes of optimization problems (linear, network, integer, multi-objective, non-linear, stochastic)
- Implement decision support systems

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 minutes) or
b) oral examination (one candidate each: approx. 10 to 15 minutes, groups of 2: approx. 20 minutes, groups of 3: approx. 30 minutes)
Language of assessment: English
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management International (2024)
Master's degree (1 major) Artificial Intelligence (2024)
Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title	Abbreviation
Enterprise AI	12-M-EAI-242-m01

Module coordinator	Module offered by
Holder of the Chair of Business Management and Business Information Systems	Faculty of Business Management and Economics

ECTS	Method of grading	Only after succ. compl. of module(s)
5	numerical grade	--

Duration	Module level	Other prerequisites
1 semester	--	--

Contents

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Intended learning outcomes

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Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 minutes) or
b) term paper (approx. 15 pages) or
c) oral examination of one candidate each (approx. 20 minutes) or
d) portfolio (approx. 50 hours)
Language of assessment: English
Assessment offered: In the semester in which the course is offered
creditable for bonus

Allocation of places

Number of places: 35. Should the number of applications exceed the number of available places, places will be allocated as follows:
(1) Students who already have successfully completed courses offered by the supervising chair will be given preferential consideration.
a. Among applicants with the same number of successfully completed modules, places will be allocated according to the total number of ECTS credits achieved in the corresponding modules.
b. When places are allocated in accordance with 1.b) and the number of applications exceeds the number of available places, places will be allocated according to the average grade of assessments taken in the corresponding courses.
c. Among applicants with the same average grade, places will be allocated by lot.
(2) Any remaining places are available to students who have not yet successfully completed any courses of the supervising chair. The selection is made according to study progress (number of semesters); among applicants with the same number of semesters, places will be allocated by lot. A waiting list will be maintained and places re-allocated as they become available.

Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in
Master's degree (1 major) Management International (2024)
Master's degree (1 major) Artificial Intelligence (2024)
Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
E-Commerce			12-M-EC1-242-m01
Module coordinator		**Module offered by**	
Holder of the Junior Professorship of Digital Marketing and E-Commerce		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

E-commerce is a highly relevant field for almost all types of companies. However, the ecommerce approaches and strategies applied by companies differ strongly depending on the respective firm context (e.g., in terms of industry, types of customers, types of products). In this seminar, students analyze the specific e-commerce strategy of a selected firm. In doing so, they evaluate the strategies' current and future potential and make suggestions for improvements and for addressing future trends. Furthermore, each lecture session will contain short presentations where the students (in groups) will either apply selected lecture topics to real-world business cases or present the core aspects of research articles dealing with e-commerce topics in general.

Intended learning outcomes

This class enables students to gain insights into real-life e-commerce strategies and to train their abilities in assessing business strategies.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 to 120 minutes) or
b) term paper (15 to 20 pages)
Language of assessment: English
creditable for bonus

Allocation of places

Number of places: 15.
WA:
Should the number of applications exceed the number of available places, places will be allocated as follows:
(1) Students who already have successfully completed courses offered by the supervising chair will be given preferential consideration.
a. Among applicants with the same number of successfully completed modules, places will be allocated according to the total number of ECTS credits achieved in the corresponding modules.
b. When places are allocated in accordance with b) and the number of applications exceeds the number of available places, places will be allocated according to the average grade of assessments taken in the corresponding courses.
c. Among applicants with the same average grade, places will be allocated by lot.
(2) Any remaining places are available to students who have not yet successfully completed any courses of the supervising chair. The selection is made according to study progress (number of semesters); among applicants with the same number of semesters, places will be allocated by lot. A waiting list will be maintained and places re-allocated as they become available.

Additional information

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Workload

150 h

Teaching cycle
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Referred to in LPO I (examination regulations for teaching-degree programmes)
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Module appears in
Master's degree (1 major) Management (2024) Master's degree (1 major) Information Systems (2024) Master's degree (1 major) International Economic Policy (2024) Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Business Software 2: Data-driven Business Process Management and Automation			12-M-ERP-242-m01
Module coordinator		**Module offered by**	
Holder of the Chair of Business Management and Business Information Systems		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Content:
This module provides students with an overview of the structure of business information systems in width as well as the selection and implementation of business information systems in organisations.

Outline of syllabus:
1. Integrated information systems: integration, standard software, system architectures, operating models
2. Selection of integrated information systems: methods, cost-benefit analysis
3. Implementation of integrated information systems: project management, project organisation, project marketing

The lecture will be accompanied by an exercise that will present students with an opportunity to access, in small groups, the enterprise resource planning system operated by the Chair in its ERP laboratory and to work with the software, dealing with a wide variety of business processes.

Intended learning outcomes

After completing the course "Business Software 2", students will be able to
1. differentiate between system architectures and -philosophies;
2. understand the interaction of business processes;
3. come to a selection decision for an ERP system using a structured approach and compare different ERP systems;
4. execute business tasks and processes in an ERP system independently (after participation in the practice lessons).

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 minutes) or
b) oral examination (one candidate each: approx. 10 to 15 minutes, groups of 2: approx. 20 minutes, groups of 3: approx. 30 minutes) or
c) term paper (15 to 20 pages)
Assessment offered: Once a year, summer semester
Language of assessment: German and/or English
creditable for bonus

Allocation of places

50 places.
WM1:
Should the number of applications exceed the number of available places, places will be allocated as follows:
1) Master's students of Information Systems, Management and Economathematics will be given preferential consideration.
(2) The remaining places will be allocated to students of other subjects.

(3) When places are allocated in accordance with (1) and (2) and the number of applications exceeds the number of available places, places will be allocated by lot among applicants from this group.
Additional information
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Workload
150 h
Teaching cycle
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Referred to in LPO I (examination regulations for teaching-degree programmes)
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Module appears in
Master's degree (1 major) Management (2024) Master's degree (1 major) Information Systems (2024) Master's degree (1 major) International Economic Policy (2024) Master's degree (1 major) Economathematics (2024)

Module title	Abbreviation
Advanced Seminar: Enterprise Systems	12-M-ES-242-m01

Module coordinator	Module offered by
Holder of the Chair of Business Management and Business Information Systems	Faculty of Business Management and Economics

ECTS	Method of grading	Only after succ. compl. of module(s)
10	numerical grade	--

Duration	Module level	Other prerequisites
1 semester	graduate	--

Contents

In this course, students will acquire important knowledge and skills that will enable them to prepare a well-structured term paper and to present the results of their work with the help of relevant topics in the fields of information systems and enterprise systems.

