

# **Module Descriptions**

Module Descriptions of the Bachelor of Science in Information Systems of the University of Münster for students studying according to the examination rules from 2022 (PO 2022) valid from winter semester 2022/23



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# Study Plan

Semester	Credits	IS	Computer Science	Quantitative Methods	Business/Economics
0			Pre-study course: Programming	Pre-study course: Mathematics (WWU)	
1	30	Introduction to IS (3)	Programming (9)	Mathematics for IS (9)	Introduction to Business Administration, Fundamentals of Finance (9)
2	30	Data Management (6) Scientific Work & Ethics in IS (3)	Data Structures and Algorithms (9)	Operations Research (6)	Foundations of Accounting (6)
3	30	Business Process Management (6) IT-Law (6)	Software Engineering (6)	Data & Probability (6)	Operations Management (6)
4	30	Digital Work & Project Management (6)	IT-Systems (6)	System Analysis & Probability (6) Data Analysis	
			Seminar 1 (6)		
5	30	Digital Business (6) IT-driven Innovation (6)			Introduction to Economics for IS (6)
			Seminar 2 (6)		
		Elective (Approve	d Internship or Selecte Selected Chaptrs in	ed Topics in Business / Computer Science (6)	Adminisration odr
6	30		Security of Distributed Systems (6)		
			Projekt Seminar (12) Bachelor Thesis (12)		

Мос	dule Ti	le english:	english: Introduction to Information Systems						
Cou	rse Pro	Description     State     Computering							
1 Module No: WI1				State: Compulsory	Language of Instruction: German or English			lish	
2	<b>Turn:</b> each winter semester			Duration: 2 semesters	Semester: 1 CP: 6 Workload (h): 180			<b>1):</b> 180	
	Module Structure:								
	No	Туре	Co	urse		State	Workload (h	Workload (h)	
3							Presence (h + CH)	Self- Study (h)	
	1	Lecture	Int	roduction to Informatior	I Systems	Compulsory	30 h (2 CH)	60	
	2	Lecture	Sci	entific Work		Compulsory	15 h (1 CH)	30	
	3	Lecture	Eth	ics in Information Syste	ms	Compulsory	15 h (1 CH)	30	
4	Back The n discip Main In the Instit the re future lectu mana taugh The s inform	ground and r nodule serve bline and for topics and lo first part of ute of Inform espective me courses offor res. Reflection gement vis-à the basics ubsequent c nation techn	elat s as ms t earn the i atio thoc ered ns s à-vis of so ours olog	ions to other courses: an introduction to inform he basis for all other mo- ing objectives: module, a lecture series in Systems present their is used. They provide ar in the program. These a erve as an early examin- the course of study. In the cientific work in order to e enables students to u gies and to place them in	mation systems odules within th is held in which specific views of outlook on how ation of one's o the second part prepare them f nderstand socia	as an interd e bachelor's h the subject on informatic w these subject y assignment wn interests of the modu for future sen al and ethica	isciplinary scie program. representativ n systems as ect areas relate s accompanyi and expectation le, students and inar papers a dimensions of systems.	entific es of the well as e to other ng the on re first nd theses. of	
5	Learr Acad The c envir lectu vario neces critica Soft s The e of sel prese the s	ing outcome emic: ompetencies onment throu res. The stud us areas of ir ssary for the ally on the in <b>skills:</b> xercises acco f and time mentation tech tudy. Further	es: acculation and anagents an	uired in this module en the overview of the dive are already familiar wit nation systems. In addit paration and writing of so nce of information techn anying the lectures lead gement methods. Throu les as well as the preser e, social and communica	able students to rsity of informat h initial scientif ion, the studen cientific texts. T tologies on the to the ability o gh the obligato tation in front o ation skills are o	o orient them tion systems tic and practi ts have meth he students various areas f self-reflection f self-reflection f larger grou developed th	selves in this provided in th cal methods fr odological kn are able to refl s of life in soci on and the app on, the use of ps is practiced rough collabo	e om the owledge lect ety. olication d early in rations.	

# Introduction to Information Systems

6	Description of possible electives within the modules:         none         Examination:       Examinations for every part of the module									
7	Examination: Examinations for every part of the module Relevant Work: none									
8	Relevant Work: none									
	Study Work:									
9	No	Number and Type; Connect	Duration							
	1	Exercise accompanying lec	approx. 12 pages							
	2	2 Reflections accompanyin	approx. 1000 words							
	3	Final presentation (lecture	1)		approx. 10 slides					
	4	Exercise accompanying lec	tures 2,3		approx. 25 pages					
10	Prere The c comp	equisites for Credit Points: credit points will be granted pleted.	after all relevant wor	k and study work	have been successfully					
	CP A	ssignment:								
			No 1	1.00	оСР					
11	Pres	sence	No 2 0.50		o CP					
			No 3 0.50		o CP					
11			No 1	1.00	o CP					
	Stud	lv Work	No 2 1.00		o CP					
		, , , , , , , , , , , , , , , , , , ,	No 3	1.00	o CP					
			No 4 1.00		o CP					
	Tota	ıl		6 C	P					
12	Weig o %	tht of the module grade for t	he overall grade:							
13	<b>Mod</b> none	ule Prerequisites:								
14	Prese Atter visit, throu	ence: Idance during the excursion getting to know the work ar ugh participation.	is required, since the ea of an information	e intended learni systems speciali	ng objectives (company st) can only be achieved					
	Mob	ility/Acknowledgement:								
15	Use	of the module for other cou	rse programs	none						
				No 1: Introducti	on to Information Systems					

	English translation of module components from section 3	No 2: Scientific Work No 3: Ethics in Information Systems		
16	<b>Responsible Lecturer:</b> Dr. Katrin Bergener, Dr. Armin Stein	<b>Department:</b> University of Münster, School of Business and Economics		
17	Misc.:			

# Programming

Module Title english:				Programming					
Course Program:				Bachelor Information	Systems				
Course Program:         1         Module No: Inf1				State: Compulsory	Language of Instruction: German or English			sh	
2	<b>Turn:</b> each winter semester			Duration: 1 semester	Semester: 1 CP: 9 Workload (h): 270			<b>):</b> 270	
	Module Structure:								
3	No	Туре	Cou	urse		State	tate Workload (h)		
							Presence (h + CH)	Self- Study (h)	
	1	Lecture	Pro	gramming		Compulsory	60 h (4 CH)	60	
	2	Exercise	Exe	ercises on Programming		Compulsory	30 h (2 CH)	120	
4	Modu Backy There sever semin Main This of techn pract progr and o are ex attrib recur Swing types progr types opera The g and t There	ale Contents: ground and r are no prere al other cour- nar and (in m topics and le course introd iques. The s- ical program amming in Ja operational se- typlained: ove utes, variabl sion, arrays, g), inner clas , JUnit, file h- amming prin , pattern ma- tional seman oal is that th hat they get se mes	elati equis ses : any earni uces tude ming iva a emal ervie es, c inhe es, c inhe es, c inhe es, c inhe ses, and ciple tchir ntics some t t	ites for this courses: sites for this course. The such as e.g. software er cases) for the bachelor ing objectives: a the main concepts of p nts not only get a theory skills through the exer is well as declarative pro- ntics of these languages w of programming langu- class diagrams, visibility eritance, late binding, in exception handling, get ing, garbage collection, es, stepwise refinement og, type inference, highe is strict vs. non-strict op- udents learn the main p e programming experier	e conveyed prog ngineering. More thesis. programming lar etical understan cises. The cours ogramming in (e s is formally des uages landscape y, types, stateme terfaces, graphi nerics, wrapping applets, thread ; declarative lan er-order functior erations, progra rogramming cor nce through the	ramming skill eover, they ard nguages and p iding of the co e covers objec e.g.) Haskell. <i>I</i> cribed. In det e; Java: objec ents, expressi cal user interf g of basic valu s, synchroniz nguage (e.g. H ins, Currying, la m translation icepts and pro accompanyin	s are required e needed in the programming oncepts but al ct oriented Moreover, the fail the following ts, classes, m fons, method faces, framework (aces, framework) faces, framework (aces, framework) faces, framework) faces, framework (aces, framework) faces, framework) faces, framework (aces, framework) faces, faces, fac	l in he project so gain syntax ing topics ethods, calls, orks (e.g. corks (e.g. cion raic data code. chniques	
	Prog tech	ramming niques	T a	o understand the progr appropriately in practica	amming technic Il software deve	ques and to b lopment. To b	e able to appl e able to tran	y them sform a	

			textual spec implementa	ification of a small   tion. To get some fir	program or m st experience	odule e with	e into a running team work.		
	Sem prog lang	mantics of To deepen the understanding of the programming concepts and to get used to and appreciate formal methods.							
5	<ul> <li>Learning outcomes:</li> <li>Academic:</li> <li>Students shall master the programming in the small, i.e. the implementation of a specification of a program or module.</li> <li>Soft skills:</li> <li>In the exercises the students cooperate in small groups of students (e.g. 3). This strengthens their ability to work in a team.</li> </ul>								
6	<b>Desc</b> none	ription of possi	ble electives	within the modules	:				
7	Exam	nination: Final N	Module Exam						
8	Relev No	vant Work: Number and Ty	/pe; Connecti	on to Course	Duration		Part of final mark in %		
	1	Written exam			120 min.		100 %		
	Stud	Study Work:							
9	No	Number and Ty	/pe; Connecti	on to Course	Duration				
	1	Exercises		1		max 60 pages			
10	<b>Prere</b> The c comp	equisites for Cre credit points will pleted.	e <b>dit Points:</b> I be granted a	fter all relevant wor	k and study v	vork ł	nave been successfully		
	CP As	ssignment:							
	Pres	sence		No 1		2.00	СР		
11				No 2		1.00	СР		
	Rele	evant Work		No 1		4.50	СР		
	Stuc	ly Work		No 1		1.50	CP		
	Tota	ıl				9 CP			
12	<b>Weig</b> 5.17%	t <b>ht of the modul</b> 6 (9 of 174 CP)	e grade for th	ie overall grade:					
13	<b>Mod</b> none	ule Prerequisite	5:						

14	Presence: Presence is strongly recommended to warrant learning success						
	Mobility/Acknowledgement:						
15	Use of the module for other course programs	none					
	English translation of module components from	No 1: Programming					
	section 3	No 2: Exercises on Programming					
16	Responsible Lecturer: Prof. Dr. Herbert Kuchen	<b>Department:</b> School of Business and Economics					
17	Misc.:						

### Mathematics for IS

Module Title english:				Mathematics for IS				
Course Program:				Bachelor Information	Systems			
1   Module No: QM1				State: Compulsory	Language of Instruction: German or English			sh
2	<b>Turn:</b> each winter semester			Duration: 1 semester	Semester: 1 CP: 9 Workload (h)		<b>):</b> 270	
	Module Structure:							
	No	Туре	Cοι	urse		State	Workload (h	)
3							Presence (h + CH)	Self- Study (h)
	1	Lecture	Cal	culus for B&E		Compulsory	30 h (2 CH)	60
	2	Lecture	Lin	ear Algebra for B&E		Compulsory	15 h (1 CH)	30
	3	Exercise	Tut	orial on Mathematics fo	r B&E	Compulsory	45 h (3 CH)	90
	Math Math Finan partic briefl on th <b>Main</b> Ther	ematics are fu ematical skill ace. There are cular different y repeated in e lecture-topi <b>topics and le</b> nes	unda s are no p ial a the cs ir <b>arni</b>	amental in every kind of e essentially needed, e. prerequisites except a t and integral calculus for Adjustment course). Th n small groups guided b ing objectives:	<sup>4</sup> quantitative st g., in Statistics, horough knowle functions of on e tutorial offers by experienced s	udy of busine , Operations M edge of schoo ne variable (wl all students t students.	ss and econo Aanagement a I mathematics nich, however he opportunit	mics. and 5, in 7, will be ay to work
4	Calculus in one To variable pa			refresh and adapt school knowledge of functions of one variable, in Inticular differential and integral calculus. To apply this knowledge to troductory quantitative economical questions.				
	Syst Equa	ems of Linear ations	To va op	understand how to tran riables into systems of otimal solutions.	nslate linear de linear equation	pendencies bo s and how to s	etween econo solve them. To	mical o find
	Vect Oper Vect	ors and rations with ors	To to co	e learn how to mathematize economic profiles by means of vectors and how do and interpret elementary operations with vectors, such as linear ombinations and projections.				and how ar
	Matr Oper Matr	ices and rations with ices	To be pr ma ec	use matrices as mathe etween groups of econo oducts of matrices, mat atrices and to understa conomics.	matical models mical variables. rix inverses, de nd how these op	of linear ecor To do basic o terminants an perations are	nomical mapp operations suc d eigenvalue: used in quant	ings ch as s of itative

SeriesTo characterize economical series by means of implicit and explicit To sum up finite and infinite series. To understand the interrelation power series and functions of one variable. To make use of the get series in financial mathematics.DifferentialTo understand how functions of several variables are used in quar	it formulas. n between						
Differential To understand how functions of several variables are used in quar	ometric						
Differential CalculusTo understand how functions of several variables are used in quantitative economics. To learn the role of partial/directed/total derivatives as tools describing variational properties of those functions. To use implicit 							
Nonlinear OptimizationTo use derivatives of functions in optimization of economically motivated differentiable functions. To understand the treatment of differentiable restrictions in optimization (Lagrange-method). Finally, to investigate the influence of exogenous variables on the optimal solution.							
<ul> <li>Learning outcomes:         <ul> <li>Academic:</li> <li>the student should demonstrate the ability</li> <li>to do mathematical calculations such as optimizations and solutions of economical equations which are necessary in further economical analyses.</li> <li>to mathematize economical problems, that is find mathematical structure in those problems</li> </ul> </li> <li>Soft skills:         <ul> <li>Reading and understanding formal texts (like mathematical formulas in economics), Working in small groups (self study) in order to solve mathematical problems, Presentation Skills (when</li> </ul> </li> </ul>							
<ul> <li>For the mathematical problems, that is find mathematical structure in the problems</li> <li>Soft skills: Reading and understanding formal texts (like mathematical formulas in economics), W small groups (self study) in order to solve mathematical problems, Presentation Skills visiting the tutorial)</li> </ul>	Vorking in (when						
<ul> <li>6 To mathematize economical problems, that is find mathematical structure in the problems</li> <li>Soft skills: Reading and understanding formal texts (like mathematical formulas in economics), We small groups (self study) in order to solve mathematical problems, Presentation Skills visiting the tutorial)</li> <li>6 Description of possible electives within the modules: none</li> </ul>	Vorking in (when						
<ul> <li>6 To mathematize economical problems, that is find mathematical structure in the problems</li> <li>Soft skills: Reading and understanding formal texts (like mathematical formulas in economics), W small groups (self study) in order to solve mathematical problems, Presentation Skills visiting the tutorial)</li> <li>6 Description of possible electives within the modules: none</li> <li>7 Examination: Final Module Exam</li> </ul>	Vorking in (when						
<ul> <li>6 To mathematize economical problems, that is find mathematical structure in the problems</li> <li>Soft skills: Reading and understanding formal texts (like mathematical formulas in economics), We small groups (self study) in order to solve mathematical problems, Presentation Skills visiting the tutorial)</li> <li>6 Description of possible electives within the modules: none</li> <li>7 Examination: Final Module Exam</li> <li>Relevant Work:</li> </ul>	Vorking in (when						
5       • To mathematize economical problems, that is find mathematical structure in the problems         Soft skills:       Reading and understanding formal texts (like mathematical formulas in economics), W small groups (self study) in order to solve mathematical problems, Presentation Skills visiting the tutorial)         6       Description of possible electives within the modules: none         7       Examination: Final Module Exam         8       No       Number and Type; Connection to Course       Duration       Part of final mathematical problems	Vorking in (when						
5       • To mathematize economical problems, that is find mathematical structure in the problems         Soft skills:       Reading and understanding formal texts (like mathematical formulas in economics), W small groups (self study) in order to solve mathematical problems, Presentation Skills visiting the tutorial)         6       Description of possible electives within the modules: none         7       Examination: Final Module Exam         8       Relevant Work: No Number and Type; Connection to Course         90 min.       100 %	Vorking in (when						
<ul> <li>I a to mathematize economical problems, that is find mathematical structure in the problems</li> <li>Soft skills: Reading and understanding formal texts (like mathematical formulas in economics), W small groups (self study) in order to solve mathematical problems, Presentation Skills visiting the tutorial)</li> <li>Bescription of possible electives within the modules: none</li> <li>Examination: Final Module Exam</li> <li>Relevant Work: No Number and Type; Connection to Course Duration Part of final none</li> <li>Electronic exam</li> <li>Study Work:</li> </ul>	Vorking in (when						
5       • To mathematize economical problems, that is find mathematical structure in the problems         Soft skills:       Reading and understanding formal texts (like mathematical formulas in economics), W small groups (self study) in order to solve mathematical problems, Presentation Skills visiting the tutorial)         6       Description of possible electives within the modules: none         7       Examination: Final Module Exam         8       No       Number and Type; Connection to Course       Duration         1       Electronic exam       90 min.       100 %	Vorking in (when mark in %						
<ul> <li>Soft skills: Reading and understanding formal texts (like mathematical formulas in economics), W small groups (self study) in order to solve mathematical problems, Presentation Skills visiting the tutorial)</li> <li>Bescription of possible electives within the modules: none</li> <li>Realevant Work: No</li> <li>Number and Type; Connection to Course</li> <li>Juration</li> <li>Juration</li> <li>I electronic exam</li> <li>Study Work: No</li> <li>Number and Type; Connection to Course</li> <li>Juration</li> <li>Juration</li> <li>I exercises</li> <li>I for the page of the text of text of the text of the text of text of</li></ul>	Vorking in (when mark in %						
<ul> <li>5 To mathematize economical problems, that is find mathematical structure in the problems</li> <li>Soft skills: Reading and understanding formal texts (like mathematical formulas in economics), W small groups (self study) in order to solve mathematical problems, Presentation Skills visiting the tutorial)</li> <li>6 Description of possible electives within the modules: none</li> <li>7 Examination: Final Module Exam</li> <li>8 No Number and Type; Connection to Course Duration Part of final n</li> <li>1 Electronic exam 90 min.</li> <li>100 %</li> <li>9 Study Work: Duration 100 %</li> <li>1 Exercises in total a maxim pages</li> <li>100 %</li> </ul>	Vorking in (when nark in %						
5       • To mathematize economical problems, that is find mathematical structure in the problems         9       Soft skills:         8       Reading and understanding formal texts (like mathematical formulas in economics), W small groups (self study) in order to solve mathematical problems, Presentation Skills visiting the tutorial)         6       Description of possible electives within the modules: none         7       Examination: Final Module Exam         8       Relevant Work: No         9       No       Number and Type; Connection to Course       Duration         1       Electronic exam       90 min.       100 %         9       Study Work: No       Number and Type; Connection to Course       Duration         1       Electronic exam       90 min.       100 %         1       Exercises       in total a maxin pages         10       Exercises for Credit Points:       The credit points will be granted after all relevant work and study work have been succ completed.         CP Assignment:	Vorking in (when mark in % num of 45 cessfully						
5       • to mathematize economical problems, that is indimathematical structure in the problems         Soft skills:       Reading and understanding formal texts (like mathematical formulas in economics), W small groups (self study) in order to solve mathematical problems, Presentation Skills visiting the tutorial)         6       Description of possible electives within the modules: none         7       Examination: Final Module Exam         8       Relevant Work: No         9       Number and Type; Connection to Course       Duration         1       Electronic exam       90 min.       100 %         9       Study Work: No       Number and Type; Connection to Course       Duration         1       Exercises       in total a maxin pages         10       Prerequisites for Credit Points: The credit points will be granted after all relevant work and study work have been succompleted.         CP Assignment:	Vorking in (when mark in % num of 45 cessfully						

