

Module Descriptions

of the Master of Science in Information Systems
of the University of Münster
valid from wintersemester 2019/20

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Overview: Course structure

	Track		Winter semester (WT)		Summer semester (ST)	
Method Tracks	IM	Information Management	IM1: MIAO Managing the Information Age Organization	IM2: IMTTIM Tasks and Techniques	IM3: IMTh IM Theories	
	PM	Process Management	PM1: InfMod Information Modeling		PM2: EAM Enterprise Architecture Management	PM3: WfM Workflow Management
	BN	Business Networks	BN1: IOS Interorganizational Systems		BN2: ITSec Information Security	BN3: NetEcon Network Economics
	BI	Business Intelligence	BI1: MISDWH Management Information Systems and Data Warehousing	BI2: DA1 Data Analytics 1	BI3: DA2 Data Analytics 2	
	ISD	Information Systems Development	ISD1: LSLPP Logic Specification and Logic Programming	ISD2: DInt Data Integration	ISD3: ACSE Advanced Concepts in Software Engineering	
Domain Tracks	LPR	Logistics, Production and Retail	LPR1: SCM Supply Chain Management and Logistics	LPR2: PPC Production Planning and Control	LPR3: Ret Retail	
	MCM	Marketing	MCM05: Innovation Management	MCM07 Customer Relationship Management and Direct Marketing	MCM09: Channel Management	
Every Term	EM: Seven Elective Modules (6CP), consisting of: at least two seminars, at most five L/E-modules, taken from modules not chosen above or from Master Studies in Computer Science or in Business Administration or from Selected Chaptes in IS (if offered) PS: Project Seminar (12 CP) MT: Master's Thesis module (30 CP)					

Information Management: Managing the Information Age Organization

Module Title english:		Information Management: Managing the Information Age Organization			
Course Program:		Master Information Systems			
1	Module No: IM1	State: Elective	Language of Instruction: English		
2	Turn: each winter semester	Duration: 1 semester	Semester: 1 or 2	CP: 6	Workload (h): 180
3	Module Structure:				
	No	Type	Course	State	Workload (h)
					Presence (h + CH)
					Self-Study (h)
	1	Lecture	Managing the Information Age Organization	Compulsory	30 h (2 CH)
	2	Exercise	Tutorial on Managing the Information Age Organization	Compulsory	30 h (2 CH)
4	Module Profile:				
	<p>Purpose of the module/integration into curriculum: The lecture Managing the Information Age Organization assumes that students have a basic understanding of Business Administration, Management Studies, and business applications of information technology as conveyed in Bachelor Programs in IS and related fields.</p> <p>Course content: The lecture provides students with a sound understanding of management and management theories as well as with the foundations of the information society. On the basis of this understanding, students are confronted with management challenges prevalent in the information age. While doing this, special emphasis is laid on how information technology affects the capabilities of an organization to compete in the information economy. Teaching is conducted through traditional lectures complemented with case study work and discussions in the classroom. Additional reading material is provided in order to allow students to review parts of the content at their leisure and to extend their knowledge in areas of personal interest.</p>				
5	Learning outcomes:				
	<p>Academic: After attending the course students should be familiar with the foundations of management, i.e. (strategic) planning, controlling, organization, and leadership. They should understand the specific conditions organizations are exposed to in the “Information Age” and be able to explain the technological, social and economic phenomena constituting it. Furthermore, they are expected to have an idea of how the information age challenges traditional management concepts and what appropriate responses to these challenges might look like.</p>				

	Soft skills: The course introduces students to the analysis of case studies in small groups and furthers their ability to actively participate in classroom discussions.			
6	Description of possible electives within the modules: The module can be taken as part of the track Information Management or as an elective. Within the electives a minimum of 2 seminars has to be taken.			
7	Examination: Final Module Exam			
8	Relevant Work:			
	No	Number and Type; Connection to Course	Duration	Part of final mark in %
	1	Final written exam	up to 120 min.	100 %
9	Study Work: none			
10	Prerequisites for Credit Points: The credit points will be granted after all relevant work and study work have been successfully completed.			
11	CP Assignment:			
	Presence (see No 3)	No 1	1.00 CP	
		No 2	1.00 CP	
	Relevant Work (see No 8)	No 1	4.00 CP	
Total		6 CP		
12	Weight of the module grade for the overall grade: 6/120 (5%)			
13	Module Prerequisites: none			
14	Presence: Presence is strongly recommended to warrant learning success			
15	Mobility/Acknowledgement:			
	Use of the module for other course programs	Master Business Administration		
16	Responsible Lecturer: Prof. Dr. Stefan Klein, Dr. Stefan Schellhammer		Department: School of Business and Economics	
	17 Misc.:			

Information Management: Tasks and Techniques

Module Title english:		Information Management: Tasks and Techniques			
Course Program:		Master Information Systems			
1	Module No: IM2	State: Elective	Language of Instruction: English		
2	Turn: each winter semester	Duration: 1 semester	Semester: 1 or 2	CP: 6	Workload (h): 180
3	Module Structure:				
	No	Type	Course	State	Workload (h)
					Presence (h + CH) Self-Study (h)
	1	Lecture	Tasks and Techniques	Compulsory	30 h (2 CH) 90
	2	Exercise	Exercise on Tasks and Techniques	Compulsory	30 h (2 CH) 30
4	Module Profile:				
	<p>Purpose of the module/integration into curriculum: The course requires a sound understanding of both management studies and information processing in business. This course interlinks with the course “Managing the Information Age Organization”, which deepens the students’ understanding of management basics that this course builds upon. In order to provide students from a non IS-background with the managerial understanding of information processing necessary for participating successfully in this course, an extensive script on this subject is provided at the beginning of the semester.</p> <p>Course content: The lecture provides students with an overview of executives’ duties in managing an organization’s information and communication capabilities. These duties include tasks such as strategic information planning, strategy implementation, as well as sourcing and organizing the information function. These tasks are structured in a comprehensive framework based on management theory. While identifying critical IM tasks and responsibilities, the course presents methods and techniques that can be applied to deal with them. Class discussions on case studies give students the opportunity to consolidate their newly acquired knowledge and apply the techniques presented to typical problems. In addition, occasional discussions with IT executives allow students to reflect their conceptual knowledge in light of real world practices.</p>				
5	Learning outcomes:				
	<p>Academic: The course provides students with skills indispensable for an IT executive. In particular, students will obtain a comprehensive overview of the field of IT management and get acquainted with the typical tasks IT managers are charged with. They will also get to know prominent frameworks and techniques to solve IM tasks as proposed in textbooks.</p> <p>Soft skills: In addition to expertise in the fields mentioned above, students will deepen their skills in</p>				

	constructively analyzing and solving case studies in both classroom settings and as part of individual assignments.		
6	Description of possible electives within the modules: The module can be taken as part of the track Information Management or as an elective. Within the electives a minimum of 2 seminars has to be taken.		
7	Examination: Final Module Exam		
8	Relevant Work:		
	No	Number and Type; Connection to Course	Duration
	1	Final written exam	up to 120 min. 100 %
9	Study Work:		Duration
	No	Number and Type; Connection to Course	
	1	Answering case-study questions	10 pages
10	Prerequisites for Credit Points: The credit points will be granted after all relevant work and study work have been successfully completed.		
11	CP Assignment:		
	Presence (see No 3)	No 1	1.00 CP
		No 2	1.00 CP
	Relevant Work (see No 8)	No 1	3.00 CP
	Study Work (see No 9)	No 1	1.00 CP
	Total		6 CP
12	Weight of the module grade for the overall grade: 6/120 (5%)		
13	Module Prerequisites: none		
14	Presence: Presence is strongly recommended to warrant learning success		
15	Mobility/Acknowledgement:		
	Use of the module for other course programs	Master Business Administration	
16	Responsible Lecturer: Prof. Dr. Stefan Klein, Dr. Alexander Teubner		Department: School of Business and Economics

17	Misc.:
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Information Management: Theories

Module Title english:		Information Management: Theories			
Course Program:		Master Information Systems			
1	Module No: IM3	State: Elective	Language of Instruction: English		
2	Turn: each summer semester	Duration: 1 semester	Semester: 1 or 2	CP: 6	Workload (h): 180
3	Module Structure:				
	No	Type	Course	State	Workload (h)
					Presence (h + CH)
					Self-Study (h)
	1	Lecture	Theories	Compulsory	30 h (2 CH) 60
	2	Exercise	Exercise on Theories	Compulsory	30 h (2 CH) 60
4	Module Profile:				
	<p>Purpose of the module/integration into curriculum: A sound understanding of management and information management as provided in the courses “Managing the Information Age Organization” and “Information Management Tasks & Techniques”.</p> <p>Course content: This course deepens the students’ understanding of IM tasks and techniques in that it enables them to assess underlying theoretical propositions in more detail. To this end, the lecture introduces important management theories, including market, resource and capability based theories of strategic information systems, IT strategy theory, IT value and productivity theory, organization theory of IT and theories of sourcing and governing the information function. Moreover, on the basis of this theoretical knowledge, critical issues of IM are discussed in the light of the controversial academic discussions surrounding them. The course builds on well-prepared class discussions rather than traditional lectures. The lecturer will support learning by carefully selecting papers and placing them into a broader “theoretical landscape”. He will moderate and facilitate the discussions, and provide feedback on the assignments during the semester (reading papers, preparing presentations, writing minutes).</p>				
5	Learning outcomes:				
	<p>Academic: After the completion of this course, students will a) have access to the academic debate on IM, specifically, the international academic debate on the most important or discussed issues of information management. The students will b) discern theories underlying the frameworks and techniques proposed for solving IM tasks, including market, resource and capability based theories of strategic information systems, IT strategy theory, IT value productivity theory, organization theory of IT and theories of sourcing and governing the information function. They will be able to c) will develop a repertoire of theoretical approaches and be able to apply them to issues of information management and d) will understand the contributions of important</p>				

	<p>management theories to the IS field and will be able to assess these tools and the underlying theories critically.</p> <p>Soft skills: In addition to providing students with the capabilities to deal with academic literature reflectively, the course trains them in presenting their take on selected academic papers to the class and furthers their general ability to take an active part in academic discussions. This ability is based on a combination of reading, thinking, writing, discussing and listening skills. Students will practice their collaboration skills and develop techniques for efficient collaboration</p>														
6	<p>Description of possible electives within the modules: The module can be taken as part of the track Information Management or as an elective. Within the electives a minimum of 2 seminars has to be taken.</p>														
7	<p>Examination: Examinations for every part of the module</p>														
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15	Mobility/Acknowledgement:	
	Use of the module for other course programs	Master Business Administration
16	Responsible Lecturer: Prof. Dr. Stefan Klein, Dr. Alexander Teubner	Department: School of Business and Economics
17	Misc.:	

Process Management: Information Modeling

Module Title english:		Process Management: Information Modeling			
Course Program:		Master Information Systems			
1	Module No: PM1	State: Elective	Language of Instruction: English		
2	Turn: each winter semester	Duration: 1 semester	Semester: 1 or 2	CP: 6	Workload (h): 180
3	Module Structure:				
	No	Type	Course	State	Workload (h)
					Presence (h + CH) Self-Study (h)
	1	Lecture	Information Modeling	Compulsory	30 h (2 CH) 60
2	Exercise	Exercise on Information Modeling	Compulsory	30 h (2 CH) 60	
4	Module Profile:				
	Purpose of the module/integration into curriculum:				
	The lecture is on one of the core topic areas in Information Systems and Business Process Management: Conceptual Modeling (i.e., process modeling, data modeling, organizational modeling etc.) with a focus on the use and reuse of conceptual models in business. Hence, the focus is not on how to create a conceptual model, but on what are the preconditions of models to really be usable in practice and on approaches and methodologies supporting model use and reuse, especially model analysis. The lecture therefore provides a theoretical basis for courses applying modeling techniques, such as PM2, PM3, BI1, ISD1, ISD2, ISD3, PR1, PR2, and PR3.				
	Course content:				
	Themes	Learning objectives			
Meta modeling / meta meta modeling / meta modeling tools	To be able to design modeling languages with meta models, and to be able to design modeling tools and meta modeling tools with meta model and meta model-based databases.				
Model variant management	To be able to apply selected approaches on model variant management onto models of different modeling languages.				
Terminological standardization	To know why terminological standardization is a precondition for actually using conceptual models for business purposes, and to apply selected methodologies for terminological standardization.				
Model analysis	To know different areas of model analysis, for instance process improvement, process compliance, model transformation, model comparison, model integration, and to be able to apply selected				

		approaches on model analysis. The focus is on pattern-based model querying.										
	Process mining	To be able to explain the purpose and the basics of process mining and to apply selected process mining approaches.										
	Model merge	To understand how selected approaches for model merge work and be able to apply them to conceptual models.										
	Comparable conceptual models	To understand the necessity why modelers should pay attention to creating comparable models and to be able to explain selected methods for achieving comparability and apply them.										
5	<p>Learning outcomes:</p> <p>Academic: Impart a broad and profound understanding of the main tasks and challenges of conceptual modeling in Business Process Management. Facilitate understanding of different modeling and model analysis approaches and judge their appropriateness for specific contexts of application.</p> <p>Soft skills: The ability to organize small working groups independently and to give presentations in front of a large audience.</p>											
6	<p>Description of possible electives within the modules: The module can be taken as part of the track Process Management or as an elective. Within the electives a minimum of 2 seminars has to be taken.</p>											
7	Examination: Examinations for every part of the module											
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	Study Work (see No 9)	No 1	1.00 CP
	Total		6 CP
12	Weight of the module grade for the overall grade: 6/120 (5%)		
13	Module Prerequisites: Understand basics of conceptual modeling, that is, process modeling and data modeling.		
14	Presence: Presence is strongly recommended to warrant learning success		
15	Mobility/Acknowledgement:		
	Use of the module for other course programs	Master Business Administration	
16	Responsible Lecturer: Prof. Dr. Dr. h.c. Dr. h.c. Jörg Becker	Department: School of Business and Economics	
17	Misc.: Besides conceptual work, the course includes work with selected Business Process Management tools related to conceptual modeling: Process modeling tools, process analysis tools, and process mining tools.		