Reading:
will vary according to topic

Intended learning outcomes

After completing the course "Enterprise Systems", students will be able to
1. understand the fundamentals of scientific literature reviews;
2. integrate elaborated content in a scientific thesis;
3. create presentations independently.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

term paper (20 to 25 pages) and presentation (approx. 20 minutes), weighted 2:1
Language of assessment: German and/or English

Allocation of places

10 places.
WA1:
(1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Entrepreneurship in Software-Ecosystems: Start & Scale Up, Venture Capital, Private Equity, EXIT			12-M-ESE-242-m01
Module coordinator		**Module offered by**	
--		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	--	--	

Contents

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Intended learning outcomes

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Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 minutes) or
b) oral examination (one candidate each: approx. 10 to 15 minutes, groups of 2: approx. 20 minutes, groups of 3: approx. 30 minutes) or
c) term paper (15 to 20 pages)
Language of assessment: German and/or English
creditable for bonus

Allocation of places

Number of places: 50.
WA:
Should the number of applications exceed the number of available places, places will be allocated as follows:
(1) Students who already have successfully completed courses offered by the supervising chair will be given preferential consideration.
a. Among applicants with the same number of successfully completed modules, places will be allocated according to the total number of ECTS credits achieved in the corresponding modules.
b. When places are allocated in accordance with b) and the number of applications exceeds the number of available places, places will be allocated according to the average grade of assessments taken in the corresponding courses.
c. Among applicants with the same average grade, places will be allocated by lot.
(2) Any remaining places are available to students who have not yet successfully completed any courses of the supervising chair. The selection is made according to study progress (number of semesters); among applicants with the same number of semesters, places will be allocated by lot. A waiting list will be maintained and places re-allocated as they become available.

Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title	Abbreviation
Global Logistics & Supply Chain Management	12-M-GLSC-182-m01

Module coordinator	Module offered by
Holder of the Chair of Logistics and Quantitative Methods in Business Administration	Faculty of Business Management and Economics

ECTS	Method of grading	Only after succ. compl. of module(s)
5	numerical grade	--

Duration	Module level	Other prerequisites
1 semester	graduate	--

Contents

The course "Global Logistics & Supply Chain Management" acquaints students with advanced methods for the planning of global production networks and demonstrates the application of these with the help of multiple case studies.

Intended learning outcomes

After completing this course students can
(i) analyze and evaluate global production networks;
(ii) develop and apply appropriate methods to plan production networks;
(iii) evaluate the consequences of uncertainties in processes and apply concepts and methods to plan uncertain processes.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 minutes) or b) term paper (approx. 15 to 20 pages)
Language of assessment: English
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2018)
Master's degree (1 major) International Economic Policy (2018)
Master's degree (1 major) China Business and Economics (2019)
Master's degree (1 major) China Language and Economy (2019)
Master's degree (1 major) Information Systems (2019)
Master's degree (1 major) China Business and Economics (2021)
Master's degree (1 major) China Language and Economy (2021)
Master's degree (1 major) Economathematics (2021)
Master's degree (1 major) Information Systems (2022)

Master's degree (1 major) International Economic Policy (2022)
Master's degree (1 major) Management (2022)
Master's degree (1 major) Economathematics (2022)
exchange program Business Management and Economics (2022)
Master's degree (1 major) Management International (2024)
Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Business Software 1: Management and Implementation of Information Systems			12-M-GPU-242-m01
Module coordinator		**Module offered by**	
--		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	--	--	

Contents

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Intended learning outcomes

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Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 minutes) or
b) oral examination (one candidate each: approx. 10 to 15 minutes; groups of 2: approx. 20 minutes; groups of 3: approx. 30 minutes) or
c) term paper (15 to 20 pages)
Assessment offered: once a year, winter semester
Language of assessment: German and/or English
creditable for bonus

Allocation of places

50 places.
WM1:
Should the number of applications exceed the number of available places, places will be allocated as follows:
1) Master's students of Information Systems, Management and Economathematics will be given preferential consideration.
(2) The remaining places will be allocated to students of other subjects.
(3) When places are allocated in accordance with (1) and (2) and the number of applications exceeds the number of available places, places will be allocated by lot among applicants from this group.

Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title	Abbreviation
Human Resource Management and Industrial Relations	12-M-HRM-242-m01

Module coordinator	Module offered by
Holder of the Chair of Human Resource Management and Organisation	Faculty of Business Management and Economics

ECTS	Method of grading	Only after succ. compl. of module(s)
5	numerical grade	--

Duration	Module level	Other prerequisites
1 semester	graduate	--

Contents

The lecture "Human Resource Management and Industrial Relations" introduces advanced theories, estimation techniques and empirical results from the areas of human resources management and institutional frameworks such as ithe different actors in ndustrial relations.

Syllabus

Introduction: Human Resource Management & Industrial Relationships

Chapter 1: The employment contract [formal model]

Chapter 2: Motivation [formal model]

Chapter 3: Employee resistance against reorganisations [empirical study]

Chapter 4: The role of works councils [formal model]

Chapter 5: Works councils and the employer wage structure [empirical study]

Chapter 6: The behaviour of labour unions [formal model]

Chapter 7: Learning process of employers [formal model and empirical study]

Chapter 8: Demographic challenges of HRM [formal model and empirical study]

Intended learning outcomes

The aim of the lectures is to enable students to understand and apply advanced theories, estimation techniques and empirical results in the area human resource management and industrial relations on the basis of scientifc literature.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 minutes) or
b) term paper (approx. 15 pages)
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle
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Referred to in LPO I (examination regulations for teaching-degree programmes)
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Module appears in
Master's degree (1 major) Management International (2024) Master's degree (1 major) Management (2024) Master's degree (1 major) Information Systems (2024) Master's degree (1 major) International Economic Policy (2024) Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
E-Business Strategies			12-M-IBS-242-m01
Module coordinator		**Module offered by**	
Holder of the Chair of Information Systems Engineering		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

The module provides an overview of strategic implications of digital technologies at the level of organisations, industries and value networks. To this end, concepts and frameworks from strategic technology management are applied to digital innovations and illustrated with numerous examples. In the accompanying exercise, case studies of well-known digital companies and their business models are analysed and discussed.

Intended learning outcomes

- Understand theoretical concepts of strategy development and implementation in the context of digital technologies.

- Apply different frames of reference and understand their strengths and weaknesses in the context of practical application.