		No 3		1.50 CP				
	Relevant Work	No 1		4.00 CP				
	Study Work	No 1		2.00 CP				
	Total			9 CP				
12	Weight of the module grade for the overall grade: 5.17% (9 of 174 CP)							
13	Module Prerequisites: none							
14	<b>Presence:</b> Presence is strongly recommende	d to warrant learnin	g success					
	Mobility/Acknowledgement:							
45	Use of the module for other cour	se programs	Bachelor Business Administration, Bachelor Economics					
15	The Mark Constant of the Constant of	1 - <b>C</b>	No 1: Calculus for B&E					
	English translation of module co section 3	mponents from	No 2: Linear Algebra for B&E					
	-		No 3: Tutorial on Mathematics for B&E					
16	<b>Responsible Lecturer:</b> Dr. Ingolf Terveer, Prof. Dr. Heike 1	Frautmann	<b>Department:</b> Münster School of Business and Economics					
17	Misc.: It is strongly recommended to work on the course-topics continuously as they build upon each other during the whole course. An application to the tutorial is necessary, as the number of participants per (parallel) group is limited. For lecture and refreshment course, no application is needed. For successful work in the tutorial, a thorough recapitulation of lecture contents is strictly necessary. Therefore, the self-study-workload of the lecture and the tutorial cannot be strictly separated from each other.							

# Introduction to Business Administration, Fundamentals of Finance

Мос	dule Ti	tle english:	Introduction to Busine	ess Administration,	Fundamen	Itals	of Finance	
Course Program:			Bachelor Information Systems					
1	Modu	ule No: BWL1	State: Compulsory Language of Instruction: German or English					l
2	<b>Turn:</b> each winter semester		Duration: 1 semester	Semester: 1 CP: 9 Workload (h)		rkload (h):	: 270	
	Modu	le Structure:						
	No	Туре	Course	State		Workload	(h)	
							Presence (h + CH)	Self- Study (h)
3	1	Lecture	Fundamentals of Inve	Fundamentals of Investments			15 h (1 CH)	30
	2	Lecture	Fundamentals of Cor	Compuls	sory	15 h (1 CH)	30	
	3	Exercise	Tutorial Fundamentals of Finance		Compuls	sory	30 h (2 CH)	60
	4	Lecture/ Exercise	Introduction to Busin	Introduction to Business Administration		sory	30 h (2 CH)	60

#### Module Contents:

#### Background and relations to other courses:

The module consists of two parts, namely an introduction to business administration the finance and investment part. It is the base for further business and economics modules. In the finance area it is the first of two introductory finance courses. The students know the basics of business administration and now learn how to deal with investment and financing decisions. They are introduced to the main concepts in finance; the module lays the foundation for more detailed analyses of the financial decisions of investors and companies in subsequent courses.

#### Main topics and learning objectives:

In the introductory business administration part, coordination via markets and hierarchies is first discussed on the basis of institutional economics. Then, the various business functions in companies are presented. References to microeconomics are repeatedly made. Important topics also include corporate governance, financial markets, how companies trade in markets, and corporate social responsibility. The special challenges for companies arising from digitalization will be included. The module further covers the fundamentals of finance. Its focus is on investment and financing decisions. It provides the microeconomic foundations of rational investment decision making. Students learn the most important valuation methods to evaluate investment decisions and apply them to practical problems. A particular emphasis is given to the net present value method. In addition, the module discusses the pricing of stocks and bonds. It also discusses the financing of companies with equity and debt and discusses the basic principles of capital structure.

5	<ul> <li>Learning outcomes:</li> <li>Academic:</li> <li>The module provides a broad overview about the core areas in business management. The students know the basic concepts and methods in finance. They are able to make decisions on investment projects. They are able to identify, discuss and judge the main ways to raise capital. They know the basics of pricing stocks and bonds. They are able to apply the concepts to qualitative and quantitative problems. They are also able to discuss ethical problems related to finance.</li> <li>Soft skills:</li> <li>The students acquire the knowledge through a combination of lecture, preparation and follow-up on the lecture material, and tutorials. They are guided to search for information on their own, using various sources including library, journals, internet, etc. The solution of the exercises is actively discussed and moderated in tutorials. The students can solve basic problems in finance and justify their solutions. They can apply theoretical concepts to solve practical problems. Furthermore, they are able to participate in the public and political discussions on finance related to pics.</li> </ul>					
6	<b>Desc</b> none	ription of possible electives	within the modules:			
7	Exam	ination: Examinations for ev	very part of the modul	e		
	Relev No	vant Work: Number and Type; Connecti	Duration		Part of final mark in %	
8	1	Written exam on Introductio Administration No. 1)	n to Business	60 min.		33.3 %
	2	Written exam on Finance and	d Investment (No. 2)	2) 90 min.		66.7 %
9	Stud	<b>y Work:</b> none				
10	Prere The c comp	equisites for Credit Points: redit points will be granted a pleted.	fter all relevant work	and study v	vork ha	ve been successfully
	CP A	ssignment:				
			No 1		0.50 CP	
	Pres	sence	No 2		0.50 Cl	D
11	1103		No 3		1.00 CP	
			No 4		1.00 CP	
	Rele	evant Work	No 1		2.00 Cl	P
	-		N0 2		4.00 Cl	
	Iota				9 (7	
12	Weight of the module grade for the overall grade: 5.17% (9 of 174 CP)					

13	Module Prerequisites: none						
14	<b>Presence:</b> Presence is strongly recommended to warrant learning success.						
	Mobility/Acknowledgement:						
	Use of the module for other course programs	Bachelor Economics					
		No 1: Fundamentals of Investments					
15	English translation of module components from	No 2: Fundamentals of Corporate Finance					
	section 3	No 3: Tutorial Fundamentals of Finance					
		No 4: Introduction to Business Administration					
16	<b>Responsible Lecturer:</b> Prof. Dr. Nicole Branger, Professor Dr. Peter Kajüter, Prof. Dr. Andreas Pfingsten, Professor Dr. Christoph Watrin	<b>Department:</b> Münster School of Business and Economics					
17	Misc.:						

### Data Management

Module Title english:			Da	Data Management					
Course Program:			Ва	Bachelor Information Systems					
1	Module No: WI2			tate: Compulsory	Language of I	nstruction: G	erman or Engl	lish	
2	<b>Turn:</b> seme	each summe ster	er Di se	e <b>uration:</b> 1 emester	Semester: 2	<b>CP:</b> 6	Workload (h	Workload (h): 180	
	Modu	le Structure:	:						
	No	Туре	Course	9		State	Workload (h	)	
3							Presence (h + CH)	Self- Study (h)	
	1	Lecture	Data M	lanagement		Compulsory	30 h (2 CH)	60	
	2	Exercise	Tutoria	Il Data Management		Compulsory	30 h (2 CH)	60	
4	Backs A suit critica modu die W syste forms stude proce Main The s syste imple data of types speci At the relation Struct Contr the th lockin depth (poss exerc relation their of the s	ground and r able concept al success fac- le Datenmar irtschaftsinforms becomes the necessa of the necessa of t	elations tual desi ctors for agemen ormatik, the focu- ny basis a compre- l, and im earning on to meth so, the t re invest guage co ed relatic eneralizat ssing des ifth norm anguage and Qua- e worked to ensure he field scientifi se studie se systen	<b>to other courses:</b> ign, data-processing the implementation at builds on prelimin where the data view us of consideration. If for many other mode consideration of the objectives: hodologically design three levels of conce tigated successively. onstructs of the enti- onship types, cardina- ations, hierarchies/h sign level, the relation nal forms). At the im- ge (SQL) (Data Descri- iery Language); NoSC d out. Transaction co- e data consistency in- of database manage ic or practical guest less m. As part of the exer- learning objective	g design, and im of application ary conceptual of the architect On the other ha ules, in particu gical knowledge data view. and implemen ptual design, d . The conceptual ty-relationship alities in the mi peterarchies, mo onal data mode plementation le plementation le plion Language QL aspects are of oncepts (ACID) a n multi-user enve ement systems lectures). Applic e management rcises, the stud	aplementation systems. On t aspects of the ture of integra nd, the modul lar with regard e about conce t the data view ata-processin al design is ba model (entity n-max notation odeling of Dat l is investigate evel, the focus butlined. The and locking m vironments are (e.g., Data Wa ed teaching m system MySC ents will give	n of database the one hand, e module Einf ated informat le Datenman d to data mod eptual design, w of informati g design, and used on the m types, relatio on, a Warehouse ed (mathema is on the use ulation Langu relationships techanisms (t e covered. So arehousing) a tethods are le QL or a similar short present	s are the cubrung in ion agement leling. The data- ion deling of nship systems). tical e of age, Data between wo-phase me in- re taught ectures, cations of	
	Then	nes		Learning objectiv	ves				

	Conceptual designTo model business requirements regarding the data of information systems using entity relationship models.							
	Data-processing designTo transform the conceptual design into relational data models; to apply normal forms of database design.							
	ImplementationTo implement the conceptual and the data-processing design using a relational database; to use the Structured Query Language for addressing business requirements							
	Transactional aspects and locking mechanismsTo use common functionalities of relational database managen systems (RDBMS), especially transactional aspects and locking mechanisms							
5	Learning outcomes: Academic: The students are able to structure, model, and implement the data processing components of information systems on the basis of a traditional methodological approach of common database management systems. Furthermore, the students develop a basic understanding of the functions of multi-user database management systems. Soft skills: The students learn and deepen problem solving in small groups as well as presentation techniques regarding their exercise results.							
6	Description of possible electives within the modules: none							
7	Exam	ination: Final Module E	İxam					
	Relev	ant Work:		1				
8	No	Number and Type; Con	nection to Course	Duration	Part of final mark in %			
	1	Final Written Exam		120 min.	100 %			
	Study	y Work:						
9	No	Number and Type; Con	nection to Course		Duration			
	1	Solving a case study						
10	Prerequisites for Credit Points: The credit points will be granted after all relevant work and study work have been successfully completed.							
	CP As	ssignment:						
			No 1	1.	ро СР			
	Pres	ence	No 2	1.	00 CP			
11	Rele	vant Work	No 1	3.	00 CP			
	Stud	ly Work	No 1	1.	1.00 CP			
	Total 6 CP							

12	Weight of the module grade for the overall grade: 3.45% (6 of 174 CP)					
13	Module Prerequisites: none					
14	<b>Presence:</b> Presence during the lectures and active participation in the accompanying group work is highly recommended to warrant learning success					
	Mobility/Acknowledgement:					
15	Use of the module for other course programs	none				
	English translation of module components from	No 1: Data Management				
	section 3	No 2: Tutorial Data Management				
16	<b>Responsible Lecturer:</b> Prof. Dr. Dr. h.c. Jörg Becker	<b>Department:</b> School of Business and Economics				
17	Misc.:					

Data Structures a	and Algorithms
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Module Title english:			[	Data Structures and Algorithms					
Course Program:			E	Bachelor Information Systems					
1	1 Module No: Inf2			State: Compulsory	Language of Inst	t <b>ruction:</b> Ge	erma	n or Englis	sh
2	Turn: seme	each summe ster	er <b>I</b>	Duration: 1 semester	Semester: 2	<b>CP:</b> 9	Wo	rkload (h):	: 270
	Modu	Ile Structure	:						
	No	Туре	Cours	e		State	V	Workload (	(h)
3							F (	Presence (h + CH)	Self- Study (h)
	1	Lecture	Data S	Structures and Algorit	hms	Compulso	ory 6	60 h (4 CH)	90
	2	Exercise	Exerci	ses on Data Structure	es and Algorithms	Compulso	ory 3	30 h (2 CH)	90
4	Nodule Contents:Background and relations to other courses:The knowledge acquired in this lecture is a prerequisite for the modules "Software Engineering,""IT Systems", "Security of Distributed Systems", "Project Seminar", and the Bachelor thesis. The module presupposes basic programming and mathematical skills as conveyed in the modules "Programming" and "Mathematics for Economists".Main topics and learning objectives:Data structures specify the elementary layout variants of data in (main and secondary) memory of computers. Their key aspects concern creation, usage, and maintenance of the respective structure. Furthermore, they are central to the design of various algorithms, which form the foundation of various applications in computer science. In this lecture, a representative selection of data structures (such as lists, trees, heaps, graphs, stacks, queues, hash structures) as well as fundamental algorithms (such as searching and sorting, routing in graphs, tree algorithms, string matching) are presented. Essential aspects are, on the one hand, the development of analysis and evaluation techniques of algorithms and, on the other, the shaping of the ability to discriminate between "efficiency" and "inefficiency." The latter paves the way towards so-called NP-complete problems and their approximate treatment. Besides the lecture, exercises are offered. Students are aware of fundamental algorithms to make best use of data structures. They are able to apply them competently, in particular with respect to efficiency. Furthermore, they are able to develop new algorithms and to determine their complexity.ThemesLearning objectivesRepresentative selection of data structuresExplain layout of and differences between discussed data structures.								

			nt data structures rements and runi	t data structures for given scenarios (e.g., ements and running time of relevant			
	Fundamental algorithms•Apply and program algorithms.•Develop new algorithms.						
	Ana algo	Analysis and evaluation of algorithmsExplain the notion of efficiency. 					
5	<ul> <li>Learning outcomes:</li> <li>Academic:</li> <li>Evaluation, selection, and application of suitable data structures and algorithms for given scenarios.</li> <li>Soft skills:</li> <li>Independent and team work to discuss and solve algorithmic problems. Presentation of devised solutions in small groups.</li> </ul>						
6	<b>Desc</b> none	ription of possible elec	tives within the modules	:			
7	Examination: Final Module Exam						
	Relev	vant Work:					
0	No	Number and Type: Cor	nection to Course	Duration	Part of final mark in %		
0	1	Written exam		120 min.	100 %		
	Stud	y Work:			1		
9	No	Number and Type; Cor	nection to Course	Duration			
	1	Course Assignments		max. of 60 pages			
10	<b>Prere</b> The c comp	equisites for Credit Poin redit points will be grar pleted.	i <b>ts:</b> nted after all relevant wor	k and study work	have been successfully		
	CP As	ssignment:					
	Pres	ience	No 1	2.0	o CP		
11			No 2	1.00	o CP		
	Rele	want Work	No 1	4.5	o CP		
	Stuc	ly Work	No 1	1.50	o CP		
	Tota	l		9 C	P		
12	Weight of the module grade for the overall grade:         5.17% (9 of 174 CP)						

13	Module Prerequisites: none				
14	<b>Presence:</b> Presence is strongly recommended to warrant learning success				
	Mobility/Acknowledgement:				
	Use of the module for other course programs	none			
15	English translation of modulo components from		No 1: Data Structures and Algorithms		
	section 3		No 2: Exercises on Data Structures and Algorithms		
16	<b>Responsible Lecturer:</b> Prof. Dr. Fabian Gieseke		<b>Department:</b> School of Business and Economics		
17	Misc.:				

# **Operations Research**

Module Title english:				Operations Research						
Course Program:				Bachelor Information Systems						
1	1   Module No: QM2			State: Compulsory	Language of I	nst	ruction: Ge	erman or Engl	ish	
2	<b>Turn:</b> seme	each summ ester	er	Duration: 1 semester	Semester: 2		<b>CP:</b> 6	Workload (h	<b>1):</b> 180	
	Modu	ule Structure	:							
	No	Туре	Cou	rse		St	ate	Workload (h	)	
3								Presence (h + CH)	Self- Study (h)	
	1	Lecture	Ope	erations Research		Сс	ompulsory	30 h (2 CH)	60	
	2	Exercise	Tuto	orial Operations Resear	ch	Сс	ompulsory	30 h (2 CH)	60	
	probl partia "Busi Main	lems effectiv al quantitativ iness Mather <b>topics and l</b> <b>mes</b>	ely ar ve orie matic: <b>earni</b> i	nd efficiently. It thus for entation applications. C s" is required. <b>ng objectives:</b>	ms the basis fo	to	most all m the extent	odules with a of the module	e e e e e e e e e e e e e e e e e e e	
4	Basics in Stud Optimization absorbetwo star theo			Idents know that application problems can ideally be transformed into stract models and formally described. They are also able to distinguish tween simple and hard problems due to runtime complexity in Indardized machine models and have insights into the basics of complexity eory.						
	Graphs and The Trees app met			e students are able to model and solve graph-theoretical problems from plication and theory. Furthermore, the students are able to transfer basic ethods of optimization for graphs to new problems.						
	Linear The Optimization (ger and varia prob			students are able to describe and solve linear optimization problems neral and integer). They have gained deep insight into the basic problems the derivation of standard methods such as the simplex algorithm and ants. In addition, they are able to model and solve special application blems of the problem class of linear integer optimization.						
Nonlinear         Students can identify, model, and solve nonlinear production           Optimization         Students can identify, model, and solve nonlinear production           understanding basic numerical methods in one dimenapply deterministic (often heuristic) methods.					el, and solve no rical methods in neuristic) metho	olve nonlinear problems. In addition to nods in one dimension, students can methods.				