Process Management: Enterprise Architecture Management

Module Title english:		Process Management: Enterprise Architecture Management			
Course Program:		Master Information Systems			
1	Module No: PM2	State: Elective	Language of Instruction: English		
2	Turn: each summer semester	Duration: 1 semester	Semester: 1 or 2	CP: 6	Workload (h): 180
3	Module Structure:				
	No	Type	Course	State	Workload (h)
					Presence (h + CH) Self-Study (h)
	1	Lecture	Enterprise Architecture Management	Compulsory	30 h (2 CH) 60
2	Exercise	Exercise on Enterprise Architecture Management	Compulsory	30 h (2 CH) 60	
4	Module Profile:				
	<p>Purpose of the module/integration into curriculum: This course stresses the aspect of IM as an engineering discipline, in contrast to being a management discipline only. The fundamental idea is to describe organizations as a whole, consisting of goals and strategies, business models, processes, people and information technology. Enterprise Architecture Management propagates a holistic approach that primarily aims at aligning the spheres of business and IT within one or across several companies and at facilitating and governing transformation processes. The Information Manager thereby has the role of an architect of the corporate information infrastructure. The Module “Managing IT in the Information Age” introduces students to the tasks and tools in Information Management thus setting the scene for this Module.</p> <p>Course content: This course provides insights into the concepts and methods of Enterprise Architecture Management. The need for architectures in complex organizations as an instrument for transformation is motivated by the challenges enterprises face in today’s business. Architectures support the effective planning and governance of enterprises as a whole consisting of business and IT. Consistently implemented, they facilitate the understanding of business entities’ interrelationships, set them in relation to strategic goals and help define the desired to-be state and the roadmap for its realization. For this purpose, concepts, methods, models and tools are discussed and enriched with insights from practice. The introduction of a specialized modeling language introduces the students to the creation of architectural artifacts. The concrete architecture realization process is underlined by the study of architecture frameworks currently discussed in research and practice.</p>				
	Themes	Learning objectives			

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Current developments in Enterprise Architecture Management	To learn current developments and trends in Enterprise Architecture Management in academia and practice.												
5	<p>Learning outcomes:</p> <p>Academic: The students' ability to develop and manage Enterprise Architectures is the course's major goal. An understanding of current developments and frameworks in the domain of architecture implementation should be obtained. Students are equipped with methods for planning, creating and governing such architectures. Furthermore, practical skills in architecture development will be conveyed with work on case studies and presentation of the results.</p> <p>Soft skills: Students are encouraged to prepare the Profile of the lecture and exercises and to perform follow-up work in teams. This is supported by a Learnweb discussion forum that is guided by the chair. The case study is organized as group work and thus promotes the students' ability to cooperate in teams and to manage their time efficiently. The intermediary results are presented regularly by the groups in front of the complete audience. This enhances the students' presentation and discussion skills. The creation of architectural models by using a syntactically and semantically defined modeling language sharpens analytical and logic skills.</p>												
6	<p>Description of possible electives within the modules: The module can be taken as part of the track Process Management or as an elective. Within the electives a minimum of 2 seminars has to be taken.</p>												
7	<p>Examination: Examinations for every part of the module</p>												
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No	Number and Type; Connection to Course	Duration	Part of final mark in %										
1	Written Exam	120 min.	60 %										

	2	Case Study with EAM-Software, Presentation	ca. 40 pages, ca. 40 min. presentation	40 %
9	Study Work: none			
10	Prerequisites for Credit Points: The credit points will be granted after all relevant work and study work have been successfully completed.			
11	CP Assignment:			
	Presence (see No 3)	No 1	1.00 CP	
		No 2	1.00 CP	
	Relevant Work (see No 8)	No 1	2.50 CP	
		No 2	1.50 CP	
Total			6 CP	
12	Weight of the module grade for the overall grade: 6/120 (5%)			
13	Module Prerequisites: none			
14	Presence: Presence is strongly recommended to warrant learning success			
15	Mobility/Acknowledgement:			
	Use of the module for other course programs	Master Business Administration		
16	Responsible Lecturer: Prof. Dr.-Ing. Bernd Hellingrath		Department: School of Business and Economics	
	17 Misc.:			

Process Management: Workflow Management

Module Title english:		Process Management: Workflow Management			
Course Program:		Master Information Systems			
1	Module No: PM3	State: Elective	Language of Instruction: English		
2	Turn: each summer semester	Duration: 1 semester	Semester: 1 or 2	CP: 6	Workload (h): 180
3	Module Structure:				
	No	Type	Course	State	Workload (h)
					Presence (h + CH) Self-Study (h)
	1	Lecture	Workflow Management	Compulsory	30 h (2 CH) 30
2	Exercise	Exercise on Workflow Management	Compulsory	30 h (2 CH) 90	
4	Module Profile:				
	Purpose of the module/integration into curriculum:				
	The module provides insights into Workflow Management, which is the interface between the conceptual requirements towards process automation of companies, and the translation and implementation on the side of the company's Information Technology department. The module "Information Modelling" serves as a conceptual foundation. It is beneficial to have attended to it first. The module "Enterprise Architecture Management" provides a more exhaustive view on the integration of several application systems into a company's IT infrastructure, of which Workflow Management Systems are part of.				
	Course content:				
The module delivers basic and advanced concepts of Workflow Management (WfM), and information about the most widely used reference for WfM. It covers the whole spectrum of the Process Life-Cycle, starting from Environmental Analysis, to Process Design, Implementation, Enactment, and Evaluation. Furthermore, the module entails an exhaustive Case study, in which the students have to build a WfM System, connecting two fictional companies.					
Themes		Learning objectives			
(1) Basics of Workflow Management		To be able to provide an overview of the entire Process Life-Cycle, the methods applied, and to explain its relevance in the context of Enterprise Architecture Management.			
(2) Conceptual workflow definition		To be able to create conceptually consistent and implementable workflow models.			
(3) Technical workflow implementation		To be able to understand and create workflow implementations, and to explain the relations between (2) and (3).			

	(4) Workflow Management Systems	To be able to actually implement workflows with Workflow Management Systems used in practice.		
5	<p>Learning outcomes:</p> <p>Academic: The ability to manage business process redesign projects in organizations, an understanding of the challenges faced in the course of such a project, and techniques to cope with them.</p> <p>Soft skills: The ability to organize small working groups independently and to give presentations in front of a large audience.</p>			
6	<p>Description of possible electives within the modules: The module can be taken as part of the track Process Management or as an elective. Within the electives a minimum of 2 seminars has to be taken.</p>			
7	<p>Examination: Examinations for every part of the module</p>			
8	Relevant Work:			
	No	Number and Type; Connection to Course	Duration	Part of final mark in %
	1	Written Exam	120 min.	50 %
2	Presentation	max. of 30 min.	50 %	
9	Study Work:			
	No	Number and Type; Connection to Course	Duration	
1	Case study with group presentation (divided into max. 4 subpresentations)		max. 80 minutes	
10	<p>Prerequisites for Credit Points: The credit points will be granted after all relevant work and study work have been successfully completed.</p>			
11	CP Assignment:			
	Presence (see No 3)	No 1	1.00 CP	
		No 2	1.00 CP	
	Relevant Work (see No 8)	No 1	1.50 CP	
		No 2	1.50 CP	
	Study Work (see No 9)	No 1	1.00 CP	
Total		6 CP		
12	<p>Weight of the module grade for the overall grade: 6/120 (5%)</p>			

13	Module Prerequisites: none			
14	Presence: Presence is strongly recommended to warrant learning success			
15	Mobility/Acknowledgement: <hr/> <table border="1" data-bbox="209 472 1453 533"> <tr> <td data-bbox="209 472 826 533">Use of the module for other course programs</td> <td data-bbox="826 472 1453 533">Master Business Administration</td> </tr> </table>		Use of the module for other course programs	Master Business Administration
Use of the module for other course programs	Master Business Administration			
16	Responsible Lecturer: Dr. Armin Stein	Department: School of Business and Economics		
17	Misc.:			

Business Networks: Interorganizational Systems

Module Title english:		Business Networks: Interorganizational Systems			
Course Program:		Master Information Systems			
1	Module No: BN1	State: Elective	Language of Instruction: English		
2	Turn: each winter semester	Duration: 1 semester	Semester: 1 or 2	CP: 6	Workload (h): 180
3	Module Structure:				
	No	Type	Course	State	Workload (h)
					Presence (h + CH) Self-Study (h)
	1	Lecture	Interorganizational Systems	Compulsory	30 h (2 CH) 45
2	Exercise	Exercise on Interorganizational Systems	Compulsory	30 h (2 CH) 75	
4	Module Profile:				
	<p>Course content: Networks have become ubiquitous forms of organizing in and between economy, public administration and society at large. On the backdrop of this development, this module introduces interorganizational systems and networks in a business context, yet with linkages to public administration (e.g. customs) and social networks. It aims to explore the contingencies and strategies that lie behind the evolution and use of interorganizational information infrastructures and applications (IOS). Further, students will examine the impact of IOS on distributed forms of value generation such as electronic markets and various types of networks. Drawing on case examples as well as theoretical concepts, a life cycle perspective of IOS management will be introduced. The implications of IOS will be discussed from various perspectives such as industry transformation, intermediation, strategic management, organization, information management, IS development and standardization. This discussion will be informed by theories addressing networking issues such as institutional economics, collective action or organization theory.</p>				
	Themes	Learning objectives			
	Transaction cost economics, strategic lenses on networks, organizational and governance issues, managing (in) a collaborative environment, standardization, ecosystems and infrastructures,	The students will acquire a repertoire of theories and concepts to study corporate networks and learn how to apply them to selected cases of networks in order to explain their design and evolution. They will understand contingencies of network design and key dimensions of network management. This enables them to contribute to theoretical and empirical research as well as to create and shape practical			

	socio-technical systems based on well-founded principles.														
5	<p>Learning outcomes: Academic: Upon completion of this course, students will a) be able to distinguish different approaches to govern economic activities and different types of interorganizational network arrangements. b) They will be able to discuss the suitability of networks for different economic tasks and environments. c) They will comprehend dilemmas involved in the development of standards. d) They will be able to reflect on approaches for managing in a dynamic, networked environment, including the facilitation of collaboration and ambidexterity. e) The participants will develop a repertoire of theoretical approaches and be able to apply them to explain cases of IOS and interorganizational infrastructures across various industries.</p> <p>Soft skills: a) In addition to providing students with the capabilities to deal with academic concepts and literature reflectively, the course helps to further the students' ability to take an active part in discussions. This ability is based on a combination of reading, thinking, writing, discussing and listening skills. b) Moreover, students will develop skills in applying these techniques to practical problems. c) Course assignments will be organized as group work, so that students can practice their collaboration skills and learn techniques for efficient collaboration.</p>														
6	<p>Description of possible electives within the modules: The module can be taken as part of the track Business Networks or as an elective. Within the electives a minimum of 2 seminars has to be taken.</p>														
7	<p>Examination: Examinations for every part of the module</p>														
8	<p>Relevant Work:</p> <table border="1"> <thead> <tr> <th>No</th> <th>Number and Type; Connection to Course</th> <th>Duration</th> <th>Part of final mark in %</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Written Exam</td> <td>120 min.</td> <td>50 %</td> </tr> <tr> <td>2</td> <td>In groups of 3 - 5 students: Reflection on readings by presentation, written report and comments on reading</td> <td>Ca. 15 min., ca 5 pages, ca 6 pages</td> <td>50 %</td> </tr> </tbody> </table>			No	Number and Type; Connection to Course	Duration	Part of final mark in %	1	Written Exam	120 min.	50 %	2	In groups of 3 - 5 students: Reflection on readings by presentation, written report and comments on reading	Ca. 15 min., ca 5 pages, ca 6 pages	50 %
No	Number and Type; Connection to Course	Duration	Part of final mark in %												
1	Written Exam	120 min.	50 %												
2	In groups of 3 - 5 students: Reflection on readings by presentation, written report and comments on reading	Ca. 15 min., ca 5 pages, ca 6 pages	50 %												
9	<p>Study Work: none</p>														
10	<p>Prerequisites for Credit Points: The credit points will be granted after all relevant work and study work have been successfully completed.</p>														
11	<p>CP Assignment:</p> <table border="1"> <tr> <td>Presence (see No 3)</td> <td>No 1</td> <td>1.00 CP</td> </tr> </table>			Presence (see No 3)	No 1	1.00 CP									
Presence (see No 3)	No 1	1.00 CP													