- Transfer the concepts to real business situations

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 minutes) or
b) oral examination (one candidate each: approx. 10 to 15 minutes; groups of 2: approx. 20 minutes; groups of 3: approx. 30 minutes)
Language of assessment: English
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management International (2024)
Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Seminar: International Climate Policy			12-M-ICP-242-m01
Module coordinator			**Module offered by**
--			Faculty of Business Management and Economics
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	--	--	

Contents

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Intended learning outcomes

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Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

term paper (20 to 25 pages) and presentation (approx. 20 minutes), weighted 2:1
Language of assessment: English

Allocation of places

10 places.
WA1:
(1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Strategic Managerial Accounting			12-M-INST-242-m01
Module coordinator		**Module offered by**	
Holder of the Chair of Business Management, Management Accounting and Control		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

The module focuses on accounting instruments, which are applied in the context of strategic management of enterprises. First, it addresses important drivers of strategic decisions from a microeconomic perspective, such as the emergence of cost and quality advantages in competition as well as scale and experience curve effects. Second, the module covers analytical and heuristic techniques of planning and control. In the context of these techniques, instruments of target costing, life cycle cost analysis, benchmarking and business wargaming are discussed with regard to their theoretical foundation and fields of application.

Intended learning outcomes

Initially, knowledge about fundamental requirements concerning instruments of decision-making and behavior control within enterprises is acquired. What is more, the module conveys obtaining knowledge about the strengths and weaknesses and therewith fields of application and limits of prevalent instruments of strategic corporate management used by practitioners.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 minutes) or
b) term paper (approx. 15 pages)
Language of assessment: German and/or English
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Information Systems			12-M-IS-242-m01
Module coordinator			**Module offered by**
--			Faculty of Business Management and Economics
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	--	--	

Contents

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Intended learning outcomes

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Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 minutes) or
b) term paper (15 to 20 pages)
Language of assessment: German and/or English
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)

Module title	Abbreviation
Seminar: Applied Analytics in Logistics & Supply Chain Management	12-M-LSCM-242-m01

Module coordinator	Module offered by
Holder of the Chair of Logistics and Quantitative Methods in Business Administration	Faculty of Business Management and Economics

ECTS	Method of grading	Only after succ. compl. of module(s)
10	numerical grade	--

Duration	Module level	Other prerequisites
1 semester	graduate	--

Contents

Quantitative planning approaches are particularly valuable for designing logistics systems and supply chains. They support decision makers in taking important strategic, tactical, and operational decisions by providing well-founded and relevant information. Many of these decisions have significant impact on the competitiveness of companies because they considerably influence today's as well as tomorrow's costs and revenues. The adoption of quantitative planning methods has been strongly supported by the development of information and communication systems: Advanced tools are available at low costs, versatile methods to model and solve planning problems have been integrated in standard software, the user friendliness has improved, and last but not least: the access to necessary data has substantially progressed (i.e. through ERP systems).

Intended learning outcomes

The main objective of this seminar is to familiarize participants with diverse quantitative planning problems and potential solutions. Planning procedures are applied to solve real problems in companies. Participants in this seminar learn about actual planning problems in Logistics and Supply Chain Management; they analyze and understand how companies address these problems.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

term paper (20 to 25 pages) and presentation (approx. 20 minutes), weighted 2:1
Language of assessment: German and/or English

Allocation of places

10 places.
WA1:
(1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)

Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Marketing Analytics			12-M-MA-242-m01
Module coordinator			**Module offered by**
--			Faculty of Business Management and Economics
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	--	--	

Contents

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Intended learning outcomes

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Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 to 120 minutes) or
b) term paper (15-20 pages)
Language of assessment: English
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management International (2024)
Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Seminar: Macroeconomics and Quantitative Economic Research			12-M-MEW-242-m01
Module coordinator		**Module offered by**	
Head of the Work Group of Empirical Economics		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

This course will provide students with a more in-depth understanding of specific problems of macroeconomics and quantitative economic research. A current list of topics, from which students may select one, is available on my website.

Intended learning outcomes

After the seminar, students can
(i) consolidate acquired knowledge and if necessary apply additional techniques of scientific work;
(ii) create, present and defend a scientific paper;
(iii) deal with the working papers of other participants;
(iv) prepare beter for the processing of the master's thesis.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

term paper (20 to 25 pages) and presentation (approx. 20 minutes), weighted 2:1
Language of assessment: English

Allocation of places

10 places.
WA1:
(1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title	Abbreviation
Advanced Seminar: Marketing Strategy	12-M-MSS-242-m01

Module coordinator	Module offered by
Holder of the Junior Professorship of Digital Marketing and E-Commerce	Faculty of Business Management and Economics

ECTS	Method of grading	Only after succ. compl. of module(s)
10	numerical grade	--

Duration	Module level	Other prerequisites
1 semester	graduate	--

Contents

In this course, students will acquire important knowledge and skills that will enable them to prepare a well-structured paper and to present the results of their work with the help of relevant topics in the fields of strategic marketing and strategic management.

Reading:
will vary according to topic

Intended learning outcomes

After completing the course "Marketing Strategie", students will be able to
1. understand the fundamentals of scientific literature reviews;
2. integrate elaborated content in a scientific thesis;
3. create presentations independently.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

term paper (20 to 25 pages) and presentation (approx. 20 minutes), weighted 2:1
Language of assessment: German and/or English

Allocation of places

10 places.
WA1:
(1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Mobile and Ubiquitous Business			12-M-MUS-242-m01
Module coordinator			**Module offered by**
Holder of the Chair of Information Systems Engineering			Faculty of Business Management and Economics
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

The module provides an overview of technologies and business applications of mobile & ubiquitous computing. Concepts and applications are illustrated using numerous examples from mobile telecommunications to the Internet of Things. In the accompanying exercise, corresponding case study texts are analysed and discussed.

Intended learning outcomes

- Understand the technological basics of mobile & ubiquitous computing.

- Analysing business applications in processes, products/services and business models

- Apply the concepts learned to real-life problems in a business context

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 minutes) or
b) oral examination (one candidate each: approx. 10 to 15 minutes; groups of 2: approx. 20 minutes; groups of 3: approx. 30 minutes)
Language of assessment: English
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management International (2024)
Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Organizational Economics and Digital Transformation			12-M-OEDT-231-m01
Module coordinator			**Module offered by**
--			Faculty of Business Management and Economics
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	--	--	

Contents

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Intended learning outcomes

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Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 minutes) or b) term paper (approx. 15 pages)
Language of assessment: English
Creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2018)
Master's degree (1 major) International Economic Policy (2018)
Master's degree (1 major) Information Systems (2019)
Master's degree (1 major) Information Systems (2022)
Master's degree (1 major) International Economic Policy (2022)
Master's degree (1 major) Management (2022)
Master's degree (1 major) Management International (2024)
Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title	Abbreviation
Project Management and Control	12-M-PROM-242-m01

Module coordinator	Module offered by
Holder of the Chair of Business Management, Management Accounting and Control	Faculty of Business Management and Economics

ECTS	Method of grading	Only after succ. compl. of module(s)
5	numerical grade	--

Duration	Module level	Other prerequisites
1 semester	graduate	--

Contents

The module focuses on the discussion and critical examination of instruments and methods used in the context of project management and control within enterprises. Both classic and agile approaches to project management are considered. It covers characteristic features and structures of projects, their possible success factors, methods and instruments of control and management of projects in various project phases. The theoretical basis as well as potential applications of these instruments are discussed.