	Computer-aided OptimizationStudents will be able to implement selected methods of optimization from the areas of graphs/trees, linear optimization and nonlinear optimization by means of a programming language and thus solve given problems. Competences in at least one programming language suitable for rapid prototyping of algorithms (e.g. Python) have been acquired.					
5	Learning outcomes: Academic: Students will be able to transfer practical problems into mathematical models of operations research. They also have methodological knowledge to solve these problems (sometimes almost) optimally and to assess the methods used with regard to their applicability and limitations. Soft skills: Perseverance in addressing quantitative problems, critical thinking about problems and solution procedures, presentation skills (in the context of small group tutorials or equivalent digital formats), teamwork skills (in the context of group work).					
6	Description of po	ssible electives	within the modules	:		
7	Examination: Exa	aminations for ev	very part of the mod	ule		
8	Relevant Work: No Number and	d Type; Connect	ion to Course	Duration	Part of final mark in	%
	1 Written exa	m		90 min.	100 %	
9	Study Work: No Number and 1 Homework	d Type; Connect	ion to Course		<b>Duration</b> approx. 30 pages	
10	<b>Prerequisites for</b> The credit points completed.	<b>Credit Points:</b> will be granted a	after all relevant wor	k and study wo	k have been successfully	/
	CP Assignment:					
			No 1 1.0			
11			No 2	1.0	DO CP	
	Relevant Work		No 1	3.	DO CP	
	Study Work		No 1	1.	DO CP	
	Total			6	LP	
12	<b>Weight of the mo</b> 3.45% (6 of 174 C	<b>dule grade for tl</b> P)	ne overall grade:			
13	Module Prerequisites: none					

14	<b>Presence:</b> Presence is strongly recommended to warrant learning success						
	Mobility/Acknowledgement:						
15	Use of the module for other course programs	none					
	English translation of module components from	No 1: Operations Research					
	section 3	No 2: Tutorial Operations Research					
16	<b>Responsible Lecturer:</b> Prof. Dr. Heike Trautmann	<b>Department:</b> School of Business and Economics					
17	Misc.:						

# Foundations of Accounting

Module Title english:				Foundations of Accounting					
Course Program:				Bachelor Information S	ystems				
1 Module No: BWL2				State: Compulsory	Language of Instruction: German				
2	<b>Turn:</b> seme	each summe ster	er	Duration: 1 semester	Semester:	2	<b>CP:</b> 6	Workload (h): 180	
	Modu	ıle Structure	:						
	No	Туре	Cours	se		Stat	е	Workload (h	)
3								Presence (h + CH)	Self- Study (h)
	1	Lecture	Acco	unting		Com	pulsory	45 h (3 CH)	75
	2	Exercise	Tutor	ial on Accounting		Com	pulsory	15 h (1 CH)	45
4	Backs The n account with the m also a comp deep cours Main The p Comm busin the b meas analy mana thing analy emple comp to pro	ground and r nodule "Four unting and sh usiness active unting inform the help of the nodules "Mar applied in mar orises two elevent en the acquir tes complem topics and levent at on finance nercial Code tess activitie alance sheet urement rule sis of finance s, the operate sis in cost cer oyee behavior the operate on the in beaution of the operate sis in cost cer on the operate the operate of the operate of the operate of the operate of the operate of the operate of the operate of the operate of the operate of the operate of the operate of the operate of the operate of	elation idation nows the vities of nation the efination any other ements red know ent the earning ial acco (HGB) is are re- c, incor es for fi ial state ounting ing incor set. The busines	ns to other courses: as of Accounting" convey he links and interrelation f companies are recorded to manage their business incial statements. This im- ent Accounting" as well her modules. The lecture is a tutorial in small grou- bowledge by means of pra- e course. g objectives: counting deals with annue. It includes the basic pri- ecorded using double-er- me statement and cash f inancial statements are of the statement, the cost are covered. Students le fluenced by the use of co- e aim of the module is to as thinking and action.	s basic know ships betwe d in account s and how th parts knowle as "Financial "Accounting ps and a pler actical proble al financial s nciples of bo try bookkeep low statemer discussed. Fi e.g. from the sting as a cor ting of produ- arn how busi ost information teach stude	vledge en bo ing sy ey rep edge t Acco " is su nary tu ens. D statem ookke oing a nt. In a nally, e pers ntrollin cts an iness on. Ins	e of finar th sub-a stems, h port on th hat is no unting a uppleme utorial. E igital lea nents acc eping. S nd how addition student pective ng instru d servic decision sights in he langu	ncial and man reas. It illustr now companie heir business of only fundar nd Taxation" nted by a tuto Both serve to arning tests a cording to the tudents learn they are refle , recognition s gain insight of lenders. The ment. Among es, and the vers are made a to cost mana lage of busin	agerial rates how es use activities mental to , but is orial. This apply and nd online e German how cted in and ts into the ne part on g other ariance nd how gement ess" and
5	Learn Acado Stude are al finan	<b>ing outcome</b> emic: ents will be fa ble to record cial statemen	e <b>s:</b> amiliar busino nts. Sto	with the basic principle ess activities in the bala udents will also be able t	s of financial nce sheet an to analyse fir	and r d inco nancia	manager ome stat Il statem	ment account ement and to tents using ra	ing. They prepare tios. This

	enab area cost resul acco <b>Soft</b> The r of ac prom Final Thes	enables them to assess the financial position and financial performance of a company. In the area of management accounting, students have a basic knowledge of cost accounting (cost type, cost center and cost unit accounting), can apply this to practical problems and interpret the results. Overall, students are able to critically question and discuss individual aspects of accounting. <b>Soft skills:</b> The module enables students to expand their interdisciplinary skills in relation to the sub-areas of accounting. The accompanying tutorials also contribute to this. In addition, the tutorials promote the students' discussion skills and their ability to work in a team during discussions. Finally, the module promotes the systemic competencies of the students through self-study. These include, in particular, time and self-management.										
6	<b>Desc</b> none	Description of possible electives within the modules:										
7	Exam	iination: Final Module Exam										
	Relev	vant Work:										
8	No	Number and Type; Connect	ion to Course		Duration		Part of final mark in %					
	1				max. 120 m	I <b>N.</b>	100 %					
9	Study Work: none											
10	Prere The c comp	equisites for Credit Points: redit points will be granted a pleted.	after all relevan	t wor	k and study	work h	ave been successfully					
	CP As	ssignment:										
	Droc		No 1		1.50 (		CP					
11	Fles	sence	No 2		0.50 CP							
	Rele	evant Work	No 1			4.00 CP						
	Tota	ıl	6 CP			6 CP						
12	<b>Weig</b> 3.45	h <b>t of the module grade for tl</b> % (6 of 174 CP)	he overall grade	e:								
13	<b>Mod</b> none	ule Prerequisites:										
14	<b>Prese</b> Prese	e <b>nce:</b> ence is strongly recommende	ed to warrant lea	arnin	g success.							
	Mobi	lity/Acknowledgement:										
15	Use	of the module for other cour	se programs	Bac Eco Bac Mas	helor Busine nomics, Bacl helor Mather ster Business	ss Adr nelor II natics Chem	ninistration, Bachelor nformation Systems, , Bachelor Physics, nistry					

	Module Title english	Foundations of Accounting			
	English translation of module components	No 1: Accounting			
	from section 3	No 2: Tutorial on Accounting			
16	Responsible Lecturer: Professor Dr. Peter Kajüter		<b>Department:</b> School of Business and Economics		
17	Misc.:				

#### **Business Process Management** Module Title english: **Bachelor Information Systems Course Program:** Language of Instruction: German or English Module No: WI3 State: Compulsory 1 Turn: each winter Duration: 1 Semester: 3 **CP:** 6 Workload (h): 180 2 semester semester **Module Structure:** Workload (h) State Туре Course No Self-Presence Study (h + CH) 3 (h) 30 h (2 Compulsory 60 Lecture **Business Process Management** 1 CH) Exercise Compulsory 30 h (2 2 Exercises in Business Process Management 60 CH) **Module Contents:** 4 Learning outcomes: 5 Description of possible electives within the modules: 6 none Examination: Final Module Exam 7 **Relevant Work:** Duration Part of final mark in % Number and Type; Connection to Course No 8 120 Min Written Exam 100 % 1 **Study Work:** Number and Type; Connection to Course Duration No 9 1 Solving case studies maximum 15 pages **Prerequisites for Credit Points:** The credit points will be granted after all relevant work and study work have been successfully 10 completed. **CP Assignment:** 11 No 1 1.00 CP Presence No 2 1.00 CP

### **Business Process Management**

	Relevant Work	No 1		3.00 CP			
	Study Work	No 1		1.00 CP			
	Total			6 CP			
12	Weight of the module grade for th 3.45% (6 of 174 CP)	ne overall grade:					
13	Module Prerequisites: none						
14	Presence: Presence is urgently recommended						
	Mobility/Acknowledgement:						
	Use of the module for other course programs Bachelor Business Administration						
15	English translation of module co	mponents from	No 1: Business Process Management				
	section 3	inponents nom	No 2: Exercises in Business Process Management				
16	Responsible Lecturer:         Department:           Prof. Dr. Dr. h.c. Jörg Becker         University of Münster, School of Busine and Economics						
17	Misc.:						

### IT-Law

Module Title english:			IT-Law								
Course Program:				Bachelor Information	Systems						
1 Module No: WI4				State: Compulsory	State: Compulsory Language of Instruction: German or English						
2	<b>Turn:</b> each winter semester			Duration: 1 semester	Semester: 3	<b>CP:</b> 6	Workload (h): 180				
	Modu	le Structure	:								
	No	Туре		Course		State	State		Workload (h)		
3							Presence (h + CH)	Self- Study (h)			
	1	Lecture/ Exercise		IT-Law		Compu	lsory	6o h (4 CH)	120		
	fields of business info Main topics and learn Themes			matics. Previous know ng objectives: ning objectives	ledge from other r	nodules is	not re	equired.			
	Themes Lea			rning objectives							
	law	ance selling	know infor	wiedge of legal peculiarities of contracts concluded on the Internet, duty to orm b2b, b2C							
4	IT co	ntract law	know and a the c pecu conte	wledge and contents of contracts concerning IT transactions, classification application of conventional contract types of the German Civil Code, e.g. contract of sale, service contract and the lease contract by reference to the uliarities of the IT law, main features of defects liability in software law, tent control and the design of typical IT contracts							
	Data law	protection	origin illust Prote perso Teles Act w invol of inf	ns and constitutional k cration of rationales of ection Act (BDSG) with ons concerned, data p services Act (GTA), feat with regard to general of wed, duties of an inter formation	al background of data privacy law, overview and of data privacy law on the basis of the Federal Data ith emphasis on data handling in privacy, rights of the a privacy law within the framework of the German features and peculiarities of the German Teleservices al data protection law and the rights of the persons iternal commissioner for data protection and freedom						
	Copyright law acquart auth prog			uaintance with the structure of copyright law, the author and the norised user, copyright in employment, peculiarities of computer grammes							

	Trad espe dom	emark law, ecially ain law	differentiation l characteristics	petween name, bus of domain law, trad	iness denom emarks in th	inatio e socia	n and trademark, al web		
5	<ul> <li>Learning outcomes:</li> <li>Academic:</li> <li>At the end of the module, the students have gained a sound overview over the German and the European law system and the capability to recognise IT-specific legal problems, and are therefore in a position to address these towards the respective decision-maker in their future professional field or in project consulting. The students should be able to solve simple legal cases on their own or to take appropriate measures in order to counteract and to eliminate the previously identified legal problems.</li> <li>Soft skills:</li> <li>Perseverance in the familiarisation with an entirely new subject field and the ability to apply abstract norms to real-life scenarios; teamwork (within the scope of joint case-solving); knowledge of legal norms and the structure of the German and European law systems.</li> </ul>								
6	Desc none	ription of po	ssible electives v	within the modules	:				
7	Examination: Final Module Exam								
8	Relevant Work:         No       Number and Type; Connection to Course         Duration       Part of final mark in %								
	1	Final writter	ı exam		120 min.	100 %			
9	Stud	<b>y Work:</b> none							
10	<b>Prere</b> The c comp	equisites for redit points pleted.	<b>Credit Points:</b> will be granted a	fter all relevant wor	k and study	work h	ave been successfully		
	CP As	ssignment:							
11	Pres	ence		No 1		2.00	СР		
	Rele	vant Work		No 1		4.00	СР		
	Tota	l				6 CP			
12	<b>Weig</b> 3.45 <sup>9</sup>	<b>ht of the mo</b> % (6 of 174 C	<b>dule grade for th</b> P)	e overall grade:					
13	Module Prerequisites: none								
14	<b>Prese</b> Prese	ence: ence is strong	gly recommende	d to warrant learnin	g success				
15	Mobi	lity/Acknow	ledgement:						

	Use of the module for other course programs	none
	English translation of module components from section 3	No 1: IT-Law
16	<b>Responsible Lecturer:</b> Prof. Dr. Ulrich Luckhaus	<b>Department:</b> School of Business and Economics
17	Misc.:	

# Software Engineering

Module Title english:				Software Engineering					
Course Program:				Bachelor Information	Systems				
1 Module No: Inf3				State: Compulsory	Language of Instruction: German or English				
2	<b>Turn:</b> seme	each winter ester		Duration: 1 semester	Semester: 3	<b>CP:</b> 6	Workload (r	<b>):</b> 180	
	Modu	ule Structure	:						
	No	Туре	Coi	urse		State	Workload (h	)	
3							Presence (h + CH)	Self- Study (h)	
	1	Lecture	Sof	ftware Engineering		Compulsory	45 h (3 CH)	30	
	2	Exercise	Tut	orial Software Engineer	ing	Compulsory	15 h (1 CH)	90	
4	Softw stude requi pract <b>Main</b> The a team cours requi will b (such	vare Enginee ents have par red program ical courses <b>topics and l</b> im of this co s. The corres se covers the rements define placed on as UP, Scru	ring o ssed ming as w <b>earn</b> i urse ponc main initio UML m an	conveys the skills to de the course on Program experience. Software E ell as for the bachelor the <b>ing objectives:</b> is that students shall b ding management conce in tasks of the software on and analysis, design, modelling, middleware of XP) for software engin	velop large soft ming and that th ingineering skill hesis. e enabled to de epts and technic engineering life implementation , and design pa neering will be p	ware systems, ney have hence s will be requ velop large so cal skills will h cycle, namely n, and testing tterns. Moreo resented.	It assumes t e obtained th ired in e.g. di oftware system of conveyed. planning, . Particular er ver, process r	hat the ne fferent ns in The nphasis nodels	
4	Ther	nes		Learning objectives					
	Plan	ning		To learn the basic cor cost prediction and s	cepts of planni cheduling.	ng a software	project such	as e.g.	
Requirements definition and analysisTo specify the requirements of a software sy corresponding UML model.					ware system a	nd develop a			
	Design To decompose the overall functionality of a software system into a system of interacting components and relationships between them. Know the most important design patterns and be able to apply them solve design problems.					o a Iem. Ihem to			
	Impl	ementation		To implement a softw	are design usin	g a programm	ing language		
	Test	ing		To guarantee the qua	lity of the devel	oped software	2.		