		No 2	1.00 CP
	Relevant Work (see No 8)	No 1	2.00 CP
		No 2	2.00 CP
	Total		6 CP
12	Weight of the module grade for the overall grade: 6/120 (5%)		
13	Module Prerequisites: none		
14	Presence: Presence is strongly recommended to warrant learning success		
15	Mobility/Acknowledgement:		
	Use of the module for other course programs	Master Business Administration	
16	Responsible Lecturer: Prof. Dr. Stefan Klein	Department: School of Business and Economics	
17	Misc.:		

Business Networks: Information Security

Module Title english:		Business Networks: Information Security			
Course Program:		Master Information Systems			
1	Module No: BN2	State: Elective	Language of Instruction: English		
2	Turn: each summer semester	Duration: 1 semester	Semester: 1 or 2	CP: 6	Workload (h): 180
3	Module Structure:				
	No	Type	Course	State	Workload (h)
					Presence (h + CH) Self-Study (h)
	1	Lecture	Information Security	Compulsory	30 h (2 CH) 60
2	Exercise	Exercise on Information Security	Compulsory	30 h (2 CH) 60	
4	Module Profile:				
	Course content:				
	This lecture covers the foundations of IT security including the specification of protection goals, adversary models and security mechanisms. Starting with threats to IT infrastructure, authentication principles as well as permission systems are introduced. Cryptography and security protocols give a perspective of IT security design and a short block on modern Web security enriches the lecture with practical knowledge.				
	Themes		Learning objectives		
	Threats to IT infrastructure		This field will give an overview of the IT security landscape and introduce relevant attacks and incidents.		
	Authentication & access control		In this block, mechanisms for user authentication and permission enforcement are introduced.		
Cryptography		The cryptography block covers foundations of modern encryption methods.			
Protocol analysis		In this part of the lecture, the security analysis of network protocols is introduced, covering i.a. replay attacks.			
Web security		The last block of this lecture shows practical attacks and defenses regarding modern Web applications.			
5	Learning outcomes:				
	Academic:				
	a) identify security issues b) keep aware of changing technological limits c) evaluate security advises critically and comprehensively d) oversee the implementation of security measures				

	Soft skills: a) communicate effectively with security experts b) assume responsibility for their effects and potential sideeffects			
6	Description of possible electives within the modules: The module can be taken as part of the track Business Networks or as an elective. Within the electives a minimum of 2 seminars has to be taken.			
7	Examination: Examinations for every part of the module			
8	Relevant Work:			
	No	Number and Type; Connection to Course	Duration	Part of final mark in %
	1	Oral examination	Ca. 20 min.	80 %
2	One written exercise	Ca. 10 pages	20 %	
9	Study Work: none			
10	Prerequisites for Credit Points: The credit points will be granted after all relevant work and study work have been successfully completed.			
11	CP Assignment:			
	Presence (see No 3)	No 1	1.00 CP	
		No 2	1.00 CP	
	Relevant Work (see No 8)	No 1	3.00 CP	
		No 2	1.00 CP	
Total		6 CP		
12	Weight of the module grade for the overall grade: 6/120 (5%)			
13	Module Prerequisites: none			
14	Presence: Presence is strongly recommended to warrant learning success			
15	Mobility/Acknowledgement:			
	Use of the module for other course programs	Master Business Administration		
16	Responsible Lecturer: Prof. Dr.-Ing. Thomas Hupperich		Department: School of Business and Economics	

17	Misc.:
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Business Networks: Network Economics

Module Title english:		Business Networks: Network Economics			
Course Program:		Master Information Systems			
1	Module No: BN3	State: Elective	Language of Instruction: English		
2	Turn: each summer semester	Duration: 1 semester	Semester: 1 or 2	CP: 6	Workload (h): 180
3	Module Structure:				
	No	Type	Course	State	Workload (h)
					Presence (h + CH) Self-Study (h)
	1	Lecture	Network Economics	Compulsory	30 h (2 CH) 60
2	Exercise	Exercise on Network Economics	Compulsory	30 h (2 CH) 60	
4	Module Profile:				
	<p>Purpose of the module/integration into curriculum: There is intentional overlap with the module BN Interorganizational Systems, which complements this course by taking a qualitative-holistic approach to questions in the scope of network economics.</p> <p>Course content: This course provides an introduction to network economics. It teaches methodological and formal economics skills tailored to students of Information Systems. Emphasis is put on simple models lending themselves to rigorous solutions. Participants immerse in the notion that networks form the social and economic fabric of an information society, and grasp the emergent properties of technical design choices. They learn by examining many practical examples to appreciate the power of networks as well as ways to control it. Successful graduates are equipped with essential skills that qualify them for assuming responsibility in strategy teams of network industries (including start-ups), policy-making bodies, or research institutions.</p>				
	Themes	Learning objectives			
	History and foundations of network economics, agents, incentives, externalities, network structures, topologies, and dynamics, primers on game and graph theory, patterns and strategies of behaviour in networks (games, random graphs, degree distributions; non-cooperative network games, congestion, risk propagation; network formation, dynamics, standards,	<p>a) Students learn to “think in networks”. They get a deep understanding of the role of network topology as a distinctive factor that defines the properties of complex social and technical systems. They get used to the ideas of emergence, feedback loops and equilibria.</p> <p>b) They will develop a repertoire of models to describe as well as analytical tools to analyze and explain phenomena arising in networks.</p>			

	adoption; network management and regulation, pricing, strategic partnerships, competition); analysis tools, as well as practical examples	c) They can apply their knowledge to study new real-world problems with the lens of network economics and develop appropriate research designs. d) Awareness of the limitations of formal models, taught by examples of failure, prevents blind reliance and encourages responsible action.												
5	<p>Learning outcomes:</p> <p>Academic:</p> <p>a) They dispose of models to describe as well as analytical tools to analyze and explain phenomena arising in networks</p> <p>b) Contribute to theoretical and empirical research</p> <p>c) Create and shape practical socio-technical systems based on well-founded principles.</p> <p>Soft skills:</p> <p>a) Students learn to “think in networks”. They get a deep understanding of the role of network topology as a distinctive factor that defines the properties of complex social and technical systems. They get used to the ideas of emergence, feedback loops and equilibria</p> <p>b) They can apply their knowledge in unprecedented ways to study new real-world problems with the lens of network economics</p> <p>c) Awareness of the limitations of formal models, taught by examples of failure, prevents blind reliance and encourages responsible action.</p>													
6	<p>Description of possible electives within the modules:</p> <p>The module can be taken as part of the track Business Networks or as an elective. Within the electives a minimum of 2 seminars has to be taken.</p>													
7	<p>Examination: Examinations for every part of the module</p>													
8	<p>Relevant Work:</p> <table border="1"> <thead> <tr> <th>No</th> <th>Number and Type; Connection to Course</th> <th>Duration</th> <th>Part of final mark in %</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Final Written Exam</td> <td>120 min.</td> <td>100 %</td> </tr> </tbody> </table>		No	Number and Type; Connection to Course	Duration	Part of final mark in %	1	Final Written Exam	120 min.	100 %				
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No	Number and Type; Connection to Course	Duration												
1	12 written comments on weekly reading	ca. 0,5 page per comment												
2	Group Presentation (ca 3-5 students)	Ca. 20 min.												
3	Written report	Ca. 5 pages												
10	<p>Prerequisites for Credit Points:</p> <p>The credit points will be granted after all relevant work and study work have been successfully completed.</p>													
11	<p>CP Assignment:</p>													

	Presence (see No 3)	No 1	1.00 CP
		No 2	1.00 CP
	Relevant Work (see No 8)	No 1	2.50 CP
	Study Work (see No 9)	No 1	0.50 CP
		No 2	0.50 CP
		No 3	0.50 CP
	Total		6 CP
12	Weight of the module grade for the overall grade: 6/120 (5%)		
13	Module Prerequisites: none		
14	Presence: Presence is strongly recommended to warrant learning success		
15	Mobility/Acknowledgement:		
	Use of the module for other course programs	Master Business Administration	
16	Responsible Lecturer: Prof. Dr. Stefan Klein	Department: School of Business and Economics	
17	Misc.:		

Business Intelligence: Management Information Systems and Data Warehousing

Module Title english:		Business Intelligence: Management Information Systems and Data Warehousing			
Course Program:		Master Information Systems			
1	Module No: BI1	State: Elective	Language of Instruction: English		
2	Turn: each winter semester	Duration: 1 semester	Semester: 1 or 2	CP: 6	Workload (h): 180
3	Module Structure:				
	No	Type	Course	State	Workload (h)
					Presence (h + CH) Self-Study (h)
	1	Lecture	Management Information Systems and Data Warehousing	Compulsory	30 h (2 CH) 60
2	Exercise	Exercises on Management Information Systems and Data Warehousing	Compulsory	30 h (2 CH) 60	
4	Module Profile:				
	<p>Purpose of the module/integration into curriculum: This module is embedded into the Business Intelligence track in a way that it complements the Data Analytics courses from a business and system perspective. In contrast to the other two modules in this track, Management Information Systems and Data Warehousing (MIS+DWH) does not focus on statistical methods. It can be seen as an extension to the Data Management course from the Bachelor degree, as the design of Data Warehouse systems is linked to understanding the modeling of databases and underlying analytical processes (e.g., OLAP). The Data Integration course is seen as a valuable supplement: while in MIS+DWH the focus is set on activities within the Data Warehouse, Data Integration is mostly concerned with getting the data from various sources into one system, which is the Data Warehouse in this case.</p> <p>Course content: Business Intelligence (BI) refers to a variety of methods and techniques for the analysis of business data such as Data Warehousing (DWH), Reporting, Online Analytical Processing (OLAP), and Data Mining. This module addresses the methodical design and implementation of Data Warehouse systems in support of management's decision making, particularly via appropriate use of multidimensional schema design, ETL, and OLAP techniques. All relevant concepts are demonstrated from both a theoretical and a practical perspective. In this course, traditional lectures are complemented by student presentations that provide additional content. In addition, exercises and case studies provide sample opportunities to perform the various development phases in (pseudo-) practical settings. The practical perspective is enriched by guest lectures from the field.</p>				

Themes	Learning objectives
Data Warehousing Fundamentals	To define architectures and use cases of Data Warehousing and Management Information Systems and to assess their roles for companies
OLAP Processing and Optimization	To compare differences between OLTP and OLAP; to contrast OLAP workloads and demonstrate appropriate OLAP optimization techniques
ETL Design	To compare different ETL processes and tools; to design simple ETL processes
OLAP Modeling	To describe the role of functional dependencies for the identification of multidimensional structures; to design multidimensional structures
OLAP Modeling Approaches	To assess different OLAP modeling approaches; to demonstrate conceptual modeling of scenarios according to an appropriate approach
OLAP Implementation	To describe the architecture and functionality of OLAP systems; to implement reports with a standard BI platform according to a case study
Modern Architectures	To characterize modern architectures addressing hardware trends (multi/many core, in-memory), novel data requirements (Big Data, streaming data), and increased user expectations (situational BI)
Project Management	To compare different approaches to engage in MIS/DWH projects; to evaluate different BI strategies in organizations and understand their implementation
Information Management	To understand Data Science concepts; to be able to apply information needs analyses
5	<p>Learning outcomes:</p> <p>Academic: The students learn to know common methods and practices as well as technological foundations for creation and maintenance of Data Warehouse and Management Information Systems. The students will develop an understanding of the most common terms in the domain and will be able to critically reflect on these.</p> <p>Soft skills: Through exercises and presentations, students are able to develop the following soft skills:</p> <ul style="list-style-type: none"> • Presentation techniques • Team work • Ability to communicate and collaborate • Autonomous working • Time management • Application of theoretical concepts in practical settings