Intended learning outcomes

Initially, knowledge about fundamental requirements concerning instruments of project management and control is acquired. What is more, the module conveys knowledge about strengths and weaknesses and therewith fields of application and limits of commonly used instruments and methods of practitioners. Competences within the configuration and development of the project management and control as well as skills within the practical use are obtained.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx. 60 minutes)
Language of assessment: German and/or English
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Project Seminar			12-M-PSI-242-m01
Module coordinator			**Module offered by**
--			Faculty of Business Management and Economics
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
15	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	--	--	

Contents

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Intended learning outcomes

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Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

project: preparing a conceptual design (approx. 150 hours), designing and implementing an approach to solution (approx. 300 hours) as well as presentation (approx. 20 minutes), weighted 1:2:1
Language of assessment: German and/or English
creditable for bonus

Allocation of places

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Additional information

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Workload

450 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Information Systems (2024)

Module title			Abbreviation
Research Seminar in Applied Data Science			12-M-RS-242-m01
Module coordinator			**Module offered by**
--			Faculty of Business Management and Economics
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	--	--	

Contents

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Intended learning outcomes

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Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

term paper (20 to 25 pages) and presentation (approx. 20 minutes), weighted 2:1
Language of assessment: English

Allocation of places

10 places.
WA1:
(1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Advanced Seminar: Entrepreneurship and Management			12-M-SAS-242-m01
Module coordinator		**Module offered by**	
Holder of the Chair of Entrepreneurship and Strategy		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Students develop seminar papers on varying topics in the domain of entrepreneurship, strategy, and innovation and present the key insights from their work.

Intended learning outcomes

Educational aims

- Enable students to position their research
- Enable students to critically review a substantial body of literature in short time
- Enable students to develop a sound theoretical framework
- Enable students to create a research paper fully meeting academic standards

Learning outcomes

On successful completion of this module students will be able to:

- Differentiate their research from previous work
- Adopt theoretical perspectives to understand complex phenomena
- Engage in comprehensive academic reasoning
- Articulate abstract and complex phenomena and relationships in written and oral form

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

term paper (approx. 20 pages) and presentation (15 to 30 minutes), weighted 2:1
Assessment offered: Once a year, winter semester
Language of assessment: German and/or English

Allocation of places

10 places.
WA1:
(1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in
Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Advanced Seminar: Corporate Finance			12-M-SBL-242-m01
Module coordinator			**Module offered by**
Holder of the Chair of Corporate Finance			Faculty of Business Management and Economics
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

This seminar deals with current topics in investment and finance. Students are required to independently analyze a selected topic and to write a seminar thesis. Moreover, they are required to present, discuss and defend their thesis. The seminar may be largely literature based or empirical or may be based on independent work with formal models.

Intended learning outcomes

Students will gain in-depth knowledge in recent application areas of investment and finance. They are able to transport their knowledge in a written seminar thesis, and to present and defend it in a final talk.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

term paper (20 to 25 pages) and presentation (approx. 20 minutes), weighted 2:1
Language of assessment: German and/or English

Allocation of places

10 places.
WA1:
(1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Industrial Management 1			12-M-SBM-242-m01
Module coordinator		**Module offered by**	
Holder of the Chair of Business Management and Industrial Management		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

The course addresses central issues of strategic supply management. The supply function of the company (purchasing, materials management, procurement logistics) and its strategic importance is analysed and basic methods are developed that are relevant in this area.

Intended learning outcomes

Students learn the principles of performance-oriented optimization of all procurement activities to develop long-term, competitively sensitive potential for success. After completion of the module students are able to prepare structured, to goal-oriented analyze and to respond to performance-oriented issues of strategic procurement based on key instruments. Students are able to accurately classify the tasks of the procurement and to describe and discuss their strategic importance and dominate essential methods and procedures used in this area to apply.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 40 to 60 minutes) or
b) presentation (approx. 20 minutes) and term paper (15 to 20 pages), weighted 1:1 or
c) term paper (30 to 40 pages) or
d) portfolio (approx. 50 hours)
Language of assessment: German and/or English
Assessment offered: Only when announced in the semester in which the courses are offered
creditable for bonus

Allocation of places

Number of places: 20.
WA:
Should the number of applications exceed the number of available places, places will be allocated as follows:
(1) Students who already have successfully completed courses offered by the supervising chair will be given preferential consideration.
a. Among applicants with the same number of successfully completed modules, places will be allocated according to the total number of ECTS credits achieved in the corresponding modules.
b. When places are allocated in accordance with b) and the number of applications exceeds the number of available places, places will be allocated according to the average grade of assessments taken in the corresponding courses.
c. Among applicants with the same average grade, places will be allocated by lot.
(2) Any remaining places are available to students who have not yet successfully completed any courses of the supervising chair. The selection is made according to study progress (number of semesters); among applicants with the same number of semesters, places will be allocated by lot. A waiting list will be maintained and places re-allocated as they become available.

Additional information

Module can be taught in form of E Learning course or as a block.

Workload
150 h
Teaching cycle
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Referred to in LPO I (examination regulations for teaching-degree programmes)
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Module appears in
Master's degree (1 major) Management (2024) Master's degree (1 major) Information Systems (2024) Master's degree (1 major) International Economic Policy (2024) Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Seminar: E-Business Strategies			12-M-SEBS-242-m01
Module coordinator			**Module offered by**
Holder of the Chair of Information Systems Engineering			Faculty of Business Management and Economics
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

In this course, students will acquire important knowledge and skills that will enable them to prepare a well-structured term paper and to present the results of their work with the help of relevant topics in the fields of web-based platforms (electronic markets, Web 2.0 etc.) and strategic management of a company.