	Process models To structure the software development process appropriately.								
5	Learn Acad Stud Soft The s work	ning outcomes: emic: ents shall be enab skills: students solve the together and dev	oled to develop large softwa e exercises in teams of (e.g.) elop software in teams.	are systems sy 5 students. T	vstemati his stre	ically. ngthens their ability to			
6	Description of possible electives within the modules: none								
7	Examination: Final Module Exam								
	Relev	vant Work:							
8	No	Number and Typ	e; Connection to Course	Duration		Part of final mark in %			
	1	Written exam		120 min.		100 %			
	Stud	y Work:							
9	No	Number and Typ	e; Connection to Course			Duration			
	1	Exercises				max 30 pages			
10	<b>Prerequisites for Credit Points:</b> The credit points will be granted after all relevant work and study work have been successfully completed.								
	CP Assignment:								
	Drog	sonco	No 1		1.50	СР			
11		Sence	No 2	No 2 0.5		o CP			
	Rele	evant Work	No 1	3.00		СР			
	Stu	dy Work	No 1	No 1 1.00		СР			
	Tota	al			6 CP				
12	<b>Weig</b> 3.45°	<b>sht of the module</b> % (6 of 174 CP)	grade for the overall grade:						
13	<b>Mod</b> none	ule Prerequisites:							
14	<b>Pres</b> e Prese	ence: ence is strongly re	commended to warrant lear	ning success					
15	Mobi	ility/Acknowledge	ement:						
C+	Use	of the module for	other course programs	none					

	English translation of module components from section 3	No 1: Software Engineering No 2: Tutorial Software Engineering				
16	Responsible Lecturer: Prof. Dr. Herbert Kuchen	<b>Department:</b> School of Business and Economics				
17	Misc.:					

# Data and Probability

Module Title english:				Data and Probability						
Course Program:				Bachelor Information Systems						
1	Modu	I <b>le No:</b> QM3		State: Compulsory	Language of Instruction: German or English					
2	<b>Turn:</b> seme	each winter ster		<b>Duration:</b> 1 semester	Semester: 3	<b>CP:</b> 6	Workload (h): 180			
	Modu	le Structure	:							
	No	Туре	Cou	rse		State	Workload (h	)		
3							Presence (h + CH)	Self- Study (h)		
	1	Lecture	Data	a and Probability		Compulsory	30 h (2 CH)	60		
	2	Exercise	Tuto	orial for Data and Proba	bility	Compulsory	30 h (2 CH)	60		
	In IT s impro- purel To thi Proba Espec Finan conte <b>Main</b>	supported bu ove processes y data driven s end, the m bility models cially, "Data / ce", make in nts of "Math <b>topics and le</b>	sines s etc. tech odule s are Analy tensi emat	ss, juge amount of data Th module first discus iniques. Generalising si e introduces the mathe fundamental in econor rtics and Simulation", k ve use of probability ca tics for IS" should be th <b>ng objectives:</b>	a emerges which ses "data" and tatements inevi- matical basics of mical practice – out also speciali alculus. As a pre- torough.	i is to be expl subsequentl tably requires of probability in science as zation course erequisite, kno	oited in order y, deals with a probability theory in IS-s well as in bus s like "Stoch owledge of the	to som model. tudies. siness. astics in e		
4	Descriptive Statistics: Data, Scales			To get acquainted with data sources, the statistical meaning of numbers and data representations. To be able to determine partitions by hierarchical clustering.						
	Prob varia	abilities, ran Ibles	dom	To learn about the a language of probabi distributional measu	To learn about the assessment of uncertainty and to master the language of probability theory. To investigate probabilities by means of distributional measures based on distribution function and expectation					
	Conditioning, Independence		To understand how hypothetical) inform quantities that are n	probabilities are nation is availab nutually uninfor	e to be reasse le To deal wit mative.	ssed if (real o h events and	or random			
	Limit	theorems		To grasp the meanir Glivenko-Cantelli th	ng of the (strong eorem	) law of large	numbers resp	o. the		
	Inter Stati tools	dependencie stical Softwa	es ire	To get insight to pro several attributes. T attributes can be qu	bability models for multivariate data, i.e. data with o understand how the dependence between antified theoretically and empirically. To be familiar					
	with (at least) one statistical package (such as "R"). To use this package in solving statistical problems that arise in applications.									
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5	Learning outcomes: Academic: The student should demonstrate the capability to handle moderate probability models describing economical problems. Furthermore, the student should understand the interrelation between theoretical models and empirical data – e.g., by means of limit theorems. Soft skills: Reading and understanding formal texts using probability-language. Working in small groups (self study) in order to solve mathematical problems.									
6	Desc none	ription of possible electi	ves within the modules	:						
7	Exan	nination: Final Module E	xam							
8	Relev No	vant Work: Number and Type; Con Final written exam	nection to Course	<b>Duration</b> 90 min.	Part of final mark in %					
9	Stud	v Work: none			·					
10	Prerequisites for Credit Points: The credit points will be granted after all relevant work and study work have been successfully completed.									
	CP Assignment:									
	Pres	sence	No 1	1.00	СР					
11			No 2	1.00	CP					
	Rele	evant Work	NO 1	4.00 6 CP						
12	<b>Weig</b> 3.45 <sup>°</sup>	ht of the module grade f % (6 of 174 CP)	or the overall grade:							
13	<b>Mod</b> none	ule Prerequisites:								
14	<b>Pres</b> Prese	ence: ence is strongly recomme	ended to warrant learnin	g success						
	Mob	ility/Acknowledgement:								
15	Use	of the module for other (	course programs	none						
				No 1: Data and P	robability					

	English translation of module components from section 3	No 2: Tutorial for Data and Probability
16	<b>Responsible Lecturer:</b> Prof. Dr. Heike Trautmann	<b>Department:</b> School of Business and Economics
17	Misc.:	

#### Module Title english: **Operations Management Bachelor Information Systems Course Program:** Module No: BWL3 State: Compulsory Language of Instruction: German or English 1 Turn: each winter Duration: 1 **CP:** 6 Workload (h): 180 Semester: 3 2 semester semester **Module Structure:** State Course Workload (h) No Туре Self-Presence 3 Study (h + CH)(h) Lecture **Operations Management** Compulsory 30 h (2 CH) 60 1 2 Exercise **Tutorial Operations Management** Compulsory 30 h (2 CH) 60 **Module Contents:** Background and relations to other courses: Operations Management covers the management of production and service processes in companies and is rooted in the functional area of operations. The processes considered in this functional area are closely related to processes of marketing, controlling and financial management, which are considered in other modules. For example, it is important for the inventory management of products to know the sales campaigns planned in Marketing. This module provides an introduction to operations management. Using selected practical case studies, it shows the areas of application of Operations Management, imparts its basic gualitative and guantitative methods and describes the successful use of these methods within a company. In the tutorial, tasks are used to apply the lectures' contents to concrete problems and deepen the students' knowledge. Students should have successfully completed the first and second semester. With regard to other courses, knowledge from the lecture "Analysis for Economists" as well as "Statistics I" is recommended. Main topics and learning objectives: 4 The core objective of this module is to teach the most important qualitative and quantitative methods under the below themes. Themes Learning objectives Be able to distinguish between the different types of quantitative and Forecasting and Demand Planning gualitative models. Be able to determine and apply a forecast model suitable for the data at hand. Be able to assess the guality of forecasts. Location Learn and be able to apply various approaches to making different decisions Planning in location planning. Process Design Learn to model, evaluate, and improve processes using various approaches. Be able to apply basic elements of queuing theory in process design.

#### **Operations Management**

	Quality Management	Understand th approaches to be able to de	he importance of qu o it. Learn the use o termine if a process	ality manage f control cha meets requi	ement rts in c red tol	and learn different quality management and lerance limits.	
	Inventory Management Understand the various functions of inventory and the objectives of inventory control. Be able to apply various techniques to determine the frequency and level of orders. Understand the interaction of inventory management with demand forecasting and how it relates to the overall supply chain.						
	Production Planning	Understand tl manufacturin manufacturin Planning.	he different approad g resource planning g. Be able to perform	thes to produ as well as ju the steps o	uction ust-in-t of Man	planning, such as time production and lean ufacturing Resource	
	Scheduling Operations	Know the object methods, e.g. determining t apply differer	ectives of schedulin ., distributing tasks he order in which th nt approaches to rou	g and be abl to different p ley are proce lte planning.	e to ap proces ssed.	oply the respective sing stations and Know and be able to	
5	Learning outcomes: Academic: The student should demonstrate the ability to reproduce his knowledge about the concepts and methods of Operations Management, to apply that knowledge to a new context, and to integrate and apply the taught themes. Soft skills: By preparing and reviewing the lecture contents and tasks given in the exercise in workgroups during their self-study, students improve their team work skill. This is supported by a Learnweb discussion forum that is guided by the chair. Furthermore, this course increases their ability to						
6	<b>Description of poss</b> none	sible electives	within the modules	:			
7	<b>Examination:</b> Final	l Module Exam					
	Relevant Work:						
8	No Number and	Type; Connecti	on to Course	Duration		Part of final mark in %	
	1 Final written	exam		90 min.		100 %	
9	Study Work: none						
10	<b>Prerequisites for Credit Points:</b> The credit points will be granted after all relevant work and study work have been successfully completed.						
	CP Assignment:						
11	Presence		No 1		1.00 CP		
			No 2		1.00 (	CP	
	Relevant Work		No 1	4.00 CP			

	Total		6 CP			
12	Weight of the module grade for the overall 3.45% (6 of 174 CP)	l grade:				
13	<b>Module Prerequisites:</b> Students should have successfully passed lectures "Mathematics for IS" and "Operat	<b>Module Prerequisites:</b> Students should have successfully passed the first and the second semester, especially the lectures "Mathematics for IS" and "Operations Research".				
14	<b>Presence:</b> Presence is strongly recommended to warr	ant learning	success			
	Mobility/Acknowledgement:					
15	Use of the module for other course programs Bachelor Business Administration, Bachelor Economics, Bachelor Informatio Systems					
	English translation of module component	s from	No 1: Operations Management			
	section 3		No 2: Tutorial Operations Management			
16	<b>Responsible Lecturer:</b> Prof. DrIng. Bernd Hellingrath		<b>Department:</b> School of Business and Economics			
17	Misc.:					

Module Title english:				Digital Work & Project Management					
Cou	Digital Work & Hojeet Management       Durse Program:     Bachelor Information Systems								
Module No: WI5				State: Compulsory	State: Compulsory         Language of Instruction: German or English				
2	<b>Turn:</b> seme	each summ ester	er	Duration: 1 semester	Semester: 4	<b>CP:</b> 6	Wo	rkload (h):	180
	Modu	ule Structure	:						
	No	Туре	Cour	se		State		Workload	(h)
								Presence (h + CH)	Self- Study (h)
3	1	Lecture	Digit	al Collaboration: Tools	and Concepts	Compul	sory	15 h (1 CH)	30
	2	Lecture	The   work	public and academic d	scourse on digital	Compul	sory	15 h (1 CH)	30
	3	Lecture	Proje	ect Management		Compulsory		15 h (1 CH)	30
	4	Exercise	Exer	cises in Project Manage	ement	Compul	Compulsory		30
4	Modu Back Digita pract consi empl indiv cours acad beco mana stude be he meth stude refere <b>Main</b> The f inten is to work of fur proje contr	ule Contents ground and in alization has ices of work, tellations, wa oyment. Yet idual, organi se combines emic discour me the preva agement is a ents with an elpful during ods include ents need to ences to real topics and l irst part of th ded change, provide stud in light of stan ct life cycle, colling, as we	relation had a colla ays of our ur zatior a refle rse with ailing f n esse under the pl lectur form g -worlo earnin e cou possi ents v akeho nowle incluo	<b>ons to other courses:</b> and continues to have a borative and distribute organizing work, up to nderstanding of the cha- as, societies and the ec- ection on the transform th an introduction into form of work in IT relate ential part of conductin standing of the toolset lanning and work on th es, software tutorials a groups and apply the g l project management of <b>ng objectives:</b> rse emphasizes alterna- ible side-effects, relate with a mature and actio older interests. The second dge of management of ling such stages as init closing a project. Project	a profound impact d work and divisio macro level effects anging nature of wo conomy remains po ation of work as it project work and p ed professions. Fun g (IT) projects. Proj for the work envirce eir Bachelor and M nd student assign ained knowledge to scenarios. Ative scenarios of to d structural change nable understandi ond part of the cou (IT) projects. It pro iating, planning, ex-	on work: fr n of labor, s on labor j ork and the oorly develo is mirrored roject man damental fect manag onment of l laster these ments. With o solve tas echnology es. A key ra ng of the e rse focuse vides an of xecuting, n thods and	om t nove prode imp oped l in tl ager knov eme T pro es. T hin tl ks th supp ation wervi nonit tools	he individu el human-m uctivity and lications fo . Therefore ne public an nent, which vledge of pu nt will prov ofessions, a he teaching ne assignm at have ported work ale of this of the dissem ew of the e oring and s are introd	al achine r the , the nd n has roject ide and will g ents, :: :ourse ape of ination ntire uced in

# Digital Work & Project Management

the lectures and are applied in the software tutorials and student assignments. Guest lectures by industry representatives will provide insights into practice projects.

Themes	Learning objectives
Digital transformation of work	To develop an in-depth conceptual and practical understanding of the domains of digital work and project management.
Organization and governance of work	To critically examine the relationship between technology development and other forces shaping the understanding, organization and management of work.
Introduction to (IT) Project Management	To understand the main concepts in (IT) project management and the differences between projects and routines.
Project Life Cycle Management	To understand the project life cycle and internal and external factors influencing projects.
Management of the Project "Magic Triangle": Scope, Schedule, and Cost	To understand how to manage each of the dimensions of the project "Magic Triangle", namely scope, schedule, and cost, as well as to know the main underlying processes and to be able to apply the relevant methods and tools.
Project Quality Management	To understand how to manage quality in projects, as well as to know the main underlying processes and to be able to apply the relevant methods and tools.
Project Resource Management	To understand how to manage a project team and all project resources, as well as to know the main underlying processes and to be able to apply the relevant methods and tools.
Project Communications Management	To understand how to manage communication(s) in projects, as well as to know the main underlying processes and to be able to apply the relevant methods and tools.
Project Risk Management	To understand how to manage risks in projects, as well as to know the main underlying processes and to be able to apply the relevant methods and tools.
Specialized Topics in (IT) Project Management	To deepen knowledge of particular topics in (IT) project management, such as knowledge management and document management in projects, agile methods for (IT) project management, multi-project management, project closing and self- management.
Tutorials on Project Management Software	To gain hands-on experience with project management software (such as Microsoft Project and Jira).

#### Learning outcomes:

#### Academic:

Participants understand key disciplinary approaches and concepts related to the technology-induced transformation of work, in particular collaborative and distributed work. Draw on wider public and academic debates to explore contentious issues related to (the future of) digital work. Students are able to apply stakeholder and discourse analysis and engage in a classroom debate. Students understand the main concepts in (IT) project management, as well as gain knowledge of some specialized topics in this field. They understand how to manage (IT) projects and know the main processes in project management. They are able to apply methods and tools to solve tasks

	that have references to real-world project management scenarios, as well as are able to use project management software. <b>Soft skills:</b> Gain experience in group work, problem-solving, academic writing, presenting, discussing and debating. Improve passive and active English language skills in both written and oral form. Gain basic experience with project management software. Foster independent work and self studies. Connect with IT professionals in the industry.								
6	<b>Desc</b> none	ription of possible electives	within the modules	:					
7	Exam	<b>ination:</b> Examinations for ev	very part of the mod	ule					
	Relev	vant Work:							
	No	Number and Type; Connect	ion to Course	Duration		Part of final mark in %			
8	1	Written Exam		max 120 mi	n	75 %			
	2	Exercise (groups of 4 - 5 stu script	dents): written	4000 words	5	25 %			
	Study No	y Work: Number and Type; Connect	ion to Course			Duration			
9	1 Project Management Assignments: group presentation (groups of approx. 5 students)					20 min			
10	Prere The c comp	equisites for Credit Points: redit points will be granted a pleted.	after all relevant wo	rk and study	work h	ave been successfully			
	CP Assignment:								
			No 1		0.50 CP				
	Droc	anca	No 2		0.50	СР			
	FIES		No 3		0.50	СР			
11			No 4		0.50	СР			
	Rele	vant Work	No 1		3.00	СР			
			No 2		0.50	СР			
	Stuc	ly Work	No 1		0.50	СР			
	Tota	l			6 CP				
12	<b>Weig</b> 3.45%	<b>ht of the module grade for tl</b> % (6 of 174 CP)	ne overall grade:						
13	<b>Modu</b> none	le Prerequisites:							

14	Presence: Presence is strongly recommended to warrant learning success						
	Mobility/Acknowledgement:						
	Use of the module for other course programs	none					
		No 1:	Digital Collaboration: Tools and Concepts				
15	English translation of module components from section 3	No 2: The public and academic discourse on digital work					
		No 3: Project Management					
		No 4: Exercises in Project Management					
16	<b>Responsible Lecturer:</b> Prof. Dr. Stefan Klein, Dr. rer. nat. Raimund Vogl		<b>Department:</b> University of Münster, School of Business and Economics				
17	Misc.:						

#### IT-Systems

Module Title english:			IT-S	IT-Systems					
Course Program:			Bao	Bachelor Information Systems					
1   Module No: Inf4			Sta	te: Compulsory	Language of I	nstruction: G	erman or Engl	ish	
2	Turn: seme	each summe ster	er <b>Du</b> i ser	<b>ation:</b> 1 nester	Semester: 4	<b>CP:</b> 6	Workload (h	<b>):</b> 180	
	Modu	le Structure	:						
	No	Туре	Course			State	Workload (h	)	
3							Presence (h + CH)	Self- Study (h)	
	1	Lecture	IT Syster	15		Compulsory	30 h (2 CH)	60	
	2	Exercise	Exercise	s in IT-Systems		Compulsory	30 h (2 CH)	60	
4	Backg This r comp with v multi is dis cours eleme "upw imple mana modu syste in lan Stude virtua units to dis to ap <b>Ther</b> Bool mult	ground and r nodule prese virtualization plexers, and cussed from e then deals entary function ards", for ap emented indi- gement, pro- ille focuses o ms. Thus, the ger IT system <b>topics and le</b> ents develop ilization. Stu- for sample p scuss archite- ply typical ma- nes ean function iplexers, ado Neumann arc	elations t ents found ir manage techniqu memory of a modern with the f onality tha plications vidually. T cess mana n abstract e module is. earning of a solid ba dents lear oroblems, ctures, co anagemen s, ders chitecture	b other courses: ations of IT syster ment by operating es. Students are g hips, which in com perspective. Base undamentals of of it interact "downw , hardware indeper ypical functionalit agement and proce- ion via virtualizati forms the basis fo <b>ijectives:</b> ckground of comp n to translate prote- and to discuss the neepts, and comp- it tasks in sample <b>Learning object</b> Design and use Explain the fun performance as Explain and write	ns, from the arc g systems to the uided from Boo abination result ed on this under perating system ards" with spec andent and abst y and services i essor schedulin on in cloud envi r understanding outer structures, olems into Boole fundamental vo onents of opera scenarios. tives components of damental comp spects. te simple proce	hitecture of ty ir operations ean functions in a von Neu standing of c s. Operating s ific hardware ract services f nclude resou g, and I/O. Su ronments to hardware an operating sy ean functions on Neumann ting systems	pical von Neu in cloud envir s to adders, mann compute omputer hard systems provi and provide that do not ne rce and memo ubsequently, to manage comp d software int stems, and , to design fun concept. They and virtualiza	imann fonments er, which ware, the de red to be ory chis olex IT eractions nctional are able tion and ss its	

	Ope arch thre	rating system itecture, processes, ads	Discuss major architectures and components of modern OSs; explain and contrast processes and threads and their roles for OSs and applications.							
	Scheduling, I/O, virtual memoryExplain OS data structures, algorithms, and management techniques.									
	Concurrency, mutual exclusionAnalyze programming challenges arising from concurrency and apply appropriate techniques addressing these challenges.									
	Virtu	ualization	Explain concepts from perform typical manag	virtualization t ement tasks.	to se	erverless computing,				
5	<ul> <li>Learning outcomes:</li> <li>Academic:</li> <li>Solid understanding regarding the computer organization of computers and IT systems and the interaction of hardware, virtualization, and operating software.</li> <li>Soft skills:</li> <li>Independent and interactive work with real systems and simulation tools, individually as well as in groups.</li> </ul>									
6	<b>Desc</b> none	ription of possible electiv	ves within the modules	:						
7	Exam	ination: Final Module Ex	am							
	Relevant Work:									
8	No	Number and Type; Conn	ection to Course	Duration		Part of final mark in %				
	1	Written Exam		90 min		100 %				
	Study	Study Work:								
9	No	Number and Type; Conn	ection to Course			Duration				
	1	Exercises (Homework)		ca 30 pages						
10	Prere The c comp	equisites for Credit Points redit points will be grant pleted.	<b>s:</b> ed after all relevant woi	rk and study w	ork ł	nave been successfully				
	CP As	ssignment:								
	Pres	ence	No 1	1	.00	СР				
11			No 2	1	.00	СР				
	Rele	want Work	No 1	3	3.00	СР				
	Stuc	ly Work	No 1	1	.00	СР				
	Tota	l		6	5 CP					
12	<b>Weig</b> 3.45 <sup>°</sup>	ht of the module grade fo % (6 of 174 CP)	or the overall grade:							