6	Description of possible electives within the modules: The module can be taken as part of the track Business Intelligence or as an elective. Within the electives a minimum of 2 seminars has to be taken.									
7	Examination: Examinations for every part of the module									
8	Relevant Work:									
	<table border="1"> <thead> <tr> <th data-bbox="220 443 284 499">No</th> <th data-bbox="284 443 882 499">Number and Type; Connection to Course</th> <th data-bbox="882 443 1114 499">Duration</th> <th data-bbox="1114 443 1458 499">Part of final mark in %</th> </tr> </thead> <tbody> <tr> <td data-bbox="220 499 284 566">1</td> <td data-bbox="284 499 882 566">Final Written Exam</td> <td data-bbox="882 499 1114 566">120 min.</td> <td data-bbox="1114 499 1458 566">100 %</td> </tr> </tbody> </table>	No	Number and Type; Connection to Course	Duration	Part of final mark in %	1	Final Written Exam	120 min.	100 %	
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1	Final Written Exam	120 min.	100 %							
9	Study Work:									
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	No	Number and Type; Connection to Course	Duration							
1	4 Exercises	each 10 pages								
2	1 presentation	20 minutes								
10	Prerequisites for Credit Points: The credit points will be granted after all relevant work and study work have been successfully completed.									
11	CP Assignment:									
	Presence (see No 3)	No 1	1.00 CP							
		No 2	1.00 CP							
	Relevant Work (see No 8)	No 1	2.50 CP							
	Study Work (see No 9)	No 1	1.00 CP							
	Total		6 CP							
12	Weight of the module grade for the overall grade: 6/120 (5%)									
13	Module Prerequisites: none									
14	Presence: Presence is strongly recommended to warrant learning success									
15	Mobility/Acknowledgement:									
	Use of the module for other course programs	Master Business Administration								

16	Responsible Lecturer: Prof. Dr. Dr. h.c. Dr. h.c. Jörg Becker, Prof. Dr. Gottfried Vossen	Department: School of Business and Economics
17	Misc.:	

Business Intelligence: Data Analytics - I

Module Title english:		Business Intelligence: Data Analytics - I			
Course Program:		Master Information Systems			
1	Module No: BI2	State: Elective	Language of Instruction: English		
2	Turn: each winter semester	Duration: 1 semester	Semester: 1 or 2	CP: 6	Workload (h): 180
3	Module Structure:				
	No	Type	Course	State	Workload (h)
					Presence (h + CH) Self-Study (h)
	1	Lecture	Data Analytics I	Compulsory	30 h (2 CH) 60
2	Exercise	Exercise on Data Analytics - I	Compulsory	30 h (2 CH) 60	
4	Module Profile:				
	Purpose of the module/integration into curriculum:				
	The track “Business Intelligence” offers a way to start a career in Data Science, Database Management and the like. The students are supposed to be familiar with the basic concepts from probability theory and statistics and the Statistical Programming Language R.				
	Course content:				
The lecture focusses on multivariate statistical methods in the context of Data Science. The main topics are data preprocessing and unsupervised learning. Practical exercises using the statistical Software R are integrated into the lecture and a tutorial.					
	Themes	Learning objectives			
	Data Preprocessing	Data quality analysis and data cleaning a-priori to quantitative analysis			
	Unsupervised Learning	Clustering, Dimensionality Reduction Techniques			
5	Learning outcomes:				
	Academic:				
The student is supposed to have an understanding of state of the art techniques in Data Science, specifically unsupervised learning, as well as the ability to choose and implement (in R) an appropriate technique for a given practical task.					
Soft skills:					
Team work, presentation techniques					
6	Description of possible electives within the modules:				
The module can be taken as part of the track Business Intelligence or as an elective. Within the electives a minimum of 2 seminars has to be taken.					

7	Examination: Final Module Exam			
8	Relevant Work:			
	No	Number and Type; Connection to Course	Duration	Part of final mark in %
	1	Final Written Exam	120 min.	100 %
9	Study Work: none			
10	Prerequisites for Credit Points: The credit points will be granted after all relevant work and study work have been successfully completed.			
11	CP Assignment:			
	Presence (see No 3)	No 1	1.00 CP	
		No 2	1.00 CP	
	Relevant Work (see No 8)	No 1	4.00 CP	
Total		6 CP		
12	Weight of the module grade for the overall grade: 6/120 (5%)			
13	Module Prerequisites: none			
14	Presence: Presence is recommended to warrant learning success.			
15	Mobility/Acknowledgement:			
	Use of the module for other course programs	Master Business Administration		
16	Responsible Lecturer: Prof. Dr. Heike Trautmann		Department: School of Business and Economics	
	17 Misc.:			

Business Intelligence: Data Analytics - II

Module Title english:		Business Intelligence: Data Analytics - II			
Course Program:		Master Information Systems			
1	Module No: BI3	State: Elective	Language of Instruction: English		
2	Turn: each summer semester	Duration: 1 semester	Semester: 1 or 2	CP: 6	Workload (h): 180
3	Module Structure:				
	No	Type	Course	State	Workload (h)
					Presence (h + CH) Self-Study (h)
	1	Lecture	Data Analytics - II	Compulsory	30 h (2 CH) 60
2	Exercise	Exercise on Data Analytics - II	Compulsory	30 h (2 CH) 60	
4	Module Profile:				
	Purpose of the module/integration into curriculum:				
	The track “Business Intelligence” offers a way to start a career in Data Science, Database Management and the like. The students are supposed to be familiar with the basic concepts from probability theory and statistics and the Statistical Programming Language R.				
	Course content:				
The lecture focusses on multivariate statistical methods in the context of Data Science. The main topics are evolutionary optimization and supervised / machine learning. Practical exercises using the statistical Software R are integrated into the lecture and a tutorial.					
Themes			Learning objectives		
Supervised Learning / Machine Learning			Selected regression and classification approaches		
Evolutionary Optimization			Single- and Multiobjective Evolutionary Optimization		
5	Learning outcomes:				
	Academic:				
The student is supposed to have an understanding of state of the art techniques in Data Science, specifically supervised learning and evolutionary optimization, as well as the ability to choose and implement (in R) an appropriate technique for a given practical task.					
Soft skills:					
Team work, presentation techniques					
6	Description of possible electives within the modules:				
The module can be taken as part of the track Business Intelligence or as an elective. Within the electives a minimum of 2 seminars has to be taken.					

7	Examination: Examinations for every part of the module			
8	Relevant Work:			
	No	Number and Type; Connection to Course	Duration	Part of final mark in %
	1	Written Exam	120 min.	60 %
2	Case study with R software, presentation	Ca 40 Min. (presentation), ca 15 pages	40 %	
9	Study Work: none			
10	Prerequisites for Credit Points: The credit points will be granted after all relevant work and study work have been successfully completed.			
11	CP Assignment:			
	Presence (see No 3)	No 1	1.00 CP	
		No 2	1.00 CP	
	Relevant Work (see No 8)	No 1	2.50 CP	
		No 2	1.50 CP	
Total		6 CP		
12	Weight of the module grade for the overall grade: 6/120 (5%)			
13	Module Prerequisites: none			
14	Presence: Presence is strongly recommended to warrant learning success			
15	Mobility/Acknowledgement:			
	Use of the module for other course programs	Master Business Administration		
16	Responsible Lecturer: Prof. Dr. Heike Trautmann		Department: School of Business and Economics	
	17 Misc.:			

Information Systems Development: Logic Specification and Programming

Module Title english:		Information Systems Development: Logic Specification and Programming			
Course Program:		Master Information Systems			
1	Module No: ISD1	State: Elective	Language of Instruction: English		
2	Turn: each winter semester	Duration: 1 semester	Semester: 1 or 2	CP: 6	Workload (h): 180
3	Module Structure:				
	No	Type	Course	State	Workload (h)
					Presence (h + CH) Self-Study (h)
	1	Lecture	Logic Specification and Programming	Compulsory	30 h (2 CH) 45
2	Exercise	Exercise on Logic Specification and Programming	Compulsory	30 h (2 CH) 75	
4	Module Profile:				
	Purpose of the module/integration into curriculum:				
	It is assumed that the students have some experience with programming and software development as taught in the bachelor program. Depending on the subject of the intended master thesis, the taught material can be helpful.				
	Course content:				
The course consists of lectures providing the theoretical background and of accompanying biweekly exercises.					
	Themes	Learning objectives			
	Logics	Expressing the relationships between real-world entities in logic. Knowing how to transform a logic specification into an executable Prolog program.			
	Prolog	Knowing the features of the logic programming language Prolog, such as Horn-rules, unification, SLD-resolution, backtracking, negation, and cut. Being able to program in Prolog.			
	Constraint Solving	Expressing real-world relationships as constraints over a suitable domain. Knowing how to solve such constraints using a constraint solver from Prolog.			

	Business Rules Management Systems	Knowing how to express volatile business logic by rules. Including these rules into a business rules management system (BRMS) such as Drools. Knowing how the BRMS evaluates the rules. Integrating a BRMS into an information system.										
	Temporal Logics and Model Checking	Expressing temporal relationships by temporal logics such as CTL and LTL. Knowing how to automatically check information systems for compliance with a temporal specification. Being able to apply a model checker to guarantee the correctness of program.										
	Datalog and Deductive Databases	Knowing the syntax and semantics of the logic database-query language Datalog. Being able to query deductive databases.										
5	<p>Learning outcomes:</p> <p>Academic: The students learn to specify complex real-world relationships using logic and to transform such a specification into an executable logic program possibly including constraints or to handle it using model checking.</p> <p>Soft skills: The exercises are solved in teams of 3-5 students. Hence, the students get some experience with teamwork.</p>											
6	Description of possible electives within the modules: none											
7	Examination: Examinations for every part of the module											
8	<p>Relevant Work:</p> <table border="1"> <thead> <tr> <th>No</th> <th>Number and Type; Connection to Course</th> <th>Duration</th> <th>Part of final mark in %</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Final written exam</td> <td>120 min.</td> <td>100 %</td> </tr> </tbody> </table>				No	Number and Type; Connection to Course	Duration	Part of final mark in %	1	Final written exam	120 min.	100 %
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11	<p>CP Assignment:</p> <table border="1"> <tbody> <tr> <td rowspan="2">Presence (see No 3)</td> <td>No 1</td> <td>1.00 CP</td> </tr> <tr> <td>No 2</td> <td>1.00 CP</td> </tr> <tr> <td>Relevant Work (see No 8)</td> <td>No 1</td> <td>3.00 CP</td> </tr> </tbody> </table>				Presence (see No 3)	No 1	1.00 CP	No 2	1.00 CP	Relevant Work (see No 8)	No 1	3.00 CP
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	No 2	1.00 CP										
Relevant Work (see No 8)	No 1	3.00 CP										

	Study Work (see No 9)	No 1	1.00 CP
	Total		6 CP
12	Weight of the module grade for the overall grade: 6/120 (5%)		
13	Module Prerequisites: none		
14	Presence: Presence is strongly recommended to warrant learning success		
15	Mobility/Acknowledgement:		
	Use of the module for other course programs	Master Business Administration	
16	Responsible Lecturer: Prof. Dr. Herbert Kuchen	Department: School of Business and Economics	
17	Misc.: The module can be taken as part of the track Information Systems Development or as an elective.		