Intended learning outcomes

- Academic literature review

- Integration of developed results in scientific papers

- Creating presentations and talks

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

term paper (20 to 25 pages) and presentation (approx. 20 minutes), weighted 2:1
Assessment offered: Once a year, winter semester
Language of assessment: German and/or English

Allocation of places

10 places.
WA1:
(1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) Economathematics (2024)

Module title	Abbreviation
Advanced Seminar: Financial Accounting	12-M-SER-242-m01

Module coordinator	Module offered by
Holder of the Chair of Financial Accounting	Faculty of Business Management and Economics

ECTS	Method of grading	Only after succ. compl. of module(s)
10	numerical grade	--

Duration	Module level	Other prerequisites
1 semester	graduate	--

Contents

The module provides students with more in-depth insights into current problems of external accounting and auditing, usually using scientific primary literature in English or German language.

Intended learning outcomes

After completion of the module, participants have
(i) consolidated the learned issues and possibly applied additional techniques of scientific work;
(ii) created and defended a qualifying level relevant scientific work;
(iii) conducted a scientific examination of the work results of other seminar participants;
(iv) the ability to present and develop solution-oriented their own performance adequately considering communicative aspects.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

term paper (20 to 25 pages) and presentation (approx. 20 minutes) (weighted 2:1)
Language of assessment: German and/or English

Allocation of places

10 places.
WA1:
(1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) Economathematics (2024)

Module title	Abbreviation
Advanced Seminar: Industrial Management	12-M-SI-242-m01

Module coordinator	Module offered by
Holder of the Chair of Business Management and Industrial Management	Faculty of Business Management and Economics

ECTS	Method of grading	Only after succ. compl. of module(s)
10	numerical grade	--

Duration	Module level	Other prerequisites
1 semester	graduate	--

Contents

In the seminar, students will write seminar papers on selected topics in the field of industrial management. The central issues and findings of these papers will have to be presented in class.

Intended learning outcomes

The students have acquired in-depth knowledge in key application areas of industrial management and learned by taking care of the seminar to deepen their knowledge for making scientific work, to research literature necessary, to filter, to evaluate, tu critically analyze and to ask each other. On this basis, and, where appropriate, with introduction of own scientifically based further developments, the participants will learn to prepare a written contribution to the topic of Industrial Management, which complies with the principles of scientific work. Through the lecture, students learn to present selected content of their housework in a suitable form and a predetermined time frame and to defend the findings in the course of a critical, scientific discussion.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) term paper (20 to 25 pages) and presentation (approx. 20 minutes), weighted 2:1 or
b) term paper (15 to 20 pages) and presentation (approx. 45 minutes), weighted 1:1
Language of assessment: German and/or English

Allocation of places

10 places.
WA1:
(1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Advanced Seminar: Industrial Organization			12-M-SIO-242-m01
Module coordinator			**Module offered by**
Holder of the Chair of Industrial Economics			Faculty of Business Management and Economics
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

This course covers selected advanced topics from the field of industrial economics. Students, with the help of their advisor, will choose a topic and formulate a research question. Then they are expected to conduct research and write a paper on this research question. At the end of the semester the students will present their findings orally to an audience.

Intended learning outcomes

After completing the course "Seminar: Industrieökonomik", students will be able to
1. perform a survey of the scientific literature on a given topic;
2. critically assess the economic models and their findings in the literature;
3. describe the economic mechanisms underlying important economic observations;
4. suggest future research directions;
5. present their findings to an audience.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

term paper (approx. 20 pages) and presentation (approx. 20 minutes), weighted 2:1
Language of assessment: German and/or English

Allocation of places

10 places.
WA1:
(1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title	Abbreviation
Strategic Management of Global Supply Chains	12-M-SMGS-242-m01

Module coordinator	Module offered by
Holder of the Chair of Logistics and Quantitative Methods in Business Administration	Faculty of Business Management and Economics

ECTS	Method of grading	Only after succ. compl. of module(s)
5	numerical grade	--

Duration	Module level	Other prerequisites
1 semester	graduate	--

Contents

Description:
In the course "Strategic Management of Global Supply Chains", students will become familiar with the basic principles of building an efficient global supply chain and will apply what they have learned working on multiple case studies.

Intended learning outcomes

After completing this course students
(i) can apply the basic methods and concepts of supply chain management to practical settings and evaluate the results, and
(ii) understand the effects of global value chains onto strategic company decisions.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

written examination (approx 60 minutes)
Language of assessment: English
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management International (2024)
Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Advanced Seminar: Econometrics			12-M-SOE-242-m01
Module coordinator			**Module offered by**
Holder of the Chair of Econometrics			Faculty of Business Management and Economics
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

This module will take the form of a seminar and will cover advanced topics in econometrics. Students will be required to independently familiarise themselves with the respective topics and to present the results of their work both in a seminar paper and orally during a seminar session.

Intended learning outcomes

Students are able to analyze independently academic publications on their relevance for a given theme. They can present the results orally and in writing by conventional scientific standards.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

term paper (ca. 15 pages) and presentation (approx. 20 minutes), weighted 2:1
Language of assessment: English

Allocation of places

10 places.
WA1:
(1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title	Abbreviation
Industrial Management 3	12-M-SPM-242-m01

Module coordinator	Module offered by
Holder of the Chair of Business Management and Industrial Management	Faculty of Business Management and Economics

ECTS	Method of grading	Only after succ. compl. of module(s)
5	numerical grade	--

Duration	Module level	Other prerequisites
1 semester	graduate	--

Contents

This module will discuss contents and procedures of strategic production management and, in particular, planning and control concepts.
Students will become familiar with the essentials of strategic production management. Theoretical and analytical models will be used for analysing both economic and ecological issues. In addition, the module will discuss principles of value structure optimisation and will develop competences regarding the development of integrated mathematical models.

Intended learning outcomes

After completion of the module students are able to process, to analyze and answer questions of operations strategy structured and goal-oriented in a global context using appropriate methods. Furthermore, they know the main strategic tasks and objectives in production management and evaluate and apply planning and control concepts for the production in realistic application situations.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 40 to 60 minutes) or
b) presentation (approx. 20 minutes) and term paper (15 to 20 pages), weighted 1:1 or
c) term paper (30 to 40 pages) or
d) portfolio (approx. 50 hours)
Language of assessment: German and/or English
Assessment offered: Only when announced in the semester in which the courses are offered
creditable for bonus

Allocation of places

Number of places: 20.
WA:
Should the number of applications exceed the number of available places, places will be allocated as follows:
(1) Students who already have successfully completed courses offered by the supervising chair will be given preferential consideration.
a. Among applicants with the same number of successfully completed modules, places will be allocated according to the total number of ECTS credits achieved in the corresponding modules.
b. When places are allocated in accordance with b) and the number of applications exceeds the number of available places, places will be allocated according to the average grade of assessments taken in the corresponding courses.
c. Among applicants with the same average grade, places will be allocated by lot.
(2) Any remaining places are available to students who have not yet successfully completed any courses of the supervising chair. The selection is made according to study progress (number of semesters); among applicants with the same number of semesters, places will be allocated by lot. A waiting list will be maintained and places re-allocated as they become available.