13	Module Prerequisites: none					
14	Presence: none					
	Mobility/Acknowledgement:					
15	Use of the module for other course programs	none				
	English translation of module components from	No 1: IT Systems				
	section 3	No 2: Exercises in IT-Systems				
16	<b>Responsible Lecturer:</b> Prof. Dr. Fabian Gieseke, Dr. Jens Lechtenbörger	<b>Department:</b> University of Münster, School of Business and Economics				
17	Misc.:					

#### Data Analysis

Module Title english:		Data Analysis								
Course Program:				Bachelor Information	Systems					
1   Module No: QM4				State: Compulsory	Language of Instruction: German or English					
2	<b>Turn:</b> seme	each summe ster	۶r	Duration: 1 semester	Semester: 4	<b>CP:</b> 6	Workload (h	<b>):</b> 180		
	Modu	le Structure	, •							
	No	Туре	Cou	rse		State	Workload (h	)		
3							Presence (h + CH)	Self- Study (h)		
	1	Lecture	Data	a Analysis		Compulsory	30 h (2 CH)	60		
	2	Exercise	Tuto	orial on Data Analysis		Compulsory	30 h (2 CH)	60		
	funda tools in for Meth Main	imentals of s for statistica thcoming mo ods often em <b>topics and le</b>	tatist l ana dule: ploy earnii	ical data analysis to inv lysis are investigated d s focusing on empirical tools and methods for s ng objectives:	vestigate busin uring the cours data. In particu statistical testir	ess processes es. The techni ılar, seminars ıg.	s. To this end, iques coverec in Quantitati	, software l are basic ve		
4	Mod and tech	el selection pertaining niques	To S li	o grasp the role of conditional distribution in the context of data analysis. ubsequently, to get acquainted with the standard techniques of model election: parameter estimation (method of moments, maximum kelihood) and testing statistical hypotheses. To be familiar with basic echniques how to calculate distributions of test statistics.						
	Inpu Anal expla fored	t-Output ysis, anation and casting	To ca re co	o get familiar with the s ategorical regression re egard I/O-problems in t onditional expectation	tandard proble sp. classification he general cont as a fundament	ms of inductiv on) and the cla text of condition t of explanation	ve data (metri assical proce oning. To use on.	c and dures. To		
	Stati Softv	stical ware tools	Te "  a	o gain more experience with (at least) one statistical package (such as R"). To use this package in solving statistical problems that arise in pplications.						
5	Learn Acade The S mode Soft s	ing outcome emic: tudents know ling queuing skills:	<b>s:</b> v/car	n apply fundamental sta ems in mathematical te	atistical method erms.	ds in IS. He/sł	ne is capable	of		

	Reading and understanding formal texts using probability-language. Working in small groups (self study) in order to solve mathematical problems, Presentation Skills (when visiting the tutorial). Knowledge of common Software-Tools in Statistics.									
6	<b>Desc</b> none	ription of possible electives	within the modules	:						
7	Exam	ination: Final Module Exam								
	Relev	vant Work:		1						
8	No	Number and Type; Connecti	on to Course	Duration		Part of final mark in %				
	1	Written Exam		90 min		100 %				
9	Study Work: none									
10	<b>Prerequisites for Credit Points:</b> The credit points will be granted after all relevant work and study work have been successfully completed.									
	CP As	ssignment:								
	Pres	ence	No 1		1.00 CP					
11			No 2		1.00 (	CP				
	Rele	vant Work	No 1		4.00 LY					
	Tota	l			6 CP					
12	<b>Weig</b> 3.45 <sup>9</sup>	ht of the module grade for th % (6 of 174 CP)	ie overall grade:							
13	<b>Modu</b> none	ıle Prerequisites:								
14	<b>Prese</b> Prese	ence: ence is strongly recommende	d to warrant learnin	g success.						
	Mobi	lity/Acknowledgement:								
15	Use	of the module for other cour	se programs	none						
	Engl	ish translation of module co	mponents from	No 1: Data	Analys	sis				
	sect	ion 3		No 2: Tuto	No 2: Tutorial on Data Analysis					
16	<b>Resp</b> Prof.	<b>onsible Lecturer:</b> Dr. Heike Trautmann		<b>Departme</b> University and Econ	e <b>nt:</b> / of Mi omics	inster, School of Business				
17	Misc	:								

Module Title english:				Systems Analysis and Decision Making						
Cou	rse Pro	ogram:		Bachelor Information Systems						
1	Modu	<b>ıle No:</b> QM5		State: Compulsory	State: Compulsory Language of Instruction: German or English					
2	<b>Turn:</b> seme	each summ ester	er	Duration: 1 semester	Semester: 4	<b>CP:</b> 6	Woi	kload (h):	<b>load (h):</b> 180	
	Modu	ıle Structure								
	No	Туре	Coui	'se		State		Workload	(h)	
3								Presence (h + CH)	Self- Study (h)	
	1	Lecture	Syst	ems Analysis and Decis	sion Making	Compu	sory	30 h (2 CH)	60	
	2	Exercise	Exer Mak	cises in Systems Analy ing	sis and Decision	Compu	sory	30 h (2 CH)	60	
	The r simu conce mode of ba mode acqu <b>Main</b> Upon	nodule "Syst lation, advar epts of game els as a basis sic optimiza ule are requin ired in the m <b>topics and l</b> completion	ems A nced of theo for o tion a red. Ir odule <b>earnin</b> of the	Analysis and Decision A optimization as well as ry. This will enable ther ptimization processes nd skills in programmir addition, the module "Data and Probabilitie <b>ng objectives:</b> e module, students will	Making" equips stu basics of decisior n to model real-we as well as decisio ng acquired in the builds on basic kr s". have acquired kn	udents with a theory and orld proble n-making p scope of th owledge o owledge or	n meth d kno ms ar proces ne Op f prob n the	hods of wledge in nd use thes sses. Know erations Re pability the following to	e ledge esearch ory opics:	
4	The	nes	Lea	rning objectives						
	Syst Mod	ems and els	Stu sys rea	dents are able to expla tems analysis. In doing l system, modeling, pre	in the concept of s so, they are able ediction, and evalu	a system a to specify uation for a	nd the and ju give	e process o ustify terms n system.	of 5 like	
	Sim	ulation	Stu sim it ir con	dents have a broad knowledge of simulation methods and classes of iulations. They are also able to abstract a given real system and formulate in a suitable simulation model. They also have the necessary skills for a inputer-based implementation of such models.						
	Adva Cone Opti	anced cepts of mization	The of c me for	e students have a sound optimization. In additio thods and their applica the use of randomized	d knowledge of ad n to understandin itions, students ca methods and app	lvanced (al g establish an prepare ly these mo	so he ed de probl ethod	uristic) me eterministic ems and m s.	thods c odels	

# Systems Analysis and Decision Making

	Deci	sion Theory	Students are a They have a ba critically evalu able to establi and to method under multiple	able to describe and asic knowledge of n ate approaches and sh the connection b dically consider opti e objectives).	l distinguish nethods for d d results of d petween opti imization in t	decis ecisic ecisic mizat he de	ion-making problems. on making and can on making. They are also ion and decision theory cision context (especially			
	Game Theory Students have a basic understanding of game theory as a generalization of decision theory and are familiar with the most important aspects of strategic and cooperative games.									
5	Learning outcomes: Academic: Students will be able to abstract real-world decision problems, transfer them into a simulation model and optimize them depending on the field of application. In addition, they acquire competencies in prescriptive (normative) decision-making and are able to master dynamic decision scenarios in terms of game theory (competitive and cooperative) on a mathematical- algorithmic level. Soft skills: Perseverance in addressing quantitative problems, critical thinking about problems and solution procedures, presentation skills (in the context of small group tutorials or equivalent digital formats), teamwork skills (in the context of collaborative group work).									
6	Description of possible electives within the modules: none									
7	Exam	ination: Final	l Module Exam							
	Relev	ant Work:								
8	No	Number and	Type; Connecti	ion to Course Duration			Part of final mark in %			
	1	Written Exam	I		60 min		100 %			
	Study	y Work:								
9	No	Number and	Type; Connecti	on to Course			Duration			
	1	Exercises (Ho	omework), even	tually in a digital fo	rmat		ca 50 pages			
10	<b>Prere</b> The c comp	<b>equisites for C</b> redit points w pleted.	<b>redit Points:</b> ill be granted a	fter all relevant wor	k and study v	vork ł	nave been successfully			
	CP As	ssignment:								
				No 1		1.00	СР			
	Pres	ence		No 2		1.00 CP				
11	Rele	vant Work		No 1		3.00 CP				
	Stud	ly Work	Study Work         No 1         3.00 CP							
	Total     6 CP									

12	Weight of the module grade for the overall grade: 3.45% (6 of 174 CP)						
13	<b>Module Prerequisites:</b> Attendance is strongly recommended to improve learning success.						
14	Presence: none						
	Mobility/Acknowledgement:						
	Use of the module for other course programs none						
15	English translation of module components from section 3		No 1: Systems Analysis and Decision Making				
			No 2: Exercises in Systems Analysis and Decision Making				
16	<b>Responsible Lecturer:</b> Prof. Dr. Heike Trautmann		<b>Department:</b> University of Münster, School of Business and Economics				
17	Misc.:						

### Seminar Bachelor IS 1

Module Title english:			Seminar Bache	Seminar Bachelor IS 1						
Cou	rse Pro	ogram:	Bachelor Inform	nation S	Systems					
1	Modu	ule No: Sem1	State: Compuls	sory	ory Language of Instruction: German or English					
2	<b>Turn:</b> seme	each ester	Duration: 1 sen	nester	Semester: 4	<b>CP:</b> 6	Workload (h)	: 180		
	Modu	ule Structure	:							
	No	Туре	Course			State	Workload (h	)		
3							Presence (h + CH)	Self- Study (h)		
	1	Seminar	Scientific Writing			Compulsory	24 h (1 CH)	124		
	2	Seminar	Presentation tech	inique		Compulsory	12 h (o CH)	20		
4	The IS inform varie are p <b>Main</b> The IS inform expended audie	S seminar all mation system ty of offered s rerequisites f <b>topics and lo</b> S seminar en mation system rience in react ence. Tutors a	ows the students to ns, computer scier specializations. The or an IS seminar. <b>earning objectives:</b> ables students to c ns, computer scier ling scientific litera assist the students	o deepen nce or q e conte deepen nce or q ature, so in indiv	en their knowledg uantitative metho nts and methods their knowledge a uantitative metho :ientific writing ar vidual meetings ir <b>ng objectives</b>	e and skills ir ods. The stude taught in the and skills in a ods. In addition of presenting all of these s	n a particular a ents can choo compulsory c specific area on, the studer advanced top steps.	area of se from a ourses of ots get oics to an		
	(e.g.	.) algorithms,	data science,	knowing and being able to apply concepts and methods of						
	prog engi	ramming lan neering, moc	guages, software Ielling	a specialized IS topic						
	Scie	ntific texts		Reading and understanding scientific literature. Writing scientific texts about an advanced IS topic in a structured, understandable and precise way.						
	Presentation			Orally present the content of the written scientific text using state-of-the-art presentation tools (such as Powerpoint or LaTeX) and defend positions during the discussion						
5	Learr Acad Know	ning outcome emic: ving and bein	<b>s:</b> g able to apply cor	icepts a	ind methods of a	specialized IS	S topic.			

	Soft skills: (among others) media competence, time management, rhetoric, presentation skills.									
6	Desc none	ription of possible electives	within the modules	:						
7	Exan	nination: Final Module Exam								
	1									
8	No	Number and Type; Connect	ion to Course	Durati	on	Part of final mark in %				
	1 Presentation of a written seminar paper includir final discussion within the group			ng ca 20 max. 6	oages, o min	100 %				
9	Study Work: none									
10	<b>Prerequisites for Credit Points:</b> The credit points will be granted after all relevant work and study work have been successfully completed.									
	CP A	ssignment:								
	Pres	sence	No 1		0.50 CP					
11			No 2		0.50 CP					
	Rele	evant Work	No 1							
	lota				6 CP					
12	<b>Weig</b> 3.45	<b>sht of the module grade for t</b> % (6 of 174 CP)	he overall grade:							
13	<b>Mod</b> none	ule Prerequisites:								
14	<b>Pres</b> Phys to di	<b>ence:</b> ical attendance is mandatory scuss it with fellow students	y in order to present and the teacher. An	the content attendance	of the writt of at least	en scientific text and 80 % is required.				
	Mob	ility/Acknowledgement:								
15	Use	of the module for other cour	se programs	none						
-5	Eng	lish translation of module co	omponents from	No 1: Scier	ntific Writing	3				
	sect	tion 3		No 2: Presentation technique						
16	<b>Resp</b> Prof.	Dr. Herbert Kuchen		Departme University and Econd	<b>nt:</b> of Münster omics	, School of Business				

47	Misc.:
17	Overall, two seminars have to be successfully completed.

### Seminar Bachelor IS 2

Mod	Module Title english:		Seminar Bache	Seminar Bachelor IS 2						
Cou	rse Pro	ogram:	Bachelor Inforr	Bachelor Information Systems						
1	Modu	<b>ile No:</b> Sem2	State: Compuls	lsory Language of Instruction: German or English						
2	<b>Turn:</b> seme	each ester	Duration: 1 sen	nester	Semester: 5	<b>CP:</b> 6	Workload (h)	): 180		
	Modu	ule Structure								
	No	Туре	Course			State	Workload (h	)		
3							Presence (h + CH)	Self- Study (h)		
	1	Seminar	Scientific Writing			Compulsory	24 h (1 CH)	124		
	2	Seminar	Presentation tech	inique		Compulsory	12 h (o CH)	20		
4	The II inform varie are p <b>Main</b> The II inform expe audie <b>Then</b>	S seminar all mation system ty of offered s rerequisites f <b>topics and le</b> S seminar en mation system rience in react ence. Tutors a	ows the students to ns, computer scien specializations. The for an IS seminar. <b>Earning objectives</b> ables students to cons, computer scien ling scientific literations assist the students	o deepe nce or q e conte deepen nce or q ature, so in indiv	en their knowledg uantitative metho nts and methods their knowledge a uantitative metho cientific writing ar vidual meetings in <b>ng objectives</b>	e and skills ir ods. The stude taught in the and skills in a ods. In addition nd presenting n all of these s	n a particular a ents can choo compulsory c specific area on, the studer advanced top steps.	area of se from a ourses of its get bics to an		
	(e.g.	) algorithms,	data science,	knowing and being able to apply concepts and methods of						
	prog engi	ramming lan neering, moo	guages, software Ielling	a specialized IS topic						
	Scie	ntific texts		Reading and understanding scientific literature. Writing scientific texts about an advanced IS topic in a structured, understandable and precise way.						
	Presentation			Orally present the content of the written scientific text using state-of-the-art presentation tools (such as Powerpoint or LaTeX) and defend positions during the discussion						
5	Learr Acad Know	ning outcome emic: ving and bein	<b>s:</b> g able to apply cor	icepts a	ind methods of a	specialized IS	S topic.			