Information Systems Development: Data Integration

Module Title english:		Information Systems Development: Data Integration			
Course Program:		Master Information Systems			
1	Module No: ISD2	State: Elective	Language of Instruction: English		
2	Turn: each winter semester	Duration: 1 semester	Semester: 1 or 2	CP: 6	Workload (h): 180
3	Module Structure:				
	No	Type	Course	State	Workload (h)
					Presence (h + CH) Self-Study (h)
	1	Lecture	Data Integration	Compulsory	30 h (2 CH) 60
2	Exercise	Exercise on Data Integration	Compulsory	30 h (2 CH) 60	
4	Module Profile:				
	Purpose of the module/integration into curriculum:				
	Data Integration is a core requirement for diverse information system development tasks, ranging from Web search and mash-ups to data warehousing and business intelligence. In this course, a collection of tools and techniques is presented that can be applied in modern data integration tasks; these range from view construction and query processing in heterogeneous distributed databases to schema mapping and matching, Web services and mash-up APIs. In this course, lectures are complemented by student presentations that provide additional content. In addition, exercises provide ample opportunities to apply the various techniques in realistic and practical settings.				
	Course content:				
Students will become able to explain the problems, issues, solutions, techniques, and tools relating to data integration. They will be able not only to locate and present relevant sources and research in the area, but also to apply data integration techniques in practical scenarios. Moreover, they will be familiarized with the current research literature in the field.					
Themes			Learning objectives		
Introduction, Background, Architectures			To discuss the problems, issues, solutions, techniques, and tools relating to data integration		
Web Crawling, Search Engines			To discuss and apply integration on the Web as the currently most dominating integration application		
Social media analysis, advertising, and recommendation			To discuss and apply techniques for social media analysis, advertising, and recommender systems		

	Data cleansing, data fusion, data quality	To apply basic activities in data integration														
	Schema matching, schema mapping	To explain and apply approaches to match and map data between various data sources														
	GaV/LaV Modeling	To apply traditional database techniques (in this case queries and views) in the novel context of data integration														
5	<p>Learning outcomes:</p> <p>Academic: In the oral presentation, the student should demonstrate the ability • to select, engage with, assess, and apply pieces of literature, • to build a concise, yet coherent argument, and • to identify open issues. In the written examination, the student should demonstrate the ability • to integrate and apply several concepts, • to apply the concepts to a data integration scenario.</p> <p>Soft skills: Through exercises and presentations, students are able to develop the following soft skills: - Presentation techniques - Team work - Ability to communicate and collaborate - Autonomous working - Time management - Application of theoretical concepts in practical settings</p>															
6	<p>Description of possible electives within the modules: The module can be taken as part of the track Information Systems Development or as an elective. Within the electives a minimum of 2 seminars has to be taken.</p>															
7	<p>Examination: Examinations for every part of the module</p>															
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9	<p>Study Work: none</p>															
10	<p>Prerequisites for Credit Points: The credit points will be granted after all relevant work and study work have been successfully completed.</p>															
11	<p>CP Assignment:</p> <table border="1"> <tbody> <tr> <td rowspan="2">Presence (see No 3)</td> <td>No 1</td> <td>1.00 CP</td> </tr> <tr> <td>No 2</td> <td>1.00 CP</td> </tr> <tr> <td rowspan="2">Relevant Work (see No 8)</td> <td>No 1</td> <td>2.50 CP</td> </tr> <tr> <td>No 2</td> <td>1.50 CP</td> </tr> <tr> <td>Total</td> <td></td> <td>6 CP</td> </tr> </tbody> </table>			Presence (see No 3)	No 1	1.00 CP	No 2	1.00 CP	Relevant Work (see No 8)	No 1	2.50 CP	No 2	1.50 CP	Total		6 CP
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Relevant Work (see No 8)	No 1	2.50 CP														
	No 2	1.50 CP														
Total		6 CP														

12	Weight of the module grade for the overall grade: 6/120 (5%)			
13	Module Prerequisites: Basic database knowledge			
14	Presence: Presence is recommended.			
15	Mobility/Acknowledgement: <hr/> <table border="1" data-bbox="209 584 1452 645"> <tr> <td data-bbox="209 584 826 645">Use of the module for other course programs</td> <td data-bbox="831 584 1452 645">Master Business Administration</td> </tr> </table>		Use of the module for other course programs	Master Business Administration
Use of the module for other course programs	Master Business Administration			
16	Responsible Lecturer: Prof. Dr. Gottfried Vossen	Department: School of Business and Economics		
17	Misc.:			

Information Systems Development: Advanced Concepts in Software Engineering

Module Title english:		Information Systems Development: Advanced Concepts in Software Engineering			
Course Program:		Master Information Systems			
1	Module No: ISD3	State: Elective	Language of Instruction: English		
2	Turn: each summer semester	Duration: 1 semester	Semester: 1 or 2	CP: 6	Workload (h): 180
3	Module Structure:				
	No	Type	Course	State	Workload (h)
					Presence (h + CH) Self-Study (h)
	1	Lecture	Advanced Concepts in Software Engineering	Compulsory	30 h (2 CH) 45
2	Exercise	Exercise on Advanced Concepts in Software Engineering	Compulsory	30 h (2 CH) 75	
4	Module Profile:				
	Purpose of the module/integration into curriculum:				
	It is assumed that the students have some experience with programming and software development as they are taught in the bachelor program. The learned concepts and techniques are (often) helpful in the master thesis.				
	Course content:				
The course consists of lectures providing the theoretical background of topical software-engineering concepts such as enterprise application integration, model-driven software development, web applications, microservices, and container virtualization. Moreover, it consists of 5 assignments where these concepts are applied to develop and connect example information system.					
	Themes	Learning objectives			
	Enterprise Application Integration (EAI) concepts	Knowing and being able to evaluate typical EAI topologies and possible integration layers. Knowing corresponding communication paradigms.			
	Web applications and Middleware	Knowing typical concepts and frameworks for the development of enterprise applications. Being able to use these frameworks for developing enterprise applications.			

	Web Services	Being able to connect existing enterprise applications using web-service technologies.													
	Message-oriented Middleware	Being able to connect enterprise applications using message-oriented middleware.													
	Model-Driven Software Development (MDSO)	Understanding and being able to apply the main concepts of MDSO such as automatically transforming a model to e.g. executable code as well as meta-modeling and domain-specific languages.													
	Microservices	Understanding the advantages and disadvantages of microservice architectures. Being able to design resilient and scalable information systems based on microservice architectures.													
	Container Virtualization	Knowing recent concepts of operating-system virtualization and being able to apply them.													
5	<p>Learning outcomes:</p> <p>Academic: The students learn to know and apply current integration technologies for software systems within a company and across collaborating enterprises. Moreover, they learn how to increase the productivity of software development by automatically transforming abstract models to desired artifacts such as executable code. Finally, they learn to know and apply architecture concepts for resilient and scalable information systems.</p> <p>Soft skills: The assignments are solved in teams of about 5 students. Thus, the students are trained to collaborate in teams.</p>														
6	<p>Description of possible electives within the modules: none</p>														
7	<p>Examination: Examinations for every part of the module</p>														
8	<p>Relevant Work:</p> <table border="1"> <thead> <tr> <th>No</th> <th>Number and Type; Connection to Course</th> <th>Duration</th> <th>Part of final mark in %</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Written exam</td> <td>120 min.</td> <td>70 %</td> </tr> <tr> <td>2</td> <td>Software artifacts(4 parts) in groups</td> <td>Ca 20 pages/part, 45 code lines/code page</td> <td>30 %</td> </tr> </tbody> </table>			No	Number and Type; Connection to Course	Duration	Part of final mark in %	1	Written exam	120 min.	70 %	2	Software artifacts(4 parts) in groups	Ca 20 pages/part, 45 code lines/code page	30 %
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1	Written exam	120 min.	70 %												
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9	<p>Study Work: none</p>														
10	<p>Prerequisites for Credit Points: The credit points will be granted after all relevant work and study work have been successfully completed.</p>														
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Presence (see No 3)	No 1	1.00 CP													

		No 2	1.00 CP
	Relevant Work (see No 8)	No 1	2.50 CP
		No 2	1.50 CP
	Total		6 CP
12	Weight of the module grade for the overall grade: 6/120 (5%)		
13	Module Prerequisites: none		
14	Presence: Presence is strongly recommended to warrant learning success		
15	Mobility/Acknowledgement:		
	Use of the module for other course programs	Master Business Administration	
16	Responsible Lecturer: Prof. Dr. Herbert Kuchen	Department: School of Business and Economics	
17	Misc.: The module can be taken as part of the track Information Systems Development or as an elective.		

Logistics, Production and Retail: Supply Chain Management

Module Title english:		Logistics, Production and Retail: Supply Chain Management			
Course Program:		Master Information Systems			
1	Module No: LPR1	State: Elective	Language of Instruction: English		
2	Turn: each winter semester	Duration: 1 semester	Semester: 1 or 2	CP: 6	Workload (h): 180
3	Module Structure:				
	No	Type	Course	State	Workload (h)
					Presence (h + CH) Self-Study (h)
	1	Lecture	Supply Chain Management	Compulsory	30 h (2 CH) 60
2	Exercise	Exercise on Supply Chain Management	Compulsory	30 h (2 CH) 60	
4	Module Profile:				
	<p>Purpose of the module/integration into curriculum: Supply chains focus onto value creation networks of often legally independent companies that are tightly connected via different linkages or flows (e.g. material, information and financial flows). The course “Supply Chain Management (SCM)” elaborates those linkages across companies and specifically addresses issues of supply chain design, planning, coordination and optimization. Collaborative process concepts integrating the different business activities of the companies in the supply chain are investigated in detail. For each lectured topic related IT-Systems are introduced and their application in Supply Chain Management is discussed. Furthermore, the different modes of usage and architectures of Information Systems in Supply Chain Management are examined. Case studies, among others carried out with the help of SCM tools currently used in practice, underline the practical aspects of the Profile taught.</p> <p>Course content: The production and retail module studies companies in the context of the intra- and inter-organizational processes of all acting companies in a supply chain. The Supply Chain Management course encompasses topics like the principle tasks of designing, planning, and executing a supply chain under the usage of different modelling approaches and related information systems. It complements the other industry-driven courses of the module (Production Planning and Control, Retail) by introducing general Supply Chain concepts interlinking the activities of retail and production. The adaption of these concepts to specific industry sectors is part of the other courses of the track.</p>				
	Themes	Learning objectives			
	Basic Principles of Supply Chain Management	To learn about basic terms, ideas, challenges and targets of Supply Chain Management.			

	Supply Chain Modeling	To learn about the basic elements to be modeled in a supply chain. To understand the intention and objectives of modeling supply chains and to be able to create such a model.										
	Supply Chain Design	To learn about the relevant influencing factors for supply chain design decisions and to understand design options and principles.										
	Supply Chain Planning	To understand the core tasks of supply chain planning and the methods being used for demand planning, network planning, supply planning, production planning and distribution planning as well as the objectives and key indicators of order promising.										
	Supply Chain Execution, Risk and Performance Management	To learn about the scope of supply chain execution. To get a understanding of the basic concepts and functions of Supply Chain Risk Management and Performance Management.										
	Digital Supply Chain & IT-Systems in Supply Chain Management	To get insights into the digitization of supply chains. To get an idea of features and characteristics of different SCM software systems.										
5	<p>Learning outcomes:</p> <p>Academic: The course's major academic outcome is a broad and profound understanding of supply chains' challenges, targets, and related concepts for managing supply chain activities. Furthermore, a profound knowledge in actual methods and concepts of supply chain design, modeling, planning, and optimization should be obtained.</p> <p>Soft skills: Students are encouraged to prepare the Profile of the lecture and exercise and to perform follow-up work in teams. This is supported by a Learnweb discussion forum that is guided by the chair. Case studies that accompany the lecture especially in Supply Chain Design and Planning provide the opportunity for students to get acquainted to selected SCM tools and to apply them in a realistic scenario. The case studies are organized as group work and thus promote the students' ability to cooperate in teams. The intermediary results are presented regularly by the groups in front of the complete audience. This enhances the students' presentation and discussion skills.</p>											
6	<p>Description of possible electives within the modules: The module can be taken as part of the track Logistics, Production and Retail or as an elective. Within the electives a minimum of 2 seminars has to be taken.</p>											
7	<p>Examination: Examinations for every part of the module</p>											
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	1 Case study with group presentation (divided into max. 4 subpresentations	max. 80 min.															
10	Prerequisites for Credit Points: The credit points will be granted after all relevant work and study work have been successfully completed.																
11	CP Assignment: <table border="1" data-bbox="220 533 1436 824"> <tr> <td data-bbox="220 533 639 591">Presence (see No 3)</td> <td data-bbox="639 533 1038 591">No 1</td> <td data-bbox="1038 533 1436 591">1.00 CP</td> </tr> <tr> <td data-bbox="220 591 639 649"></td> <td data-bbox="639 591 1038 649">No 2</td> <td data-bbox="1038 591 1436 649">1.00 CP</td> </tr> <tr> <td data-bbox="220 649 639 707">Relevant Work (see No 8)</td> <td data-bbox="639 649 1038 707">No 1</td> <td data-bbox="1038 649 1436 707">2.00 CP</td> </tr> <tr> <td data-bbox="220 707 639 766">Study Work (see No 9)</td> <td data-bbox="639 707 1038 766">No 1</td> <td data-bbox="1038 707 1436 766">2.00 CP</td> </tr> <tr> <td data-bbox="220 766 639 824">Total</td> <td data-bbox="639 766 1038 824"></td> <td data-bbox="1038 766 1436 824">6 CP</td> </tr> </table>		Presence (see No 3)	No 1	1.00 CP		No 2	1.00 CP	Relevant Work (see No 8)	No 1	2.00 CP	Study Work (see No 9)	No 1	2.00 CP	Total		6 CP
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14	Presence: Presence is strongly recommended to warrant learning success																
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16	Responsible Lecturer: Prof. Dr.-Ing. Bernd Hellingrath	Department: School of Business and Economics															
17	Misc.:																