Additional information

Module can be taught in form of E Learning course or as a block.

Workload
150 h
Teaching cycle
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Referred to in LPO I (examination regulations for teaching-degree programmes)
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Module appears in
Master's degree (1 major) Management (2024) Master's degree (1 major) Information Systems (2024) Master's degree (1 major) International Economic Policy (2024) Master's degree (1 major) Economathematics (2024)

Module title	Abbreviation
Advanced Seminar: Topics in Personnel Economics and Organizational Theory	12-M-SPO-242-m01

Module coordinator	Module offered by
Holder of the Chair of Human Resource Management and Organisation	Faculty of Business Management and Economics

ECTS	Method of grading	Only after succ. compl. of module(s)
10	numerical grade	--

Duration	Module level	Other prerequisites
1 semester	graduate	--

Contents

Students will write a seminar paper on, deliver a talk on and discuss current issues in the field of human resources management and organisation.

Intended learning outcomes

The students learn to handle, write in own words, present, and discuss current research literature in the area human resource management and organisation.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

term paper (approx. 20 pages) and presentation with sub-presentation including discussion (approx. 50 minutes), weighted 1:1
Language of assessment: English

Allocation of places

10 places.
WA1:
(1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Advanced Seminar: Analytical Tax Research			12-M-SSL-242-m01
Module coordinator			**Module offered by**
Holder of the Chair of Business Taxation			Faculty of Business Management and Economics
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

In this seminar, current problems of tax research will be analysed. Usually, students will read and discuss research papers in German and/or English language.
Although the seminar will be held in German, individual seminar papers may be written and discussed in English if a participant prefers this to German.

Intended learning outcomes

After the seminar, students are able
- to analyze a complex issue in taxation using research methods,
- to identify problems and to suggest solutions,
- to formulate and to defend their analysis and suggested solutions.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

term paper (20 to 25 pages) and presentation (approx. 20 minutes), weighted 2:1
Language of assessment: German and/or English

Allocation of places

10 places.
WA1:
(1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Advanced Seminar: Public Finance			12-M-SV5-242-m01
Module coordinator			**Module offered by**
Holder of the Chair of Public Finance			Faculty of Business Management and Economics
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Gaining a more in-depth understanding of specific problems discussed in lectures on public finance using scientific economic journal articles in German and English language.

Intended learning outcomes

After the seminar, students can
(i) consolidate acquired knowledge and if necessary apply additional techniques of scientific work;
(ii) create, present and defend a scientific paper;
(iii) deal with the working papers of other participants;
(iv) prepare beter for the processing of the master's thesis.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

term paper (20 to 25 pages) and presentation (approx. 20 minutes), weighted 2:1
Assessment offered: Once a year, summer semester
Language of assessment: English

Allocation of places

10 places.
WA1:
(1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Practical Seminar: Economic Journalism			12-M-SWJ-242-m01
Module coordinator			**Module offered by**
Holder of the Professorship of Economic Journalism			Faculty of Business Management and Economics
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Students will acquire an in-depth insight into the practical side of economics journalism. They must complete their placements at company or other institution at which they will have an opportunity to gain an in-depth knowledge of economics journalism. Students will be required to prepare a practical report on the placement module as well as to submit proof of regular attendance and participation. In addition, a certificate issued by the placement company is to be submitted.

Intended learning outcomes

The module strengthens practical competences and encourages work experiences. So it prepares for the career start in economics journalism.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

portfolio on observation visit, including work samples (approx 40 pages)
Language of assessment: German and/or English

Allocation of places

10 places.
WA1:
(1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Advanced Seminar: Labour Economics			12-M-SWOSP-242-m01
Module coordinator		**Module offered by**	
Holder of the Chair of Labor Economics		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

This seminar targets any students interested in acquiring the skills to conduct an empirical study to understand people's social behavior and social preferences. We will read and discuss scientific methodological papers that allow students to acquire the necessary empirical tools to conduct an empirical thesis.

The recurring topic will be related to the origins of social cohesion and social preferences, the role of the family and the school in shaping children's social behavior and preferences.

Intended learning outcomes

This seminar is designed to acquire the skills to write a master thesis at the Chair of Labour Economics. It focuses on the acquisition of empirical tools - mostly related to experimental empirical tools - in order to understand the determinants of social behavior and preferences.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

term paper (20 to 25 pages) and presentation (approx. 20 minutes), weighted 2:1
Language of assessment: English

Allocation of places

10 places.
WA1:
(1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Topics in Artificial Intelligence			12-M-TAI-242-m01
Module coordinator			**Module offered by**
--			Faculty of Business Management and Economics
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	--	--	

Contents

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Intended learning outcomes

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Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 to 90 minutes) or
b) written examination (questions concerning mathematical methodology; approx. 120 minutes) or
c) term paper (15 to 20 pages) or
d) presentation (30 to 45 minutes)
Assessment offered: In the semester in which the course is offered
Language of assessment: German and/or English
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Topics in Business Analytics			12-M-TBA-242-m01
Module coordinator			**Module offered by**
--			Faculty of Business Management and Economics
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	--	--	

Contents

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Intended learning outcomes

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Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 to 90 minutes) or
b) written examination (questions concerning mathematical methodology; approx. 120 minutes) or
c) term paper (15 to 20 pages) or
d) presentation (30 to 45 minutes)
Assessment offered: In the semester in which the course is offered
Language of assessment: German and/or English
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Applied Data Analysis and Machine Learning			12-M-TDS-242-m01
Module coordinator		**Module offered by**	
Holder of the Chair of Business Analytics		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Data science is concerned with extracting knowledge and valuable insights from data assets. It is an emerging field that is currently in high demand in both academia and industry. This course provides a practical introduction to the full spectrum of data science techniques spanning data acquisition and processing, data visualization and presentation, creation and evaluation of machine learning models.

The course focuses on the practical aspects of data science, with emphasis on the implementation and use of the above techniques. Students will complete programming homework assignments that emphasize practical understanding of the methods described in the course.