	<b>Soft skills:</b> (among others) media competence, time management, rhetoric, presentation skills.										
6	Desc none	ription of possible electives	within the modules:								
7	Exan	nination: Final Module Exam									
	Rele	vant Work:		1							
8	No	Number and Type; Connecti	on to Course	Duratio	on	Part of final mark in %					
	1	Presentation of a written se final discussion within the g	minar paper includir group	ng ca 20 p max. 6	oages, o min	100 %					
9	Study Work: none										
10	<b>Prerequisites for Credit Points:</b> The credit points will be granted after all relevant work and study work have been successfully completed.										
	CP A	ssignment:									
	Pres	sence	No 1		0.50 CP						
11			No 2		0.50 CP						
	Rele	evant Work	NO 1		5.00 CP						
	1016	11			0 CF						
12	<b>Weig</b> 3.45	<b>sht of the module grade for tl</b> % (6 of 174 CP)	ne overall grade:								
13	<b>Mod</b> none	ule Prerequisites:									
14	<b>Pres</b> Phys to di	<b>ence:</b> ical attendance is mandatory scuss it with fellow students	/ in order to present and the teacher. An	the content attendance	of the writt of at least	en scientific text and 80 % is required.					
	Mob	ility/Acknowledgement:									
15	Use	of the module for other cour	se programs	none							
-5	Eng	lish translation of module co	mponents from	No 1: Scier	tific Writing	g					
	sect	tion 3		No 2: Presentation technique							
16	<b>Resp</b> Prof.	onsible Lecturer: Dr. Herbert Kuchen		Departmen University and Econo	<b>nt:</b> of Münster mics	, School of Business					

47	Misc.:
1/	Overall, two seminars have to be successfully completed.

## Digital Business

Module Title english:			C	Digital Business						
Cou	rse Pr	ogram:	B	Bachelor Information	Systems					
1	Mod	ule No: WI6	S	State: Compulsory	Language of Instruction: German or English					
2	<b>Turn</b> seme	: each winte ester	r D s	<b>Duration:</b> 1 semester	Semester: 5	<b>CP:</b> 6	Wo	rkload (h):	180	
	Mod	ule Structur	e:							
	No	Туре	Course			State		Workload	Workload (h)	
3								Presence (h + CH)	Self- Study (h)	
	1	Lecture	Digital	Business	Compul	sory	30 h (2 CH)	45		
	2	Exercise	Digital Present	Business: Course Ass tations & Discussion	signments,	Compul	sory	30 h (2 CH)	75	
6	Digit fact, orga and l innov (firm envir provi	al Business doing busin nisations, be business mo vation, illust vation, illust	is thrivir less digit oth large odel inno trated by e and a r yen the in troducti	ng and is making sign tally has become an i e and small, across th ovation. It reflects bus / current examples. A market perspective, b ncreasing exposure o on into theoretical ar	g and is making significant inroads in business and everyday life. In ally has become an integral part of everyday life for public and private and small, across the globe. The course introduces business modelling vation. It reflects business transformation, including disruptive current examples. As such the course combines an entrepreneurial narket perspective, by examining constellations of actors in a market creasing exposure of businesses to security threats, the course will on into theoretical and practical security, security strategy and privacy.					
4	Digi	tal Rucinoco	and the	Learning objectives						
	Info	rmation Soc	iety	role of digital innovation. To be able to critically assess the impact of digital innovations and underlying mechanisms.						
	Bus bus	iness model iness model	lling and pattern	To understand the building blocks of business models, to be able to reconstruct existing business models and to develop a business model.						
	Bus	iness transf	ormatior	n To comprehend th assess the role of	ne customer buying Prosuming and se	g cycle and ervice confi	the i gurat	notion of Cl ion.	RM. To	
	Sec	urity and pri	vacy	To comprehend basic mechanisms of encryption and privacy protection and how they can be used for electronic communication.					ation.	
5	Lear Acad	ning outcom emic:	les:							

	Upon completion of the course, students will be able to a) characterize the building blocks and pattern of business models, b) identify and critically examine mechanisms of disruptive innovation, c) assess the impact of digital innovation from the perspective of different stakeholders, d) understand and contribute to current debates about privacy, personalization, net and search neutrality, social cost and benefits of digital innovation. <b>Soft skills:</b> The student should demonstrate the ability         to productively work in groups and         to coordinate with peers.								
6	Description of possible electives within the modules: none								
7	Exan	nination: Examinations for e	very part of the m	nodule					
	Relevant Work:								
	No	No Number and Type; Connection to Course		Duration		Part of final mark in %			
8	1	Written exam		60 min.		50 %			
	2 in groups: Case study (written script with (video-)presentation)			max. 20 pages / max. 20 minutes		50 %			
9	Study Work: none								
10	Prero The o com	equisites for Credit Points: credit points will be granted a pleted.	after all relevant	work and study	work have	been successfully			
	CP Assignment:								
	Pro	sence	No 1		1.00 CP				
11			No 2		1.00 CP				
	Rele	evant Work	No 1		2.00 CP				
	Tota	al	No 2		2.00 CP 6 CP				
12	<b>Weig</b> 3.45	<b>;ht of the module grade for t</b> % (6 of 174 CP)	he overall grade:						
13	<b>Mod</b> Work	<b>ule Prerequisites:</b> king Knowledge of English							
14	<b>Pres</b> Pres	ence: ence is strongly recommende	ed to warrant lear	ming success					
15	Mob	ility/Acknowledgement:							

	Use of the module for other course programs	e of the module for other course Bachelor Business Administration, Bachelor Brams Bachelor Systems				
	al Business					
	components from section 3	No 2: Digital Business: Course Assignments, Presentations & Discussion				
16	16Responsible Lecturer: Prof. Dr. Stefan KleinDepartment: School of Business and Economic					
17	<b>Misc.:</b> This course is intended to be a seminar rath responsibility for learning will rest with the combination of reading, thinking, writing, p for learning. Participation in well-prepared a gaining an appreciation for the critical issue electronic business and more generally an I class activity will be discussion. Students a reading materials, be prepared to discuss th debate their (management) implications. Th on the extent of their motivation, initiative, The instructor's role will be to support the le course materials, mini-lectures, facilitating student's work.	er than a le students. Th resenting, d and thought es relating to nternet Eco re expected ne major iss ne quality of preparation earning expe the discuss	cture course and, as such, the primary ne philosophy behind the course is that the liscussing, and listening is highly effective ful discussions is a powerful way of the development and impact of nomy and Society. Consequently, the main to come to class having read the assigned sues presented in the readings and to f students learning experience will depend for class, and participation during class. erience by providing a course structure, ions, and providing feedback on the			

## IT-Driven Innovation

Module Title english:			IT-Driven	IT-Driven Innovation					
Course Program:			Bachelo	r Information	Systems	5			
1	1 Module No: WI7			ompulsory	Langua	ge of li	nstruction: G	erman or Engl	ish
2	<b>Turn:</b> seme	each winter ester	<b>Duration</b> semeste	<b>:</b> 1 r	Semest	t <b>er:</b> 5	<b>CP:</b> 6	Workload (h)	<b>:</b> 180
	Modu	le Structure	:						
	No Type Course						State	Workload (h	)
3								Presence (h + CH)	Self- Study (h)
	1	Lecture	IT-Driven Inno	vation			Compulsory	30 h (2 CH)	60
	2	Exercise	Exercises in IT	-Driven Inno	vation		Compulsory	30 h (2 CH)	60
4	Modu	le Contents:							
5	Learn	ing outcome	S:						
6	<b>Desc</b> none	ription of pos	ssible electives	within the n	odules:				
7	Exam	ination: Exa	minations for e	very part of t	he modu	le			
	Relev	ant Work:							
	No	Number and	Type; Connect	Connection to Course Durat			on	Part of fin	nal mark
8	1	Written Exar	n			120 M	in	70 %	
	2	Case study ( )presentatio	written script w n) in groups of	n script with (video- max. groups of ca 5 persons 20 m			. 20 pages / max. 30 % ninutes		
9	Study	<b>y Work:</b> none							
10	<b>Prere</b> The c comp	<b>quisites for (</b> redit points v oleted.	Credit Points: will be granted a	after all relev	ant work	and st	udy work hav	e been succe	ssfully
	CP As	signment:							
11	Proc	ence		No 1			1.00 CP		
				No 2			1.00 CP		
				No 1			3.00 CP		

	Relevant Work	No 2		1.00 CP
	Total			6 CP
12	Weight of the module grade for the 3.45% (6 of 174 CP)	e overall grade:		
13	Module Prerequisites: none			
14	Presence: none			
	Mobility/Acknowledgement:			
15	Use of the module for other cours	se programs	none	
	English translation of module co	mponents from	No 1: IT-Dri	ven Innovation
	section 3		No 2: Exerc	ises in IT-Driven Innovation
16	<b>Responsible Lecturer:</b> Prof. Dr. Dr. h.c. Jörg Becker		Departme University and Econd	<b>nt:</b> of Münster, School of Business omics
17	Misc.:			

# Introduction to Economics for IS

Module Title english:			Intro	Introduction to Economics for IS				
Course Program:			Back	elor Information	Systems			
1	1 Module No: VWL1			te: Compulsory Language of Instruction: German or English				
2	<b>Turn:</b> each winter semester		<b>Dura</b> sem	<b>tion:</b> 1 ester	Semester: 5	<b>CP:</b> 6	Workload (h	<b>):</b> 180
	Module Structure:							
	No	Туре	Course			State	Workload (h	)
3	3						Presence (h + CH)	Self- Study (h)
	1	Lecture	Economio	s for IS: lecture		Compulsory	30 h (2 CH)	60
	2	Exercise	Economio		Compulsory	30 h (2 CH)	60	
4	With relies norm econo only o unde and n conce mana desig pecul addre <b>Main</b> The c econo	increasing signature increasing signature ative foundation omics as a keep of the econor rstanding of the nacroeconom epts and ethin agement. The gement. The gement. The sesses basic non topics and lease ourse explain omic policy, a nes	gnificance understar tions in a r ey strand o ny but of s the basic o nic branche cal challer microecor es through e supply o nacroecon earning ob ns basic co and both th	success in busin oding of the basic nodern democrat f the social scien ocial phenomena oncepts underpin es. They also acquinges of a market-h nomic unit deals with institutions, incl r demand side m omic policy issue <b>jectives:</b> oncepts of economic neir methodical a	ness on more co conditions of fu ic society. There ces, leading to a in general. The nning the science uire the compete based economy with individual c uding markets fo ay play a major s. nics, including r nd ethical founce	mplex, espec inctioning ma fore, this cou i fundamenta students dev e of economi ency to apply in democracy hoice under s or digital com role. The mac nicro econom lations.	ially digital, m rkets and the rse introduce l understandi elop a critical cs in its micro the fundamer to issues of s scarcity and w modities whe roeconomic u	harkets ir s ng not economic htal strategic ith the re nit
Fundamentals of Economics Ability to apply fundamental principles of economic r (e.g., scarcity, opportunity cost, thinking at the marging						economic reas the margin) t	oning o	
	Norn mark	native founda kets	ations of	Understandin in democracy strategic man	g the normative and knowing ho agement	prerequisites ow to apply th	s of making bu em to issues	isiness of
	Scar choi com	city and indiv ce, markets a petition	vidual and	Understandin apply concep in the digital o	g of the conditions of functioning markets, ability to ual knowledge to decisions in business, especially conomy			

	The	The larger economy Understanding and applying basic macroeconomic concepts									
5	Learn Acad By th issue Soft : By th found respo	ning outcomes: emic: e end of the course, the st es they will encounter in bu skills: e end of the course, the st dations of markets, and the possibilities in practice.	udents are able to app isiness. udents have acquired ey are enabled to appl	ly fundamental ec a deeper understa y the concepts of i	conomic concepts to unding of the ethical ndividual and corporate						
6	Description of possible electives within the modules: none										
7	Examination: Final Module Exam										
8	Relev No	<b>vant Work:</b> Number and Type; Conne Final Written Exam	ction to Course	<b>Duration</b> 90 min.	Part of final mark in %						
9	Stud	v Work: none			1						
10	Prere The c comp CP As	equisites for Credit Points: redit points will be granted bleted.	d after all relevant wor	k and study work ł	nave been successfully						
	Brog	onco	No 1	1.00	СР						
11		Sence	No 2	1.00	СР						
	Rele	vant Work	No 1	4.00	4.00 CP						
	Tota	l		6 CP							
12	<b>Weig</b> 3.45	ht of the module grade for % (6 of 174 CP)	the overall grade:								
13	<b>Mod</b> none	ıle Prerequisites:									
14	Prese Prese	ence: ence is strongly recommen	ded to warrant learnin	g success							
	Mobi	lity/Acknowledgement:									
15	Use	of the module for other co	urse programs	none							
_ <b>_</b>	Eng	ish translation of module	components from	No 1: Economics	for IS: lecture						
	sect	ion 3		No 2: Economics	for IS: tutorial						

16	<b>Responsible Lecturer:</b> Professor Dr. Gernot Sieg	<b>Department:</b> School of Business and Economics
17	<b>Misc.:</b> Regular work on the course topics is strongly recomme one another.	nded as they are closely related towards

# Approved Internship

Mod	dule Tit	le english:	Approved Internshi	Approved Internship						
Cou	rse Pro	ogram:	Bachelor Information Systems							
1	Modu	e No: WPr State: Elective Language of Instruction: German or English								
2	Turn: seme	each ster	Duration: 1 semester		Semester: 5 or 6	CP:	6	Woi	rkload (h): 1	180
	Modu	Ile Structure:	:							
	No	Туре	Course			S	State		Workload	(h)
3									Presence (h + CH)	Self- Study (h)
	1		Internship and corres	spo	onding documentation	on C	Compul	sory	oh (o CH)	180
4	The s comp bach <b>Main</b> The a study Comp a rep addit as e.s interr	tudents are a sulsory course elor thesis. <b>topics and le</b> pproved inte the core are outer Science ort document ion, they hav g. Powerpoint iship begins.	earning objectives: rnship offers students a of the internship shi or Business Administr ting how they solved th to present their solut t). The subject of the in Depending on the sub	be ne th all rat tio	able to apply the co d in the internship c e chance to gain pra be Information Syst tion. After the interns practical problem w on in a talk using con ernship has to be cor ect, ethical aspects w	an be actica tems, ship, hich itemp nfirmo vill be	ots and e helpf d expe , Quant the pa was as porary p ed by t e cover	meth ful wh rience titativ rticip ssigne prese he tu red.	nods taught en writing t e during the ve Methods pants have t ed to them. entation too tor before t	t in the the eir , co write In ols (such he
	Inter	nes nship	Independently get	es tin	ig acquaintanted wit	:h a c	omple	x tasl	k. Independ	lent
	Repo	ort	application of lear Describing the dev structured, unders	ne vel sta	ed methods and conc oped solution of the ndable, and precise	cepts give way	to solv n prob in a sci	ve a p lem i ientif	practical pro n a well- ic paper.	oblem.
5	Report       Describing the developed solution of the given problem in a well-structured, understandable, and precise way in a scientific paper.         Learning outcomes:       Academic:         The students gain experience w.r.t. the practical application of the concepts and methods learned in their study. They learn to align theoretical approaches and practical experience.         Soft skills:         The students learn to write scientific texts and present their contents orally using contemporary presentation tools (such as e.g. Powerpoint). The required skills such as (among others) media competence, time management, rhetoric, and presentation technique are conveyed in a private						learned oorary nedia rivate			

6	Description of possible electives within the modules: none										
7	Exam	ination: Examinations for ev	very part of the mod	dule							
	Relev	vant Work:		1							
Q	No	Number and Type; Connecti	on to Course	Duration		Part of final mark in %					
0	1 Report and Presentation			20 pages, 3 min	0	100 %					
9	Study Work: none										
10	<b>Prerequisites for Credit Points:</b> The credit points will be granted after all relevant work and study work have been successfully completed.										
	CP Assignment:										
11	Pres	sence	No 1		0.00	СР					
	Rele	vant Work	No 1		6.00 CP						
	Tota	l		6 CP							
12	<b>Weig</b> 3.45%	ht of the module grade for th % (6 of 174 CP)	ie overall grade:								
13	<b>Modu</b> none	ıle Prerequisites:									
14	<b>Prese</b> Prese	ence: ence at the collaborating ente	erprise is mandato	у.							
	Mobi	lity/Acknowledgement:									
15	Use	of the module for other cours	se programs	none							
	English translation of module components from section 3No 1: Internship and corresponding documentation										
16	<b>Resp</b> Prof.	<b>onsible Lecturer:</b> Dr. Herbert Kuchen		Department School of Bu	: usines:	s and Economics					
17	Misc.:         The rules of the examination office have to be taken into account when applying for an internship.         Moreover, the subject of the internship has to be confirmed by the tutor, before the internship begins.										

# Marketing Management

Module Title english:				Marketing Management						
Course Program:				Bachelor Information S	Systems					
1   Module No: BWL 3			3	State: Compulsory	Language of Instruction: English					
2	2 <b>Turn:</b> each summer semester			Duration: 1 semester	Semester: 1	or 2	<b>CP:</b> 6	Workload (h): 180		
	Modu	ıle Structure	:							
	No	Туре	Cour	se		State		Workload (	h)	
3								Presence (h + CH)	Self- Study (h)	
	1	Lecture	Mark	eting Management		Comp	oulsory	30 h (2 CH)	60	
	2 Exercise Tutor			rial on Marketing Manag	ement	Comp	ulsory	30 h (2 CH)	60	
	cours Cours This o well a	ses. se content: course provid as the specifi nes	les a b ic obje	basic introduction to asp actives and instruments of <b>Learning objectives</b>	ects of strate of marketing.	gic and	l operat	tional marke	eting as	
	Marl	keting and		To comprehend the complex relationship of marketing and strategic,						
4	Marketing Strategies			To learn to understand marketing as a complex process of strategic decision making steps in a competitive economic system.						
4	Strat Prob	tegic Decisio Ilems	n	To understand, differentiate, and analyze distinctive components of decision making in marketing practice.						
	Bran	id Managem	ent	To understand basic branding strategies. To describe basic options of branding architecture options (focus is on brand transfer).						
	Product Development			To describe basic step: customers' needs.	s when devel	oping r	iew pro	ducts based	lon	
	Prici	ng		To know factors and m optimal prices for spec	ethods that ir ific market co	nfluenc onditio	e pricin ns.	ig. To compi	ıte	
	Dist	ribution		To describe basic step	s when imple	mentin	g new o	distribution	strategies.	
	Com	munication		To describe basic elem understand factors tha campaigns.	To describe basic elements when creating communication strategies. To understand factors that influence the effectiveness of advertising campaigns.					