Logistics, Production and Retail: Production Planning and Control

Module Title english:		Logistics, Production and Retail: Production Planning and Control			
Course Program:		Master Information Systems			
1	Module No: LPR2	State: Elective	Language of Instruction: English		
2	Turn: each winter semester	Duration: 1 semester	Semester: 1 or 2	CP: 6	Workload (h): 180
3	Module Structure:				
	No	Type	Course	State	Workload (h)
					Presence (h + CH) Self-Study (h)
	1	Lecture	Production Planning and Control	Compulsory	30 h (2 CH) 60
2	Exercise	Exercise on Production Planning and Control	Compulsory	30 h (2 CH) 60	
4	Module Profile:				
	Purpose of the module/integration into curriculum:				
	In the “Production Planning and Control” (PPC) course the process and data modeling concepts are adapted to the manufacturing sector. An integrated perspective is taken within the course by presenting processes, functions, data structures and information flows relevant to this domain. Furthermore, the potential of current data analytics approaches is discussed while taking a business process management perspective. The PPC course is complementary to the courses “Retail” and “Supply Chain Management”.				
	Course content:				
The students gain a comprehensive overview of typical tasks in production planning and control, such as product offering planning, product costing, demand forecasting, materials requirements planning, production scheduling, and inventory and capacity management. Moreover, the students learn to apply the methods and techniques to perform these tasks. Additionally, the students learn about current trends and issues in PPC and how to assess them critically.					
	Themes	Learning objectives			
	Production Planning	To understand and be able to apply the concepts related to demand management, materials requirements planning, inventory control and capacity management.			
	Production Control	To understand and be able to apply the concepts related to production control.			

	IT Systems for PPC	To understand how IT (Information Technology) systems can support production planning and control and to gain hands-on experience with an Enterprise Resource Planning (ERP) system.													
	Data Modeling in PPC	To understand the underlying data structures and information requirements in production planning and control.													
	Smart Manufacturing	To understand how innovative technologies and services influence production processes and how the results of data analytics can be interpreted in the context of production planning and control.													
5	<p>Learning outcomes:</p> <p>Academic: The students understand the PPC processes and how information systems support them. They understand the cross-departmental integration of processes and data structures. They deepen their knowledge in process and data modeling. They are able to apply the methods and techniques to perform various PPC tasks.</p> <p>Soft skills: The exercises comprise both individual work and team-based group work. The students apply and improve their capabilities in group work, presentation and discussion.</p>														
6	<p>Description of possible electives within the modules: The module can be taken as part of the track Logistics, Production and Retail or as an elective. Within the electives a minimum of 2 seminars has to be taken.</p>														
7	Examination: Final Module Exam														
8	<p>Relevant Work:</p> <table border="1"> <thead> <tr> <th>No</th> <th>Number and Type; Connection to Course</th> <th>Duration</th> <th>Part of final mark in %</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Final Written Exam</td> <td>120 min.</td> <td>100 %</td> </tr> </tbody> </table>				No	Number and Type; Connection to Course	Duration	Part of final mark in %	1	Final Written Exam	120 min.	100 %			
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	Total	6 CP
12	Weight of the module grade for the overall grade: 6/120 (5%)	
13	Module Prerequisites: none	
14	Presence: Presence is strongly recommended to warrant learning success	
15	Mobility/Acknowledgement:	
	Use of the module for other course programs	Master Business Administration
16	Responsible Lecturer: Prof. Dr. Dr. h.c. Dr. h.c. Jörg Becker	Department: School of Business and Economics
17	Misc.:	

Logistics, Production and Retail: Retail

Module Title english:		Logistics, Production and Retail: Retail			
Course Program:		Master Information Systems			
1	Module No: LPR3	State: Elective	Language of Instruction: English		
2	Turn: each summer semester	Duration: 1 semester	Semester: 1 or 2	CP: 6	Workload (h): 180
3	Module Structure:				
	No	Type	Course	State	Workload (h)
					Presence (h + CH) Self-Study (h)
	1	Lecture	Retail	Compulsory	30 h (2 CH) 60
2	Lecture	Exercise on Retail	Compulsory	30 h (2 CH) 60	
4	Module Profile:				
	Purpose of the module/integration into curriculum:				
	The course is complementary to the courses Production Planning and Control and Supply Chain Management.				
	Course content:				
	The retail course as part of the logistics, production and retail module presents retail as an important sector for the economy. It uses reference models for retail as a framework to introduce retail business processes and data structures. To highlight the integration of business processes and information technology, the ERP system selection and implementation process is elaborated. The introduction of retail analytics and omni channel retailing represents the ongoing evolution of the retail sector to the digital age. Process and data modeling techniques are applied throughout the lecture and accompanying exercises.				
	Themes	Learning objectives			
	Business Processes in Retail	The students get to know reference models for retail. They understand core processes, coordination processes, support processes and their integration.			
	Process Modeling	The students are able to model business processes in retail, especially with the help of domain specific, semantic modeling languages.			
	Data Modeling	The students are able to model data structures and get to know selected data models in retail.			
	ERP-Systems for Retail	The students understand the importance of ERP-systems in retail and their selection and implementation process.			

	Smart Retail	The students get to know recent developments in the retail sector (e.g. retail analytics). They learn how these developments can be used to enhance existing or create new business models.																		
5	<p>Learning outcomes:</p> <p>Academic: The students recognize information systems and the underlying business processes in retail as an important sector for the economy. They understand the cross-departmental integration of business processes and how retail companies are embedded in the value chain. They deepen their knowledge in process and data modeling and are able to apply methods and techniques in various application scenarios. Additionally, the students understand how the retail sector has and is continuously changing and which benefits arise from these changes.</p> <p>Soft skills: The exercises comprise both individual work and team-based group work. The students apply and improve their capabilities in team work, presentation and discussion.</p>																			
6	<p>Description of possible electives within the modules: The module can be taken as part of the track Logistics, Production and Retail or as an elective. Within the electives a minimum of 2 seminars has to be taken.</p>																			
7	Examination: Final Module Exam																			
8	<p>Relevant Work:</p> <table border="1"> <thead> <tr> <th>No</th> <th>Number and Type; Connection to Course</th> <th>Duration</th> <th>Part of final mark in %</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Final written exam</td> <td>120 min.</td> <td>100 %</td> </tr> </tbody> </table>				No	Number and Type; Connection to Course	Duration	Part of final mark in %	1	Final written exam	120 min.	100 %								
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	No 2	0.50 CP																		
Total		6 CP																		

12	Weight of the module grade for the overall grade: 6/120 (5%)			
13	Module Prerequisites: none			
14	Presence: Presence is highly recommended.			
15	Mobility/Acknowledgement: <hr/> <table border="1" data-bbox="220 591 1444 647"> <tr> <td data-bbox="220 591 826 647">Use of the module for other course programs</td> <td data-bbox="834 591 1444 647">Master Business Administration</td> </tr> </table>		Use of the module for other course programs	Master Business Administration
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16	Responsible Lecturer: Prof. Dr. Dr. h.c. Dr. h.c. Jörg Becker	Department: School of Business and Economics		
17	Misc.:			

Innovation Management

Module Title english:		Innovation Management			
Course Program:		Master Information Systems			
1	Module No: MCM05	State: Compulsory	Language of Instruction: English		
2	Turn: each winter semester	Duration: 1 semester	Semester: 1 or 2	CP: 6	Workload (h): 180
3	Module Structure:				
	No	Type	Course	State	Workload (h)
					Presence (h + CH) Self-Study (h)
	1	Lecture	Innovation Management	Compulsory	30 h (2 CH) 60
2	Exercise	Tutorial Innovation Management	Compulsory	30 h (2 CH) 60	
4	Module Profile:				
	<p>Purpose of the module/integration into curriculum: This course teaches how to create value through products and services (value equity) by (technology-driven) innovation in both entrepreneurial and established firms. We examine innovation-based strategies as a source of competitive advantage and then examine how to build organizations that excel at identifying, building and commercializing technological innovations. The course examines how entrepreneurs can shape their firms so that they continuously build and commercialize valuable innovations. Many of the examples also focus on how established firms can become more entrepreneurial in their approach to innovation.</p> <p>Course content: Main topics:</p> <ul style="list-style-type: none"> • Innovation process • Creating an organizational environment that rewards innovation and entrepreneurship • Internal and external sources of innovation • Structuring entrepreneurial and established organizations for effective innovation <p>Course objective: It is the objective of this course that students learn the main issues in innovation management in order to successfully create value through products and services (value equity) in both entrepreneurial and established firms.</p>				
5	Learning outcomes:				
	<p>Academic: After following this course, you are able to...</p> <ul style="list-style-type: none"> • Discuss current topics in strategic innovation management, • Understand the innovation process, several organizational structures to foster innovations, and the challenges of innovation in large and small firms, • Apply these concepts directly to real world situations. <p>Soft skills:</p> <ul style="list-style-type: none"> • Case discussions improve your problem-solving skills. 				

	<ul style="list-style-type: none"> • Critical discussion of research allows you improving your argumentation and communication skills. • The group work helps you to improve your collaboration and presentation skills. 														
6	Description of possible electives within the modules: none														
7	Examination: Examinations for every part of the module														
8	Relevant Work: <table border="1"> <thead> <tr> <th>No</th> <th>Number and Type; Connection to Course</th> <th>Duration</th> <th>Part of final mark in %</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Written report (group work when indicated)</td> <td>maximum of 50 pages</td> <td>100 %</td> </tr> </tbody> </table>	No	Number and Type; Connection to Course	Duration	Part of final mark in %	1	Written report (group work when indicated)	maximum of 50 pages	100 %						
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Total		6 CP													
12	Weight of the module grade for the overall grade: 6/120 (5%)														
13	Module Prerequisites: none														
14	Presence: Presence is strongly recommended to warrant learning success.														
15	Mobility/Acknowledgement: <table border="1"> <tbody> <tr> <td>Use of the module for other course programs</td> <td>Master Business Administration</td> </tr> </tbody> </table>	Use of the module for other course programs	Master Business Administration												
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16	Responsible Lecturer: Professor Dr. Thorsten Wiesel	Department: University of Münster, School of Business and Economics
17	Misc.:	

Direct Marketing

Module Title english:		Direct Markteting			
Course Program:		Master Information Systems			
1	Module No: MCM07	State: Compulsory	Language of Instruction: English		
2	Turn: each winter semester	Duration: 1 semester	Semester: 1 or 2	CP: 6	Workload (h): 180
3	Module Structure:				
	No	Type	Course	State	Workload (h)
					Presence (h + CH)
					Self-Study (h)
	1	Lecture	Direct Marketing	Compulsory	30 h (2 CH) 60
	2	Exercise	Tutorial on Direct Marketing	Compulsory	30 h (2 CH) 60
4	Module Profile:				
	<p>Course content: This course focuses on how companies can design and influence customer relationships and thereby acquire relationship equity. Therefore, the conceptual and methodical foundations of customer relationship management (CRM) and direct marketing are introduced. The students will obtain a broad overview of the planning, implementation, and integration of various direct marketing media. Moreover, the application of modern market research tools in the field of CRM and direct marketing are discussed. Further emphasis is placed on value-oriented planning and optimization of direct marketing activities and the monitoring of its success.</p> <p>Main topics: The course will cover the following topics:</p> <ul style="list-style-type: none"> • Introduction to foundations of CRM and direct marketing • Characteristics of direct marketing media • Interplay of customer relationship management and direct marketing • Value orientation of direct marketing • Direct marketing controlling and accountability <p>Course objective: The lecture aims to provide students with an advanced understanding of customer relationship management and direct marketing. Thereby, the lecture covers the opportunities and challenges of both topics in a data driven company.</p>				
5	Learning outcomes:				
	<p>Academic:</p> <ul style="list-style-type: none"> • Students are able to value customers with different approaches (Customer Lifetime Value (CLV), Recency, Frequency, Monetary Value (RFM)) • Students are able to plan and execute direct marketing campaigns • Students learn how to handle the data available in companies (legal, methodological, strategic) <p>Soft skills:</p>				