Intended learning outcomes

Topics covered include:
- Data acquisition and processing
- graph and network models
- text analysis
- working with geospatial data
- Usage of machine learning models (supervised and unsupervised)

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 minutes) or
b) term paper (approx. 15 pages)
Language of assessment: English
Assessment offered: In the semester in which the course is offered
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management International (2024)
Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)

Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Applied Data Science in Business and Economics			12-M-TE-242-m01
Module coordinator			**Module offered by**
--			Faculty of Business Management and Economics
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	--	--	

Contents

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Intended learning outcomes

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Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

portfolio (approx. 50 hours)
Prüfungssprache: Englisch
Creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Topics in Electronic Business			12-M-TEB-242-m01
Module coordinator			**Module offered by**
--			Faculty of Business Management and Economics
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	--	--	

Contents

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Intended learning outcomes

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Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 to 90 minutes) or
b) written examination (questions concerning mathematical methodology; approx. 120 minutes) or
c) term paper (15 to 20 pages) or
d) presentation (30 to 45 minutes)
Assessment offered: In the semester in which the course is offered
Language of assessment: German and/or English
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Seminar: Topics in Economics and Ethics of Artificial Intelligence			12-M-TEE-242-m01
Module coordinator			**Module offered by**
--			Faculty of Business Management and Economics
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	--	--	

Contents

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Intended learning outcomes

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Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

term paper (15 to 20 pages) and presentation (approx. 30 minutes); weighted 60:40
Language of assessment: English

Allocation of places

10 places.
WA1:
(1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Topics in Enterprise Systems			12-M-TES-242-m01
Module coordinator			**Module offered by**
--			Faculty of Business Management and Economics
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	--	--	

Contents

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Intended learning outcomes

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Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 to 90 minutes) or
b) written examination (questions concerning mathematical methodology; approx. 120 minutes) or
c) term paper (15 to 20 pages) or
d) presentation (30 to 45 minutes)
Assessment offered: In the semester in which the course is offered
Language of assessment: German and/or English
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Enterprise AI and Urban Analytics			12-M-UAAI-242-m01
Module coordinator			**Module offered by**
--			Faculty of Business Management and Economics
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	--	--	

Contents

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Intended learning outcomes

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Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

term paper (20 to 25 pages) and presentation (approx. 20 minutes), weighted 2:1
Language of assessment: English

Allocation of places

10 places.
WA1:
(1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Corporate Entrepreneurship and Innovation			12-M-UGF1-242-m01
Module coordinator		**Module offered by**	
Holder of the Chair of Entrepreneurship and Strategy		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

This module is a theory-led and practice-oriented primer on corporate entrepreneurship. It provides you with knowledge useful for anyone aiming at working (or researching) in the field of corporate innovation and entrepreneurship or at pursuing an 'intrapreneurial' or entrepreneurial career.

(1) Introduction to corporate entrepreneurship

(2) Antecedents and forms of corporate entrepreneurship

(3) Corporate strategy and corporate entrepreneurship

(4) Organizational structure and corporate entrepreneurship

(5) Human resource management and corporate entrepreneurship

(6) Building supportive organizational cultures

(7) Entrepreneurial control systems

(8) Entrepreneurial leadership

(9) The corporate entrepreneur as a champion and diplomat

(10) The pay-off from corporate entrepreneurship

(11) Corporate venture capital

(12) Corporate entrepreneurship in nonprofit and government organizations

(13) Universities and academic spin-offs

(14) Wrap-up and Q&A

Intended learning outcomes

Educational aims

- Clarify the role of corporate entrepreneurship
- Explain theoretical concepts and mechanisms behind corporate entrepreneurship
- Enable students to critically appraise alternative approaches to corporate entrepreneurship
- Enable students to evaluate the boundaries and risks of corporate entrepreneurship

Learning outcomes

On successful completion of this module students will be able to:

- Create and evaluate concepts related to corporate entrepreneurship
- Assess the role of corporate entrepreneurship for creating and sustaining competitive advantage
- Make judgements about the organizational and managerial implications of corporate entrepreneurship
- Systematically choose between different routes of action

Courses (type, number of weekly contact hours, language — if other than German)
V (2) + Ü (2) Module taught in: English
Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)
a) written examination (approx. 60 to 120 minutes) or b) term paper (15 to 20 pages) or c) oral examination of one candicate each (approx. 10 to 15 minutes) or oral examination in groups (groups of 2 approx. 20 minutes, groups of 3 approx. 30 minutes) Language of assessment: English
Allocation of places
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Additional information
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Workload
150 h
Teaching cycle
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Referred to in LPO I (examination regulations for teaching-degree programmes)
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Module appears in
Master's degree (1 major) Management International (2024) Master's degree (1 major) Management (2024) Master's degree (1 major) Information Systems (2024) Master's degree (1 major) International Economic Policy (2024) Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Corporate Strategy			12-M-UGF2-182-m01
Module coordinator		**Module offered by**	
Holder of the Chair of Entrepreneurship and Strategy		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

This theory-led and application-oriented module provides you with critical knowledge and skills related to corporate strategy—essential for anyone aspiring to take on leadership roles in their future career, may it be in the private or public sector. The module goes beyond basic knowledge about strategic management provided by bachelor-level modules.

(1) Developing strategies in pursuit of competitive advantage

(2) Corporate diversification

(3) Vertical integration and outsourcing

(4) Mergers & acquisitions

(5) Dynamic strategies

(6) Cooperative strategies

(7) Corporate spin-offs and spin-outs

(8) Internationalization strategies (I)

(9) Internationalization strategies (II)

(10) Strategic change

(11) Corporate strategies and new technologies

(12) Corporate governance and corporate social responsibility

(13) Corporate communication and crisis management

(14) Wrap-up and Q&A

Intended learning outcomes

Educational aims

- Clarify the role of corporate strategy
- Explain theoretical concepts and mechanisms behind corporate strategy
- Enable students to critically appraise alternative approaches to corporate strategy
- Enable students to evaluate the boundaries and risks of corporate strategy

Learning outcomes

On successful completion of this module students will be able to:

- Assess the role of corporate strategy for creating and sustaining competitive advantage
- Create and evaluate concepts related to corporate strategy
- Make judgements about the organizational and managerial implications of corporate strategy
- Systematically choose between different routes of action