5	<ul> <li>Learning outcomes:</li> <li>Academic:</li> <li>After completing the course, students have a sound basic knowledge of marketing. Based on the knowledge students acquired throughout the course, the students are able to classify and structure marketing challenges and make recommendations for management decisions. The students know various methods and instruments to solve marketing-relevant problems. Furthermore, the students have knowledge of latest developments in strategic and operative marketing.</li> <li>Soft skills:</li> <li>The students have an overview of relevant problem areas in marketing (extending knowledge). In addition, students can apply the knowledge they have acquired in developing marketing strategies and develop situation-specific problem solutions (instrumental competence). In addition, students learn to exchange information and problems and develop joint approaches to solutions (communicative skills).</li> </ul>								
6	Description of possible electives within the modules: none								
7	Examination: Final Module Exam								
8	Relevant Work:NoNumber and Type; Connection to CourseDurationPart of final mark in %								
	1 Final written exam		90 min.	100 %					
9	Study Work: none								
10	<b>Prerequisites for Credit Points:</b> The credit points will be granted completed.	after all relevant woi	rk and study work	have been successfully					
	CP Assignment:								
	Proconco	No 1	1.0	o CP					
11		No 2	1.0	o CP					
	Relevant Work	No 1	4.0	o CP					
	Total 6 CP								
12	Weight of the module grade for the overall grade: 3,3%								
13	Module Prerequisites: none								
14	<b>Presence:</b> Attendance is strongly recomme	nded to warrant lear	ning success						
15	Mobility/Acknowledgement:								

	Use of the module for other course programs	Bachelor Economics, Bachelor Business Administration, Bachelor Mathematics, Master Physics								
16	<b>Responsible Lecturer:</b> Professor Dr. Thorsten Wiesel		<b>Department:</b> School of Business and Economics							
17	Misc.:									
Mod	dule Ti	tle english:	Ma	Management Accounting and Control						
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Cou	rse Pro	ogram:	Bac	helor Information S	Systems					
1	Modu	<b>ile No:</b> BWL 5	; Sta	<b>te:</b> Compulsory	Language of	Instru	ction: O	ierman		
2	Turn: each winter semester D			<b>ation:</b> 1 semester	Semester: 3	or 4	<b>CP:</b> 6	Workload	<b>l (h):</b> 180	
	Modu	le Structure	:							
	No	Туре	Course			State		Workload (h	)	
3								Presence (h + CH)	Self- Study (h)	
	1	Lecture	Manager	nent Accounting		Comp	oulsory	30 h (2 CH)	60	
	2	Exercise	Tutorial o	on Management Ac	counting	Comp	oulsory	30 h (2 CH)	60	
4	Purpo The c bach and c funct sales contr Cours This i decis inforn withi area comp integ syste are d	ontent of the mo ontent of this elor program control aspec- ion to lecture , or production olling depart <b>se content:</b> module deals ion support a mation for pri- n the framew of behavioral banies are inver- rated manag ms. With the eepened and	s module / inte s module i and focus ts in line v es that illus on) and als ments in b s with the u and behav ice, produc ork of the l control, the volved to a ement sys help of gu l a profour	gration into curriculs s based on the intri- ses on the use of co- vith corporate objec- strate aspects with so deals with activi- ousiness practice (e- use of information ( ior control in comp- ction, or marketing annual corporate p- he vertical and hori- lign the entire orga- tems such as the B- uest lectures, exerci- ind understanding o	oductory modu st and revenue ctives. The mod in the value ch ties of manage e.g., corporate (especially fror anies. In the an and sales deci lanning and bu zontal coordin nization with c alanced Score ises, and supp n the part of th	ules ta e acco dule th ain of ement planni n cost rea of isions, udgeti ation commo card a lemen ne stuc	ught in unting f nus form a comp consult ing and and rev decision , which ng, is in of depa on goals nd their tary tut dents is	the first year for business of as a cross-sec any (e.g., ma ancies and op budgeting). Yenue accoun n support, the are typically r the foregrou rtments and a s. The focus h c link to incen orials, relevan made possib	of the lecisions ctional rketing, perative ting) for e use of nade nd. In the actors in ere is on tive nt topics le.	
	Ther Intro	nes duction to Co	ontrolling	<b>Learning objectives</b> The students understand the importance of controlling as part of the management process and can differentiate between controllin as a function and controllership. Further, they distinguish between decision support and behavior control as central tasks of controlling.					part of ontrolling between	
	Fund Acco	lamentals of ounting	Cost	The students und centers, and inte accounting.	lerstand the im rnal cost alloca	nporta ation a	nce of c is prere	ost types, cos quisites for co	st ost	

# Management Accounting and Control

Allocation of Overhead Costs	The students develop an understanding of the concept of overhead calculations and can apply it in a differentiated manner. Further, the students are able to contextualize the importance of the allocation of overhead costs under the causation principle.					
Process Costing and Process Management	The students learn about the problems associated with traditional overhead calculation and can allocate overhead costs based on process costing. They will also learn about the principles, advantages, limits, and fields of application of process costing.					
Income Statement	The students learn to determine the profit for the period based on the nature and function of the expense method. Further, attention is paid to the different method's impact on the profit for the period. In addition, the students know methods to determine unit costs.					
Approaches to Planning and Budgeting	The students develop an understanding of the contents and the process of planning and budgeting in the company and learn about alternative forms of budgeting (e.g., Beyond and Better Budgeting).					
Operational Planning and Decision within the Scope of Budgeting	The students learn to determine product prices and quantities based on information from cost accounting and are able to make production decisions. In addition, the students know essential aspects of market-related planning (e.g., ABC analysis, portfolio analysis, and customer profitability analysis).					
Break-even Analysis and Operating Leverage	The students know how to extract information from cost accounting to determine break-even points and can assess the operative risk of a company (Operating Leverage).					
Budget consolidation	The students are able to carry out the operative budgeting in a company based on a so-called "master budget".					
Variance Analysis	The students understand how the budgeting process can be controlled and how it is connected to behavioral control. They are able to mathematically identify and interpret the causes of deviations from the plan.					
Management Control 1: Budget-related Incentive Models	The students understand the concept of agency theory and can point out problem areas and possible solutions of budget-related incentive models.					
Management Control 2: Performance Measures and Performance Measurement Systems	The students learn about the characteristics and usefulness of performance measures and performance measurement systems. In addition to financial performance measures, particular attention is paid to non-financial performance measures.					
Controlling-Analytics	The students understand the importance of data-driven corporate management. The focus here is on uncovering critical success drivers, recognizing causal relationships between them, and making management decisions based on them. In addition, the visualization of data for decision-making is addressed.					
Learning outcomes: Academic: On successful completion of cost accounting and make d importance and implementa to influence the cost structu	f this module, students are able to - extract relevant information from ecisions from a management perspective understand the ition of a planning and budgeting process discuss suitable actions re of a company and justify decisions in this regard economically					

	understand the importance of information asymmetries in coordination processes and are able to identify possible solutions apply learned concepts into practical applications of controlling departments. <b>Soft skills:</b> On successful completion of this module, students are able to - solve unfamiliar problems based on theoretical frameworks and structured approaches understand, critically reflect on, and apply findings from academic literature justify their decisions with a clear and logical argumentation connect the dots between academic insights and practical applications.								
6	Description of possible electives within the modules: none								
7	Exam	ination: Final Module Exam							
	Relev	vant Work:		I		l			
8	No	Number and Type; Connect	ion to Course	Du	ration	Part of final mark in %			
	1	Final written exam		90	min.	100 %			
9	Study	y Work: none							
10	<b>Prerequisites for Credit Points:</b> The credit points will be granted after all relevant work and study work have been successfully completed.								
	CP Assignment:								
	Pres	ence	No 1		1.00	CP			
11			No 2		1.00	CP			
	Rele	want Work	No 1		4.00	4.00 CP			
	Tota	l	6 CP						
12	<b>Weig</b> 3,3%	ht of the module grade for t	he overall grade	:					
13	<b>Modu</b> Reco	<b>ıle Prerequisites:</b> mmended: basic knowledge	in accounting.						
14	<b>Prese</b> Prese	ence: ence is strongly recommende	ed to warrant lea	arning su	ICCESS.				
	Mobi	lity/Acknowledgement:							
15	Use	of the module for other cou	rse programs	Bachel Admini Physics	chelor Economics, Bachelor Business ministration, Bachelor Mathematics, Master ysics, Master Business Chemistry				
16	<b>Resp</b> Profe	onsible Lecturer: ssor Dr. Martin Artz			<b>Department:</b> School of Business and Economics				

17	Misc.:
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### Management & Governance

Мос	dule Ti	tle english:		Management & Goverr	nance					
Cou	rse Pro	ogram:		Bachelor Information S	Systems					
1	Modu	<b>ile No:</b> BWL 6	6	State: Compulsory	Language o	f Instru	ction: G	German		
2	Turn: each winter semester			Duration: 1 semester	Semester: 3	or 4	<b>CP:</b> 6	Workload (h): 180		
	Modu	le Structure	:							
	No	Туре	Cou	rse		State	9	Workload (h)		
3								Presence (h + CH)	Self- Study (h)	
	1	Lecture	Orga	anization and Managem	ent	Com	oulsory	37.5 h (2 CH)	45	
	2	Lecture	Corp	oorate Governance	oulsory	37.5 h (2 CH)	45			
	3	Exercise	Tuto	orial on Management & O	Sovernance	Com	oulsory	15 h (1 CH)	30	
4	<ul> <li>Module Profile:</li> <li>Purpose of the module/integration into curriculum</li> <li>The module conveys fundamental aspects of Management and Governance</li> <li>Course content:</li> <li>The substantive focus is on the areas of organization, business strategy, human resources management (staffing) and corporate governance. Here, the various concepts will be presented and their strengths and weaknesses will be analysed. These concepts will be illustrated on the basis of selected case studies.</li> </ul>									
	Ther	nes			Learning	object	ives			
	Orga Hum	anisational D an Ressourc	esign e Mar	; Strategic Management nagement	; Understa Manager	Understanding of the basics of Organization Management				
	Corp Worl	oorate Goverr king Council	nance	; Two Tier System;	Understa Governar	nding once	of the ba	asics of Corp	orate	
5	Learning outcomes:         Academic:         The students know different forms of organization, different types of strategies, concepts of human resource management (staffing) and systems of corporate governance. They are in the position to evaluate different management- and process-structures in terms of their efficiency.         Soft skills:         none									

6	Description of possible electives within the modules: none							
7	<b>Examination:</b> Final Module Exam							
	Relevant Work:							
8	No Number and Type; Connecti	on to Course	Dur	ation	Part of final mark in %			
	1 Final written exam		120 mm.		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.							
	CP Assignment:							
		No 1		0.75	СР			
11	Presence	No 2		0.75	СР			
		No 3		0.50	СР			
	Relevant Work	No 1		4.00	СР			
	Total			6 CP				
12	Weight of the module grade for th 3,3%	ne overall grade:						
13	Module Prerequisites: none							
14	<b>Presence:</b> Presence is strongly recommende	d to warrant learni	ng su	ccess				
	Mobility/Acknowledgement:							
15	Use of the module for other cour	se programs Ad Ph	Bachelor Economics, Bachelor Business Administration, Bachelor Mathematics, Master Physics					
16	<b>Responsible Lecturer:</b> Professor Dr. Gerhard Schewe			<b>Department:</b> School of Business and Economics				
17	Misc.:							

### Strategy Science

Мос	lule Tit	le english:		Strategy Science	Strategy Science					
Cou	rse Pro	ogram:		Bachelor Information S	Systems					
1	Modu	ı <b>le No:</b> BWL 7	,	State: Compulsory	Language of	<sup>:</sup> Instru	<b>iction:</b> E	English		
2	Turn: seme	each summe ster	er	Duration: 1 semester	Semester: 3	or 4	<b>CP:</b> 6	Workload	l <b>(h):</b> 180	
	Modu	Ile Structure:	:							
	No	Туре	Cour	'Se		State	<u>!</u>	Workload (h	)	
3								Presence (h + CH)	Self- Study (h)	
	1	Lecture	Strat	egy Science		Comp	oulsory	30 h (2 CH)	60	
	2	Exercise	Tuto	rial Strategy Science		oulsory	30 h (2 CH)	60		
4	Purpo This r corpo basic Cours This r cover mergo resea miles stude cover	bse of the mo nodule proviorate strategy statistics. Se content: module proviors fundament ers and acqu arch. At the sa stones of the ents also lear red is illustra	dule/ des and and r des fu al top isitior ame ti strate n the ted by	integration into curricul n introduction to strateg elated empirical-quantit indamental knowledge i ics such as portfolio ma is and provides an overv me, students acquire th gic management literatu basics of quantitative m guest lectures and case	lum ic managemen tative research n the strategic nagement, gro view of the cur e fundamenta ure. In the con odeling. The p e studies.	nt, with h. It red owth s rrent si ils of s text of oractic	h a part quires p agemen trategie tate of s cientific evalua al relev	icular focus o prior knowled t of companie s, alliances a strategic man working bas ting strategic ance of the co	n ge of es. It is well as agement ed on key options, ontent	
5	Learning outcomes: Academic: Students will - develop a comprehensive understanding of basic theories, concepts and instruments of corporate strategy - critically question the content covered and place it in the context of current empirical research - learn and practice the essential principles of scientific working - acquire the necessary theoretical and methodological knowledge for quantitative modeling of strategic options - deepen the acquired knowledge by means of selected case studies									
6	<b>Desci</b> none	ription of pos	sible	electives within the mo	dules:					
7	Exam	ination: Fina	al Moc	lule Exam						
8	Relev No	ant Work: Number and	Туре	; Connection to Course	Duration		F	Part of final m	ark in %	

	1	Written exam		120 M	in.	75 %					
	2	written assignment		maximum of 10 pages		25 %					
9	Study Work: none										
10	<b>Pren</b> The com	requisites for Credit Points: credit points will be granted pleted.	after all relevant	work an	d study work ha	ve been successfully					
	CP /	CP Assignment:									
			No 1		1.00 C	р					
11	Pre	sence	No 2		1.00 C	Р					
	Bal	overt Work	No 1		3.00 C	3.00 CP					
	Ret	evant work	No 2		1.00 C	р					
	Tot	al			6 CP						
12	<b>Wei</b> 3,3%	<b>ght of the module grade for t</b> %	he overall grade	:							
13	<b>Moc</b> non	<b>lule Prerequisites:</b> e									
14	<b>Pres</b> Pres	sence: sence is recommended to wa	rrant learning su	ccess.							
	Mot	oility/Acknowledgement:									
15	Use	e of the module for other cou	rse programs	Bachel Admini	or Economics, E stration	Bachelor Business					
16	<b>Responsible Lecturer:</b> Prof. Dr. David Bendig				<b>Department:</b> University of Münster, School of Business and Economics						
17	Mis	C.:									

Module Title english:				Financial Accounting a	Financial Accounting and Taxation					
Cou	rse Pr	ogram:		Bachelor Information S	Systems					
1	Mod	ule No: BWL	8	State: Compulsory	Language of I	nstru	i <b>ction:</b> Ge	erman		
2	<b>Turn</b> seme	each summ	er	<b>Duration:</b> 1 semester	Semester: 3 0	r 4	<b>CP:</b> 6	Workload	<b>(h):</b> 180	
	Mod	ule Structure	:							
	No	Туре	Cour	se		State		Workload (	h)	
					al Accounting				Self- Study (h)	
3	1	Lecture	Finar	ial Accounting			npulsory	22.5 h (1 CH)	45	
	2	Lecture	Princ	iples of Corporate Taxa	tion	Compulsory		22.5 h (1 CH)	45	
	3	Exercise	Tuto	rial on Financial Accoun	Cor	npulsory	7.5 h (o CH)	15		
	4	Exercise	Tuto	rial on Principles of Corp	oorate Taxation	Cor	npulsory	7.5 h (o CH)	15	
4	Module Profile:         Purpose of the module/integration into curriculum         The course Financial Accounting extends and deepens the contents that have been taught in the field of financial accounting within the compulsory course Foundations of Corporate Accounting. The course "Principles of Corporate Taxation" provides first insights into the field of taxes. In this regard it shows the tax-related consequences of business decisions and, on the other hand, how tax law influences business reality.         Course content:         The module deepens the knowledge of financial accounting in the field of national as well as international individual financial statements and corporate taxation. The focus of the preparation of annual financial statements is on the recognition and measurement regulations with regard to German accounting principles. These regulations are theoretically dealt with, but the objective is also to get a deeper understanding of the topics in question by means of numerous examples. The corresponding principles and rules of the International Financial Reporting Standards (IFRS) are also presented. Moreover, insights into the main features of consolidated financial statements are provided. A balanced interplay between a theoretical basis and the application of the contents taught in the course are consistently pursued. In the field of corporate taxation the basic principles of taxes on income, i.e. income tax, corporation and trade tax as well as potentially the basics of further different types of taxation (e.g. value-added tax) or the General Fiscal Code are covered. The economic effects of the tax standards in question are analysed. The theoretical lecture's contents of the course are illustrated with the help of several exercise elements or practice cases, respectively. The exercises are presented during the lecture and in preceive the tot stand the during									

## Financial Accounting and Taxation

5	Learning outcomes: Academic: After having successfully completed the module, students have a profound knowledge of the preparation of individual financial statements based on the German Commercial Code and the tax law. They are aware of the tax implications of different legal forms. They know crucial differences between the systems of accounting rules under German GAAP and IFRS as well as the differences between individual and consolidated financial statements and the tax accounts. Furthermore, students are able to apply the knowledge acquired to practical accounting problems and to assess the effect of taxes on business decisions. Soft skills: Having passed the module students are able to analyze theoretical questions in a profound way and identify and solve practical problems in a differentiated way. The students acquire the knowledge through a combination of lecture, pre- and post-preparation on the lecture material and exercises. Students are guided to search for information on their own, e.g. in the library, journals, internet etc. The solutions to the exercises are actively discussed and moderated in practice sessions.							
6	Description of possible electives within the modules: none							
7	<b>Examination:</b> Examinations for every part of the module							
	Relev No	vant Work: Number and Type; Connect	ion to Course	Duration	Part of final mark in %			
8	1	Written exam on Financial A	ccounting	60 min.	50 %			
	2	Written exam on Principles Taxation	of Corporate	60 min.	50 %			
9	Stud	<b>y Work:</b> none						
10	Prere The c comp	equisites for Credit Points: redit points will be granted a pleted.	after all relevant wor	k and study wo	rk have been successfully			
	CP A	ssignment:						
			No 1	0.	75 CP			
	Drog		No 2	0.	75 CP			
11	Pres	sence	No 3	0.	25 CP			
			No 4	0.	25 CP			
	Rele	want Work	No 1	2.	00 CP			
			No 2	2.	00 CP			
	Tota	ıl		6	CP			
12	<b>Weig</b> 3,3%	ht of the module grade for the	ne overall grade:					

13	<b>Module Prerequisites:</b> Recommended: Knowledge from the module Foundations of Accounting						
14	<b>Presence:</b> Presence is recommended to warrant learning success						
	Mobility/Acknowledgement:						
15	Use of the module for other course programs Bachelor Economics, Bachelor Business Administration						
16	<b>Responsible Lecturer:</b> Prof. Dr. Hans-Jürgen Kirsch, Professor Dr. Christo Watrin	oph	<b>Department:</b> School of Business and Economics				
17	Misc.:						