	<ul style="list-style-type: none"> • Cooperation and teamwork: part of the assignments is done via group work • Presentation skills: assignments have to be presented in front of the class • Communication skills: tutorials include discussion sessions 																	
6	Description of possible electives within the modules: none																	
7	Examination: Examinations for every part of the module																	
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CP Assignment:																		
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Relevant Work (see No 8)	No 1	2.50 CP																
Study Work (see No 9)	No 1	1.50																
Total		6 CP																
12	Weight of the module grade for the overall grade: 6/120 (5%)																	
13	Module Prerequisites: none																	
14	Presence: Presence is strongly recommended to warrant learning success.																	
15	<table border="1"> <thead> <tr> <th colspan="2">Mobility/Acknowledgement:</th> </tr> </thead> <tbody> <tr> <td>Use of the module for other course programs</td> <td>Master Business Administration</td> </tr> </tbody> </table>	Mobility/Acknowledgement:		Use of the module for other course programs	Master Business Administration													
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Use of the module for other course programs	Master Business Administration																	

16	Responsible Lecturer: Professor Dr. Manfred Krafft	Department: School of Business and Economics
17	Misc.:	

Channel Management

Module Title english:		Channel Management			
Course Program:		Master Information Systems			
1	Module No: MCM09	State: Compulsory	Language of Instruction: English		
2	Turn: each summer semester	Duration: 1 semester	Semester: 1 or 2	CP: 6	Workload (h): 180
3	Module Structure:				
	No	Type	Course	State	Workload (h)
					Presence (h + CH) Self-Study (h)
	1	Lecture/ Exercise	Channel Management	Compulsory	60 h (4 CH) 120
4	Module Profile:				
	<p>Purpose of the module/integration into curriculum: This course teaches the fundamentals of an integrated channel management covering communication and distribution channels. Next to strategic aspects of an integrated channel management, we discuss challenges in coordinating multiple channels of communication and distribution. We discuss how channel design and coordination affect firm performance.</p> <p>Course content: Main topics</p> <ul style="list-style-type: none"> • Challenges of integrated channel management • Effectiveness of communication and distribution channels along the customer journey <p>Course objective: It is the objective of this course to enable students to elaborate on the concept of integrated channel management and to discuss the impact of channels on customer behavior and firm performance.</p>				
5	Learning outcomes:				
	<p>Academic: After following the course, you are able to</p> <ul style="list-style-type: none"> • Elaborate on the concept of integrated channel management, • Discuss how firms can create value through an integrated channel management, • Discuss the impact of channels on customer behavior and critical KPIs. <p>Soft skills:</p> <ul style="list-style-type: none"> • Discussions in class improve your problem-solving skills. • Critical discussion of research allows students improving their argumentation and communication skills. • The group work helps students to improve their collaboration and presentation skills. 				
6	Description of possible electives within the modules: none				

7	Examination: Examinations for every part of the module			
8	Relevant Work:			
	No	Number and Type; Connection to Course	Duration	Part of final mark in %
	1	Written assignments and presentations (in group)	2 x 10 pages and und 1 x 15 min.	33 %
	2	Written exam	90 min.	67 %
9	Study Work: none			
10	Prerequisites for Credit Points: The credit points will be granted after all relevant work and study work have been successfully completed.			
11	CP Assignment:			
	Presence (see No 3)	No 1	2.00 CP	
	Relevant Work (see No 8)	No 1	1.50 CP	
		No 2	2.50 CP	
Total		6 CP		
12	Weight of the module grade for the overall grade: 6/120 (5%)			
13	Module Prerequisites: none			
14	Presence: Presence is strongly recommended to warrant learning success.			
15	Mobility/Acknowledgement:			
	Use of the module for other course programs	Master Business Administration		
16	Responsible Lecturer: Prof. Dr. Sonja Gensler		Department: School of Business and Economics	
	17 Misc.:			

Elective Modules (Seminar)

Module Title english:		Elective Modules (Seminar)			
Course Program:		Master Information Systems			
1	Module No: EMSem1-6	State: Elective	Language of Instruction: English		
2	Turn: each semester	Duration: 1 semester	Semester: 1 or 2 or 3 or 4	CP: 6	Workload (h): 180
3	Module Structure:				
	No	Type	Course	State	Workload (h)
					Presence (h + CH) Self-Study (h)
	1	Seminar	Elective Modules	Compulsory	60 h (4 CH) 120
4	Module Profile:				
	<p>Purpose of the module/integration into curriculum: Usually, the topics deepen the Profile of one (or more) of the tracks IM, PM, BN, BI, ISD and LPR. Therefore, knowledge of the Profile of pertaining track(s) is strongly recommended.</p> <p>Course content: The elective seminars deal with topics that arise from recent research. They are usually organized in small groups of students. Each student gives a seminar talk and, to this end, writes a seminar elaboration. Main seminar-topics may change from term to term. To follow recent developments, the topics and, accordingly, the learning objectives are changing from term to term. Examples of earlier topics have been:</p> <ul style="list-style-type: none"> • Structural Model Analysis • Model Visualization - Layout and Perception • Network Evolution • Beautiful Data • ERP systems in industry, retail and supply chains • Information Retrieval • Coordination in Supply Chain Management • Theoretical Computer Science 				
5	Learning outcomes:				
	<p>Academic: The students deepen their knowledge in specific topics.</p> <p>Soft skills: Students improve their skills in acquiring profound scientific knowledge and presentation. Depending on the topic, group working abilities are supported.</p>				
6	Description of possible electives within the modules: Within the electives a minimum of 2 seminars has to be taken.				

7	Examination: Examinations for every part of the module			
8	Relevant Work:			
	No	Number and Type; Connection to Course	Duration	Part of final mark in %
	1	Seminar elaboration (academic paper) and presentation	Ca 20 pages, ca 60 minutes	100 %
9	Study Work: none			
10	Prerequisites for Credit Points: The credit points will be granted after all relevant work and study work have been successfully completed.			
11	CP Assignment:			
	Presence (see No 3)	No 1	2.00 CP	
	Relevant Work (see No 8)	No 1	4.00 CP	
	Total		6 CP	
12	Weight of the module grade for the overall grade: 6/120 (5%)			
13	Module Prerequisites: none			
14	Presence: Presence is strongly recommended to warrant learning success			
15	Mobility/Acknowledgement:			
	Use of the module for other course programs	none		
16	Responsible Lecturer: Prof. Dr. Stefan Klein		Department: School of Business and Economics	
	17 Misc.:			

Selected Chapters in Information Systems

Module Title english:		Selected Chapters in Information Systems			
Course Program:		Master Information Systems			
1	Module No: SCIS 1 - 5	State: Elective	Language of Instruction: English		
2	Turn: irregularly	Duration: 1 semester	Semester: 1 or 2 or 3	CP: 6	Workload (h): 180
3	Module Structure:				
	No	Type	Course	State	Workload (h)
					Presence (h + CH) Self-Study (h)
	1	Lecture	Lecture "Selected Chapters in IS"	Compulsory	30 h (2 CH) 60
2	Exercise	Exercise "Selected Chapters in IS"	Compulsory	30 h (2 CH) 60	
4	<p>Module Profile: Course content: An actual or classical topic extending to the "Methods" or to the "Domains" of Information Systems or being located in the border areas of Information Systems and Computer Science/Mathematics/Business Administration. This Module integrates lectures which are offered only once or at irregular intervals, e.g., by guest lecturers or by other lecturers who are members of the institute only for a limited time. Profile of the lecture are announced in the (electronic) university calendar and are usually introduced during the seminar-presentation which takes place in the preceding term.</p>				
5	<p>Learning outcomes: Academic: The students gain deepened insight into a special topic of Information Systems. They can apply techniques associated with the topic to specific problem settings. Soft skills: The students learn to work with specific scientific literature.</p>				
6	<p>Description of possible electives within the modules: Within the electives a minimum of 2 seminars has to be taken.</p>				
7	Examination: Final Module Exam				
8	Relevant Work:				
	No	Number and Type; Connection to Course	Duration	Part of final mark in %	
	1	Final written exam	up to 120 min.	100 %	

9	Study Work: none	
10	Prerequisites for Credit Points: The credit points will be granted after all relevant work and study work have been successfully completed.	
11	CP Assignment:	
	Presence (see No 3)	No 1 1.00 CP
		No 2 1.00 CP
	Relevant Work (see No 8)	No 1 4.00 CP
	Total	6 CP
12	Weight of the module grade for the overall grade: 6/120 (5%)	
13	Module Prerequisites: none	
14	Presence: Presence is strongly recommended to warrant learning success	
15	Mobility/Acknowledgement:	
	Use of the module for other course programs	none
16	Responsible Lecturer: Prof. Dr. Dr. h.c. Dr. h.c. Jörg Becker, Prof. Dr.-Ing. Bernd Hellingrath, Prof. Dr. Stefan Klein, Prof. Dr. Herbert Kuchen, Prof. Dr. Heike Trautmann, Prof. Dr. Gottfried Vossen	Department: University of Münster School of Business and Economics
	17 Misc.:	

Selected Chapters in Business Administration

Module Title english:		Selected Chapters in Business Administration			
Course Program:		Master Information Systems			
1	Module No: EM-SCBA	State: Elective	Language of Instruction: English		
2	Turn: each semester	Duration: 1 semester	Semester: 1 or 2 or 3 or 4	CP: 6	Workload (h): 180
3	Module Structure:				
	No	Type	Course	State	Workload (h)
					Presence (h + CH) Self-Study (h)
	1	Lecture	Selected Chapters in Business Administration	Compulsory	30 h (2 CH) 60
	2	Exercise	Exercise on Selected Chapters in Business Administration	Compulsory	30 h (2 CH) 60
4	<p>Module Profile: Purpose of the module/integration into curriculum: to be found in the descriptions of the modules mentioned below. Course content: Choosing a 6CP Lecture with Exercises in the “Minor” programs of the Master program of Business Administration offered by the department of Business Administration, namely: “Basis Accounting“, “Basis Finance“, “Basis Management” and “Basis Marketing“ and „Basis Entrepreneurship“ In particular, the following Modules can be studied: ACMo1 Strategic Management Accounting ACMo2 Financial Accounting ACMo3 Internationale Unternehmensbesteuerung ACMo4 Internationales Controlling ACMo7 Unternehmensanalyse und –bewertung ACMo8 Unternehmensbesteuerung I ACMo9 Ausgewählte Kapitel des Accounting I ACM10 Abschlussprüfung ACM11 Spezialfragen der Rechnungslegung nach HGB und IFRS ACM12 Ausgewählte Kapitel des Accounting II ACM13 Performance Management & Strategy Execution ACM14 IFRS und Controlling ACM16 Vertiefungsmodul Internationale Rechnungslegung ACM17 Unternehmensbesteuerung II ACM18 From Data to Insights: Driving Corporate Performance ACM19 Empirical Accounting Research FCMo1 Introduction to Advanced Finance FCMo2 Behavioral Finance FCMo3 Derivatives I</p>				

	<p>FCMo4 Financial Intermediation I FCMo5 Advanced Corporate Finance FCMo6 Advanced Sustainable Finance FCMo7 Derivatives II FCMo8 Entrepreneurial Finance FCM13 Ausgewählte Kapitel Finance I FCM17 Mergers and Acquisitions CfMo3 Governance CfM13 Strategische Analyse CfMo6 Personalökonomik CfMo4 Management II CfMo5 Market- and Resource-Based View of Strategy MCMo5 Innovation Management MCMo6 Brand Management MCMo7 Customer Relationship Management and Direct Marketing MCMo8 Sales Management MCM10 Consumer Behavior MCM12 Entertainment Media Marketing MCM14 Advanced Marketing on Specific Topics I MCM15 Advanced Marketing on Specific Topics II ENT1 Innovation Management (cannot be chosen together with the module MCMo5 Innovation Management) ENT2 Go to Market and Business Development ENT4 Managing Growth: Organizational Design and Financial Management (cannot be chosen together with the following course in the module ACM12 Ausgewählte Kapitel des Accounting II: Managing Growth: Organizational Design and Financial Management Main topics and learning objectives can be found in the descriptions of the above mentioned modules. Preconditions defined for the selected modules have to be obeyed.</p>												
5	<p>Learning outcomes: Academic: To be found in the module descriptions of the Master of Business Administration Soft skills: To be found in the module descriptions of the Master of Business Administration</p>												
6	<p>Description of possible electives within the modules: Within the electives a minimum of 2 seminars has to be taken.</p>												
7	<p>Examination: Examinations for every part of the module</p>												
8	<table border="1"> <thead> <tr> <th colspan="4">Relevant Work:</th> </tr> <tr> <th>No</th> <th>Number and Type; Connection to Course</th> <th>Duration</th> <th>Part of final mark in %</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>See module descriptions within the Master program of the department of Business Administration</td> <td></td> <td></td> </tr> </tbody> </table>	Relevant Work:				No	Number and Type; Connection to Course	Duration	Part of final mark in %	1	See module descriptions within the Master program of the department of Business Administration		
Relevant Work:													
No	Number and Type; Connection to Course	Duration	Part of final mark in %										
1	See module descriptions within the Master program of the department of Business Administration												
9	<p>Study Work: See module descriptions within the Master program of the department of Business Administration</p>												
10	<p>Prerequisites for Credit Points: The credit points will be granted after all relevant work and study work have been successfully completed.</p>												