Courses (type, number of weekly contact hours, language — if other than German)
V (2) + Ü (2) Module taught in: English
Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)
a) written examination (approx. 60 to 120 minutes) or b) term paper (15 to 20 pages) or c) oral examination of one candicate each (approx. 10 to 15 minutes) or oral examination in groups (groups of 2 approx. 20 minutes, groups of 3 approx. 30 minutes) Language of assessment: English
Allocation of places
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Additional information
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Workload
150 h
Teaching cycle
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Referred to in LPO I (examination regulations for teaching-degree programmes)
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Module appears in
Master's degree (1 major) Management (2018) Master's degree (1 major) International Economic Policy (2018) Master's degree (1 major) China Business and Economics (2019) Master's degree (1 major) China Language and Economy (2019) Master's degree (1 major) Information Systems (2019) Master's degree (1 major) China Business and Economics (2021) Master's degree (1 major) China Language and Economy (2021) Master's degree (1 major) Economathematics (2021) Master's degree (1 major) Information Systems (2022) Master's degree (1 major) International Economic Policy (2022) Master's degree (1 major) Management (2022) Master's degree (1 major) Economathematics (2022) exchange program Business Management and Economics (2022) Master's degree (1 major) Management International (2024) Master's degree (1 major) Management (2024) Master's degree (1 major) Information Systems (2024) Master's degree (1 major) International Economic Policy (2024) Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Digital Entrepreneurship and Digital Transformation			12-M-UGF3-242-m01
Module coordinator		**Module offered by**	
Holder of the Chair of Entrepreneurship and Strategy		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

This module provides an introduction into digital entrepreneurship and digital transformation. (1) Introduction (2) Digital business models (3) Identifying and exploiting opportunities for digital entrepreneurship (4) Strategies for creating competitive advantage in digital entrepreneurship (5) Digital marketing for entrepreneurs (6) Crowdfunding for entrepreneurs (7) Design thinking (8) Lean startup (9) Platform ecosystems and online communities (10) Digital strategy and digital transformation (11) The agile organization (12) Crowdsourcing (13) Cyberfraud (14) Wrap-up and Q&A

Intended learning outcomes

Educational aims: Clarify the role of digital entrepreneurship and digital transformation. Explain theoretical concepts and mechanisms behind digital entrepreneurship and digital transformation. Enable students to critically appraise alternative approaches to digital entrepreneurship and digital transformation. Enable students to evaluate the boundaries and risks of digital entrepreneurship and digital transformation
Learning outcomes: On successful completion of this module students will be able to (1) Assess the role of digital entrepreneurship and digital transformation for creating and sustaining competitive advantage, (2) Create and evaluate concepts related to digital entrepreneurship and digital transformation, (3) Make judgements about the organizational and managerial implications of digital entrepreneurship and digital transformation, (4) Systematically choose between different routes of action.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

a) written examination (approx. 60 to 120 minutes) or
b) term paper (15 to 20 pages) or
c) oral examination (one candidate each: approx. 10 to 15 minutes; groups of 2: approx. 20 minutes; groups of 3: approx. 30 minutes)
Language of assessment: English

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management International (2024)
Master's degree (1 major) Management (2024)

Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Project Modul: Journalism in Economic Policy			12-M-WPJ-242-m01
Module coordinator		**Module offered by**	
Holder of the Professorship of Economic Journalism		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Economic journalism is often regarded as unwieldy, but the reporting usually revolves around content that many media users can relate to: The focus is on market developments and (economic) political conditions. How can these topics be presented in a way that is clear, easy to understand, and yet as precise as possible? What makes for good economic reporting? What research options and forms of presentation are available? Such questions will first be answered using examples from various media. Subsequently, the students will work on the main topic themselves. The seminar is thematically oriented towards current research projects/projects of the Chair of Business Journalism and Business Communication and can therefore vary thematically per semester.

Intended learning outcomes

Students learn the terminology, topics, and framework of economic journalism. After completing the seminar, they will have an overview of selected areas of application. They master the research and the different forms of presentation of economic journalism. The students learn scientific methods to break down complex economic topics in reporting. After completing the seminar, students are able to independently examine journalistic products in response to previously generated research questions and thus evaluate journalistic work. Therefore, students acquire subject as well as specific methodological competencies in this seminar.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

portfolio (e. g. record of research activities, commentary, text analyses of different types of media); (approx. 3 items with a duration of 3 minutes each, audio/video format or text format)
Assessment offered: In the semester in which the course is offered
Language of assessment: German and/or English
creditable for bonus

Allocation of places

10 places.
WA1:
(1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in
Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Economic and Business Ethics			12-M-WUE-242-m01
Module coordinator		**Module offered by**	
Holder of the Chair of Financial Accounting		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
10	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

In this seminar, students will gain an overview of different ethical aspects in business and economy, e. g. leadership ethics, corruption, ethcial theories, consumer ethics, CSR.

Intended learning outcomes

Using common scientific methods the student should be able to write a seminar paper dealing with a selected ethcial problem in business and/or economiy. He/she should be able to present a complex problem in an clear and understandable way und he/she should discuss the arguments with other participants in the class.

Courses (type, number of weekly contact hours, language — if other than German)

S (2)
Module taught in: German and/or English

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

term paper (20 to 25 pages) and presentation (approx. 20 minutes), weighted 2:1
Language of assessment: German and/or English

Allocation of places

10 places.
WA1:
(1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

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Workload

300 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Management (2024)
Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) International Economic Policy (2024)
Master's degree (1 major) Economathematics (2024)

Module title			Abbreviation
Master Thesis Information Systems			12-WI-MA-192-m01
Module coordinator		**Module offered by**	
Dean of the Faculty of Business Management and Economics		Faculty of Business Management and Economics	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
30	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	graduate	--	

Contents

Students will complete their degree with a Master's thesis in which they will be required to independently research and write on a topic in the area of business management and economics, drawing on the subject-specific knowledge they have acquired and adhering to the principles of good scientific practice. This thesis may either take the form of an analysis and structured presentation of the existing literature on a certain topic or may, as is often the case, also include a presentation of the students' own original achievements, e. g. new algorithms developed by students, surveys, the prototypical demonstration of a concept they developed or the application and (further) development of a theoretical model.

Intended learning outcomes

In the master thesis students prove that they can plan and carry out a science-based work to solve a particular problem within a specified period autonomously and to document the results in accordance with the professional scientific standards in writing. Students are able to understand relevant contributions to research and professional practice, critically analyze and assess the relevance to their own specific questions. They can assess and recognize major lines of development and dynamics of the subject and therefore also the need to retrain continuously.

Courses (type, number of weekly contact hours, language — if other than German)

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Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)

Master's thesis (approx. 60 to 80 pages)
Language of assessment: German and/or English

Allocation of places

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Additional information

Time to complete: 6 months

Workload

900 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Master's degree (1 major) Information Systems (2019)
Master's degree (1 major) Information Systems (2022)
Master's degree (1 major) Information Systems (2024)