11	CP Assignment:	
	Presence (see No 3)	No 1 1.00 CP
		No 2 1.00 CP
	Relevant Work (see No 8)	No 1 depending on module
	Study Work (see No 9)	No 1 depending on module
	Total	6 CP
12	Weight of the module grade for the overall grade: 6/120 (5%)	
13	Module Prerequisites: none	
14	Presence: Presence is strongly recommended to warrant learning success	
15	Mobility/Acknowledgement:	
	Use of the module for other course programs	Master of Business Administration
16	Responsible Lecturer: Prof. Dr. Heike Trautmann	Department: School of Business and Economics
	17 Misc.:	

Selected Chapters in Computer Science

Module Title english:		Selected Chapters in Computer Science			
Course Program:		Master Information Systems			
1	Module No: SCCS 1-5	State: Elective	Language of Instruction: English		
2	Turn: each semester	Duration: 1 semester	Semester: 1 or 2 or 3 or 4	CP: 6	Workload (h): 180
3	Module Structure:				
	No	Type	Course	State	Workload (h)
					Presence (h + CH) Self-Study (h)
	1	Lecture	Selected Chapters in Computer Science	Compulsory	30 h (2 CH) 60
	2	Exercise	Exercise on Selected Chapters in Computer Science	Compulsory	30 h (2 CH) 60
4	Module Profile:				
	Purpose of the module/integration into curriculum: Course content can be found in the descriptions of the modules mentioned below.				
5	Course content:				
	Choosing Lecture/Exercise-modules with 6 CP from the Master program of the department of Computer Science. Course content can be found in the descriptions of the above mentioned modules.				
5	Learning outcomes:				
	Academic: to be found in the descriptions of the above mentioned modules				
5	Soft skills: to be found in the descriptions of the above mentioned modules				
6	Description of possible electives within the modules: Within the electives a minimum of 2 seminars has to be taken.				
7	Examination: Final Module Exam				
8	Relevant Work:				
	No	Number and Type; Connection to Course	Duration	Part of final mark in %	
	1	Final written exam	120 min.	100 %	
9	Study Work: none				

10	Prerequisites for Credit Points: The credit points will be granted after all relevant work and study work have been successfully completed.													
11	CP Assignment: <table border="1" data-bbox="220 398 1444 640"> <tr> <td data-bbox="220 398 639 461">Presence (see No 3)</td> <td data-bbox="647 398 1034 461">No 1</td> <td data-bbox="1042 398 1444 461">1.00 CP</td> </tr> <tr> <td data-bbox="220 461 639 524"></td> <td data-bbox="647 461 1034 524">No 2</td> <td data-bbox="1042 461 1444 524">1.00 CP</td> </tr> <tr> <td data-bbox="220 524 639 586">Relevant Work (see No 8)</td> <td data-bbox="647 524 1034 586">No 1</td> <td data-bbox="1042 524 1444 586">4.00 CP</td> </tr> <tr> <td data-bbox="220 586 639 640">Total</td> <td data-bbox="647 586 1034 640"></td> <td data-bbox="1042 586 1444 640">6 CP</td> </tr> </table>		Presence (see No 3)	No 1	1.00 CP		No 2	1.00 CP	Relevant Work (see No 8)	No 1	4.00 CP	Total		6 CP
Presence (see No 3)	No 1	1.00 CP												
	No 2	1.00 CP												
Relevant Work (see No 8)	No 1	4.00 CP												
Total		6 CP												
12	Weight of the module grade for the overall grade: 6/120 (5%)													
13	Module Prerequisites: none													
14	Presence: Presence is strongly recommended to warrant learning success													
15	Mobility/Acknowledgement: <table border="1" data-bbox="220 1077 1444 1144"> <tr> <td data-bbox="220 1077 834 1144">Use of the module for other course programs</td> <td data-bbox="842 1077 1444 1144">Master of Computer Science</td> </tr> </table>		Use of the module for other course programs	Master of Computer Science										
Use of the module for other course programs	Master of Computer Science													
16	Responsible Lecturer: Prof. Dr. Heike Trautmann	Department: School of Business and Economics												
17	Misc.:													

Project Seminar

Module Title english:		Project Seminar			
Course Program:		Master Information Systems			
1	Module No: PS	State: Compulsory	Language of Instruction: English		
2	Turn: each semester	Duration: 1 semester	Semester: 3 or 4	CP: 12	Workload (h): 360
3	Module Structure:				
	No	Type	Course	State	Workload (h)
					Presence (h + CH) Self-Study (h)
	1	Project Seminar	Project Seminar	Compulsory	120 h (8 CH) 240
4	Module Profile:				
	Purpose of the module/integration into curriculum:				
	The material and methods that were introduced in former Tracks IM, PM, BN, BI, ISD and/or LPR will be applied in a practice-oriented project to solve a realistic, complex problem. The project is often performed in collaboration with a partner from industry. The experience gained in the project seminar can be helpful for the Master thesis.				
	Course content:				
	The material and methods learned in previous courses are applied in a practice-oriented project with topics varying from term to term. In particular teamwork, project planning and management, development of a business concept, design of a corresponding software architecture, implementation, and testing will be trained. Moreover, the intermediate and final results of the project will be presented using state-of-the-art tools. The participants also have to read relevant literature and describe required concepts in papers. The students are supported in all these activities by tutors.				
	Themes	Learning objectives			
Writing scientific papers	Read and understand scientific literature. Describe the read material well-structured, understandably, and precisely in own words in a paper				
Presentation	Present the material described in the paper orally using state-of-the-art tools (such as e.g. Powerpoint) in a well-structured, understandable, and precise way.				
Project work	Solve a realistic task in a project team.				
Project management	Manage a project taking into account limited time and resources. Divide a complex task into activities and assign them to team members. Coordinate the activities in the project.				

5	<p>Learning outcomes: Academic: The students learn to apply theoretical concepts in a practical environment given by a specific (e.g. industrial) project. Soft skills: Students learn to realize a project in a team. They acquire several soft skills, e.g. in presentations, writing of scientific texts, and collaboration in teams as well as media competence.</p>											
6	<p>Description of possible electives within the modules: none</p>											
7	<p>Examination: Final Module Exam</p>											
8	<p>Relevant Work:</p> <table border="1" data-bbox="209 730 1441 976"> <thead> <tr> <th data-bbox="209 730 280 824">No</th> <th data-bbox="285 730 1002 824">Number and Type; Connection to Course</th> <th data-bbox="1007 730 1246 824">Duration</th> <th data-bbox="1251 730 1441 824">Part of final mark in %</th> </tr> </thead> <tbody> <tr> <td data-bbox="209 831 280 976">1</td> <td data-bbox="285 831 1002 976">Portfolio: Project documentation, seminar thesis, and - following documentation and thesis - 2 intermediate and 1 final presentation</td> <td data-bbox="1007 831 1246 976">30 pages, ca 20 pages, ca. 90 min</td> <td data-bbox="1251 831 1441 976">100 %</td> </tr> </tbody> </table>			No	Number and Type; Connection to Course	Duration	Part of final mark in %	1	Portfolio: Project documentation, seminar thesis, and - following documentation and thesis - 2 intermediate and 1 final presentation	30 pages, ca 20 pages, ca. 90 min	100 %	
No	Number and Type; Connection to Course	Duration	Part of final mark in %									
1	Portfolio: Project documentation, seminar thesis, and - following documentation and thesis - 2 intermediate and 1 final presentation	30 pages, ca 20 pages, ca. 90 min	100 %									
9	<p>Study Work: none</p>											
10	<p>Prerequisites for Credit Points: The credit points will be granted after all relevant work and study work have been successfully completed.</p>											
11	<p>CP Assignment:</p> <table border="1" data-bbox="209 1290 1441 1480"> <tbody> <tr> <td data-bbox="209 1290 639 1350">Presence (see No 3)</td> <td data-bbox="644 1290 1034 1350">No 1</td> <td data-bbox="1038 1290 1441 1350">4.00 CP</td> </tr> <tr> <td data-bbox="209 1357 639 1417">Relevant Work (see No 8)</td> <td data-bbox="644 1357 1034 1417">No 1</td> <td data-bbox="1038 1357 1441 1417">8.00 CP</td> </tr> <tr> <td data-bbox="209 1424 639 1480">Total</td> <td data-bbox="644 1424 1034 1480"></td> <td data-bbox="1038 1424 1441 1480">12 CP</td> </tr> </tbody> </table>			Presence (see No 3)	No 1	4.00 CP	Relevant Work (see No 8)	No 1	8.00 CP	Total		12 CP
Presence (see No 3)	No 1	4.00 CP										
Relevant Work (see No 8)	No 1	8.00 CP										
Total		12 CP										
12	<p>Weight of the module grade for the overall grade: 10% (12 of 120 CP)</p>											
13	<p>Module Prerequisites: Concrete Project Seminars may require certain modules from IM, PM, BN, ISD, BI and/or LPR.</p>											
14	<p>Presence: Presence is strongly recommended to warrant learning success during project work and is required during presentations. As the required work can only be assessed, when all participants are present during presentations, an absence is not possible. If absent, the seminar has to be repeated.</p>											
15	<p>Mobility/Acknowledgement:</p>											

	Use of the module for other course programs none	
16	Responsible Lecturer: Prof. Dr. Heike Trautmann	Department: School of Business and Economics
17	Misc.:	

Master's Thesis

Module Title english:		Master's Thesis			
Course Program:		Master Information Systems			
1	Module No: MT	State: Compulsory	Language of Instruction: English		
2	Turn: each semester	Duration: 1 semester	Semester: 3 or 4	CP: 30	Workload (h): 900
3	Module Structure:				
	No	Type	Course	State	Workload (h)
					Presence (h + CH)
					Self-Study (h)
	1		Writing the thesis	Compulsory	0 h (0 CH)
2		Thesis defense	Compulsory	0 h (0 CH)	60
3	Exercise	Research methods	Compulsory	30 h (2 CH)	60
4	Module Profile:				
	Purpose of the module/integration into curriculum: The master thesis is written in the research context of one of the method tracks IM, PM, BN, BI and/or ISD.				
4	Course content:				
	Those are subject to the topic and area where the thesis is intended. The thesis defense covers the thesis' topic. With his/her master's thesis, a student is supposed to prove his/her ability to take part in the scientific process by doing a small piece of research and write an appropriate paper on it. The thesis should have a length of approximately 80 pages. The thesis defense contains a presentation of the thesis' Profile as well as a discussion.				
5	Learning outcomes:				
	Academic: The student can handle a research topic in a scientific way and apply the results to practical problems. He or she can present and defend approaches, underlying theory and results.				
5	Soft skills:				
	The student can handle the formal requirements associated to a research paper: investigating the research context, collecting material from the scientific literature, performing and processing bibliographical inquiries, presenting own ideas in the scientific environment of the given topic.				
6	Description of possible electives within the modules: none				
7	Examination: Final Module Exam				
8	Relevant Work:				

	No	Number and Type; Connection to Course	Duration	Part of final mark in %
	1	Master´s thesis		100 %
9	Study Work:			
	No	Number and Type; Connection to Course	Duration	
	1	Thesis defense (oral)	max. 1h	
10	Prerequisites for Credit Points: The credit points will be granted after all relevant work and study work have been successfully completed.			
11	CP Assignment:			
		No 1	0.00 CP	
	Presence (see No 3)	No 2	0.00 CP	
		No 3	1.00 CP	
	Relevant Work (see No 8)	No 1	27.00 CP	
	Study Work (see No 9)	No 1	2.00 CP	
	Total		30 CP	
12	Weight of the module grade for the overall grade: 30/120 (25%)			
13	Module Prerequisites: 60 credit points.			
14	Presence: Presence is strongly recommended to warrant learning success			
15	Mobility/Acknowledgement:			
	Use of the module for other course programs	none		
16	Responsible Lecturer: Prof. Dr. Heike Trautmann		Department: School of Business and Economics	
17	Misc.:			