### Corporate Finance

Mod	Module Title english:			Corporate Finance	Corporate Finance						
Cou	rse Pro	ogram:		Bachelor Information S	Systems						
1	Modu	<b>ile No:</b> BWL 9	)	State: Compulsory	Language of	Instru	iction: I	Eng	glish		
2	<b>Turn:</b> each summer semester			Duration: 1 semester	Semester: 3	or 4	<b>CP:</b> 6		Workload	<b>(h):</b> 180	
	Modu	le Structure	:								
	No Type Cours			se		State		w	Workload (h)		
3								Pı (h	resence ı + CH)	Self- Study (h)	
	1	Lecture	Corp	orate Finance		Comp	oulsory	30	o h (2 CH)	90	
	2	Exercise	Tutor	ial on Corporate Financ	е	Comp	oulsory	30	o h (2 CH)	30	
4	Purpe The n focus quest The d the vi conce grour "inve unde Cours The c princ discu learn and s differ a onli prepa Ther Valu unce	ose of the monodule "Corp on the unce tion to what of iscussion bu aluation of se urrently impro- ndwork for th stments" in g r certainty. Se content: ourse introdu- iples of asset ssed and the how compar- securities car ent concepts ine-tutorial the aration.	odule/ porate rtainty extend illds of ecurition ove the e elect greate uces si t pricir e Modi nies sh n be va s of mu nat giv	integration into curricul Finance" analyses finan of the consequences. T lequity or debt should b in a thorough understand es and corporations. Lea e student's ability to ma tive finance module in the r detail. Prerequisite for tudents to portfolio theo in financial markets ( gliani-Miller irrelevance fould optimally satisfy the ilued. Additionally, the so ilti-period business values students the opportu- business values students the opportu- tudents the opportu- curcertain consequent decision-making. To understand the ris financial securities a	lum cial decision- bis includes of be used to fina- ding of the fur arning about a lke smart final he 6th semest the course is ory and develo CAPM). Furthe theorem is pu- heir financial n students will lo tation. The tut unity to discus	makin capital ance th actioni isset p ncial d cer whi the co ops an ermore ut into needs earn to orial w s exer or eval appro charac of div	g in con investr ne firm's ng of fin ricing n ecision ch will a mprehe unders , capita perspe and hor o use ar vill be p cises w uating a priateno teristics ersifica	npa ner s in nar no is. add ens tar it ith alte ess s of tion	anies with a nt decision ivestment p ncial marke dels will The course dress the to ion of value nding of ba tructure iss ve. Student nvestment select betw ly in class, the tutor a ernatives w s for financi f combinati n.	a special s and the projects. its and lays the ppic ation sic ues are ts will projects reen partly as s exam	

	Сар	ital Asset Pricing	To learn about the valuat standard model of marke	ion of securiti t equilibrium.	ies in ca	apital markets and the		
	Moc and	lel Cost of capital capital structure	To identify the pivotal fac structure. To assess a co	tors in detern npany's cost	nining t of capi	the optimal capital tal.		
	Bus	iness Valuation	To use discounted cash f	low methods	in busi	ness valuation.		
	Adv Valu	anced Business lation	To understand multiple p changing capital structur	eriod valuations and the inf	on mod fluence	lels which allow for of taxation.		
5	Learning outcomes: Academic: After completing this module the students have fundamental knowledge about asset pricing concepts in capital markets. They are able to explain relationships between risk, return and cost of capital. They can analyze the effects of a change in the capital structure of a company on the value and the risk of this company. The students can choose and employ suitable valuation approaches for the respective task. Soft skills: The self-preparation of the students for the lecture facilitates the ability of the students to manage themselves and their time in a more effective and efficient way. The analysis of complex financial problems helps them to solve problems in a structured way. The interactive character of the lectures and tutorials strengthens the student's discussion-skills in the academic context. As lecture and tutorial are taught in English, the students' 'Business English' proficiency is improved.							
6	Description of possible electives within the modules: none							
7	Exan	nination: Final Modu	e Exam					
	Relevant Work:							
8	1	Final writton oxam						
	1			120 mm.		100 %		
9	Stud	<b>y Work:</b> none						
10	Prere The c comp	equisites for Credit Pe credit points will be g pleted.	<b>bints:</b> ranted after all relevant wo	ork and study	work h	ave been successfully		
	CP A	ssignment:						
	Prod		No 1		1.00 (	CP		
11			No 2		1.00 (	СР		
	Rele	evant Work	No 1		4.00	СР		
	Tota	Total 6 CP						
	Iotal     6 CP       Weight of the module grade for the overall grade:							

13	<b>Module Prerequisites:</b> Basic knowledge in business administration and economics. Recommended modules: Principles of Business, Foundations of Accounting, Financial Accounting and Taxation, Microeconomics I, Macroeconomics I, Statistics						
14	<b>Presence:</b> Presence is recommended to warrant learning su	iccess					
	Mobility/Acknowledgement:						
15	Use of the module for other course programs	Bachele Adminis Physics	elor Economics, Bachelor Business nistration, Bachelor Mathematics, Master cs				
16	<b>Responsible Lecturer:</b> Prof. Dr. Thomas Langer		<b>Department:</b> School of Business and Economics				
17	Misc.:						

### Marketing Analytics

Mod	dule Ti	tle english:		Marketing Analytics					
Cou	rse Pro	ogram:		Bachelor Information S	Systems				
1	Mod	ule No: BWL 1	10	State: Compulsory	Language	of Insti	uction:	English	
2	<b>Turn</b> : seme	each summe ester	er	Duration: 1 semester	Semester: 4	Semester: 3 or 4 CP: 6		Workload	<b>l (h):</b> 180
	Mod	ule Structure	:						
	No	Туре	Course	1		State		Workload (h	1)
3								Presence (h + CH)	Self- Study (h)
-	1	Lecture	Market	Research		Comp	oulsory	22.5 h (1 CH)	45
	2	Lecture	Market	ing Operations	oulsory	22.5 h (1 CH)	45		
	3 Exercise Tutorial on Marketing Analytics					Comp	oulsory	15 h (1 CH)	30
4	Modu Purp The r Scier	ule Profile: ose of the mo nodule builts nce 1 and Dat	odule/in s on the o	tegration into curriculu contents of the modules e 2.	<b>m</b> 5 Marketing	g Manag	ement,	Analysis for	B&E, Data
5	Acad M	emic:	-3.						
6	Desc none	ription of pos	ssible el	ectives within the modu	ıles:				
7	Exam	<b>ination:</b> Exa	minatio	ns for every part of the n	nodule				
	Relev	ant Work:			1		I		
8	No	Number and	l Type; C	connection to Course	Durati	on	Pa	art of final ma	ark in %
	1	Written exa	m on Ma	rket Research (No. 1)	60 mi	n.	50	» %	
	2	written exai	m on Ma	rketing Operations (No.	3)   60 mi	n <b>.</b>	50	0 %	
9	Stud	<b>y Work:</b> none	<u>)</u>						
10	Prere The c comp	equisites for redit points pleted.	<b>Credit Pe</b> will be g	<b>Dints:</b> ranted after all relevant	work and s	study wo	ork hav	e been succe	ssfully

	CP Assignment:							
		No 1		0.75 CP				
	Presence	No 2		0.75 CP				
11		No 3		0.50 CP				
	Polovant Work	No 1		2.00 CP				
		No 2		2.00 CP				
	Total			6 CP				
12	Weight of the module grade for the overall grade: 3,3%							
13	Module Prerequisites: Recommendation: Modules Marketing Management, Mathematics-/Statistics-Modules							
14	<b>Presence:</b> Presence is strongly recommende	ed to warrant lea	arning suc	ccess				
	Mobility/Acknowledgement:							
15	Use of the module for other cou	rse programs	Bachelo Adminis	or Economics, Bachelor Business stration				
16	<b>Responsible Lecturer:</b> Professor Dr. Manfred Krafft			<b>Department:</b> School of Business and Economics				
17	Misc.:							

### Entrepreneurial Marketing

Mod	lule Tit	le english:		Entrepreneurial Mark	eting					
Cou	rse Pro	gram:		Bachelor Information	Ssten	ns				
1	Modu	I <b>le No:</b> BWL 1	1	State: Elective	Lang	uage of	Instru	ction: E	nglish	
2	<b>Turn:</b> seme	each summe ster	er	Duration: 1 semester	Semester: 5 or 6 CP: 6		<b>CP:</b> 6	Workload	<b>l (h):</b> 180	
	Modu	le Structure	:							
	No	Туре	Cours	ie .			State		Workload (h	)
3									Presence (h + CH)	Self- Study (h)
	1	Lecture	Entre	preneurial Marketing			Comp	oulsory	30 h (2 CH)	60
	2	Exercise	Tutor	ial Entrepreneurial Ma	l Entrepreneurial Marketing Co				30 h (2 CH)	60
4	Purpo The m deepo Cours The a metho into t	ose of the mo nodule builds ens context-s ie content: im of the Ent odological ku he challenge	odule/i s on the specific repren nowled es of En	ntegration into curricu e courses "Marketing A c knowledge in the res eurial Marketing cours ge about the topic Ent trepreneurial Marketir	Ilum Manago pective e is to repren ig that	ement" a e domair provide eurial M contribu	and "N ns stude arketin ute to t	larketin nts with ng. The he succ	g Analytics" a n theoretical a students gair cess of new co	and and a insights ompanies.
5	Learning outcomes:         Academic:         Upon completion of this course, students are able to         -       understand and explain essential terms, concepts, models, instruments, and methods from the area of services marketing/ entrepreneurial marketing.         -       recognize and analyze specific challenges of service provision/ entrepreneurial marketing successfully.         Soft skills:       Upon completion of this course the student is able to         -       solve problems efficiently and in a socially desirable manner in an (international) team; prepare and communicate results of this team work.         -       solve topic-specific cases effectively.									
6	<b>Desci</b> none	iption of pos	ssible e	electives within the mo	odules	:				
7	Exam	ination: Fina	al Mod	ule Exam						
8	Relev No	ant Work: Number and	l Type;	Connection to Course		Duratio	n	Pa	art of final ma	rk in %

	1 Written exam		90	min.	100 %			
9	Study Work: none							
10	<b>Prerequisites for Credit Points:</b> The credit points will be granted a completed.	after all relevan	t work ar	id study work h	ave been successfully			
	CP Assignment:							
		No 1		1.00	CP			
11		No 2		1.00	CP			
	Relevant Work	No 1		4.00	СР			
	Total			6 CP				
12	Weight of the module grade for the overall grade: 3,3%							
13	<b>Module Prerequisites:</b> Recommended: Modules "Market	ting Manageme	ent" and "	Marketing Ana	lytics".			
14	<b>Presence:</b> Presence is strongly recommende	ed to warrant le	arning su	ICCESS.				
	Mobility/Acknowledgement:							
15	Use of the module for other cou	rse programs	Bachel Adimini	or Economics, stration	Bachelor Business			
16	<b>Responsible Lecturer:</b> Professor Dr. Thorsten Wiesel			<b>Department:</b> School of Business and Economics				
17	Misc.:							

### Human Resource Management & Entrepreneurship

Mod	dule Ti	tle english:		Human Resource Mar	nagement & Entreprer	neurship				
Cou	rse Pr	ogram:		Bachelor Information	Systems					
1	Mod	ule No: BWL	12	State: Elective	Language of Instruc	<b>ction:</b> German				
2	<b>Turn</b> seme	each ester		Duration: 1 semester	Semester: 5 or 6	Workload (h	<b>Vorkload (h):</b> 180			
	Mod	ule Structur	e:							
	No	Туре	Cou	rse		State	Workload	Workload (h)		
3							Presence (h + CH)	Self- Study (h)		
	1	Lecture	Hun Enti	nan Resource Managen repreneurship	nent &	Compulso	ry 30 h (2 CH)	60		
	2	Exercise	Tuto Enti	orial Human Resource M repreneurship	Management &	Compulso	ry 30 h (2 CH)	60		
	In thi spec chall <b>The</b>	s module th ial focus is <sub>l</sub> enges in HR <b>mes</b>	ie ba: out oi M.	c knowledge for a successful Human Resource Management is imparted. A start-ups and newly founded companies. These companies face special						
	Recruiting:			<ul> <li>Introduction to employer branding</li> <li>"War for talents": how can a start-up outperform larger organizations?</li> <li>Personnel marketing in the start-up phase</li> <li>Digitalization in recruiting</li> </ul>						
4	Assessment:			<ul> <li>Personnel selection according to DIN 33430 for start-ups, including         <ul> <li>Job analysis</li> <li>Psychometric Properties of test procedures</li> <li>Psychological assessment in personnel selection</li> </ul> </li> </ul>						
	HR o	levelopmen	t:	<ul> <li>Importance</li> <li>Methods of</li> <li>Strategic pe</li> <li>Leadership</li> <li>Increasing i</li> </ul>	<ul> <li>Importance of first employees</li> <li>Methods of HR development</li> <li>Strategic personnel development in start-ups</li> <li>Leadership &amp; Teamwork</li> <li>Increasing innovation</li> </ul>					
	The	entreprenei	ır	<ul> <li>Entrepreneurs as the centrum of an organization?</li> <li>Requirements for entrepreneurs in HR (e.g. HR laws &amp; regulations)</li> </ul>						

	[								
	<ul> <li>What makes an ent</li> <li>Psychological const Psychological key compete</li> </ul>	repreneur? Impetus ructs related to en ncies in building a	s for self-analysis trepreneurship : company						
5	Academic:         The following competencies from the field of business psychology and HRM will be taught:         • Conception of a successful recruiting strategy for a start-up, as well as the theoretical models background from the field of of an employer branding.         • Knowledge for the The process and function of personnel marketing in start-upsselection of the right personnel marketing instruments         • Carrying out a How to conduct a job analysis requirements analysis         • Acquisition of knowledge about psychometric test instruments for performance and personality measurement         • Personnel selection according to DIN 33430 for start-ups. Using examples, the participants are students will be introduced to the application and evaluation of an the test procedures assessment center         • Acquisition of Knowledge knowledge of about classical and innovative methods of personnel development, especially for the promotion field of leadership, teamwork, innovation and entrepreneurship         Further professional competencies:       • Statistical basics of classical test theory (test theory         • Statistical models to calculate benefits of recruitment and selection Benefit models of HR selection (e.g., BCG model)       • Basics of Machine Learning and NLP in the context of HR selection         • Conception of Knowledge about tatistical training on the basics of psychometric Propertiespsychometric quality criteria.       • Acquisition of knowledge about tatistical training on the basics of psychometric Propertiespsychometric quality criteria.         • Assessment and Critical classification evaluation of empirical studies in the field of psychology, an								
6	Description of possible electives within the module none	: 							
7	Examination: Final Module Exam								
8	No       Number and Type; Connection to Course         1       Written exam	<b>Duration</b>	Part of final mark in %						
		<sup>30</sup>							
9	Stuay Work: none								
10	<b>Prerequisites for Credit Points:</b> The credit points will be granted after all relevant wo completed.	rk and study work	have been successfully						
11	CP Assignment:								

		No 1			1.00 CP		
	Presence	No 2			1.00 CP		
	Relevant Work	No 1			4.00 CP		
	Total				6 CP		
12	Weight of the module grade for th 3,3%	ne overall grad	le:				
13	Module Prerequisites: none						
14	<b>Presence:</b> Presence is strongly recommended to warrant learning success.						
45	Mobility/Acknowledgement:						
15	Use of the module for other cour	se programs	Business Administration, Bachelor Economics				
16	<b>Responsible Lecturer:</b> Prof. Dr. David Bendig			<b>Department:</b> University of Münster, School of Business and Economics			
17	Misc.:						

# Principles of Entrepreneurship

Mod	dule Ti	tle english:		Principles of Entrepr	eneurs	hip				
Cou	rse Pro	ogram:		Bachelor Information	n Syste	ms				
1	Modu	ule No: BWL 1	.3	State: Elective	Language of Instruction: English					
2	<b>Turn:</b> seme	each summe ester	er	Duration: 1 semester	Seme	ester: 5 (	or 6	<b>CP:</b> 6	Workload	<b>d (h):</b> 180
	Modu	le Structure	:							
	No	Туре	Cours	se			State		Workload (h	)
3									Presence (h + CH)	Self- Study (h)
	1	Lecture	Princi	ples of Entrepreneurs	es of Entrepreneurship			ulsory	30 h (2 CH)	60
	2	Exercise	Tutor	ial Principles of Entrep	reneur	ship	Comp	ulsory	30 h (2 CH)	60
4	Purpe This I know Cours This I funda busir think proce	ose of the mo module gives dedge from o se content: module gives amentals of e ness models and act entr esses.	an int ther m an int entrepr and the eprene	ntegration into currico roduction to the topic odules is required. roduction to the topic eneurship with regard e recognition of oppor urial, allowing for the	of entr of entr to entr tunities succes	epreneu epreneu epreneu s and ris sful imp	urship. H urship. T urial deo ks. Par olement	Hence, The lea cision- ticipan tation c	no previous rning content making, the c ts will learn h of ideas and i	includes reation of low to nnovation
5	Learning outcomes: Academic: The students - develop a profound understanding of the entrepreneurial mindset - understand how to manage opportunities and challenges concerning entrepreneurial activities - develop an understanding of the innovation process - comprehend the relevance of customer needs for new product development - understand how to finance the foundation and growth of a new venture Soft skills: The students learn how to convince important stakeholders of their idea within a pitch situation									
6	<b>Desc</b> none	ription of pos	ssible e	electives within the m	odules	:				
7	Exam	iination: Fina	al Mod	ule Exam						
8	Relev No	vant Work: Number and	l Type;	Connection to Course		Duratio	on	Pa	art of final ma	ırk in %

	1 Written exam		120	o min.	100 %			
9	Study Work: none							
10	<b>Prerequisites for Credit Points:</b> The credit points will be granted a completed.	after all relevar	it work ar	nd study work h	ave been successfully			
	CP Assignment:							
	Dracance	No 1		1.00	CP			
11		No 2		1.00	СР			
	Relevant Work	No 1		4.00	СР			
	Total			6 CP				
12	Weight of the module grade for the overall grade: 3,3%							
13	Module Prerequisites: none							
14	Presence: none							
	Mobility/Acknowledgement:							
15	Use of the module for other cour	rse programs	Bachelo Econom	or Business Adr ics	ninistration, Bachelor			
16	<b>Responsible Lecturer:</b> Prof. Dr. David Bendig		<b>Department:</b> University of Münster, School of Business and Economics					
17	Misc.:							

# Selected Topics in Business 1

Мос	Module Title english:		Se	Selected Topics in Business 1							
Cou	rse Pro	ogram:	Ва	chelor Information	n Systems						
1	<b>Modu</b> 14	J <b>le No:</b> BWL	Sta	<b>ate:</b> Elective	Language of Instr	uction:	Germ	German or English			
2	<b>Turn:</b> seme	each ester	<b>Du</b> se	r <b>ation:</b> 1 mester	Semester: 5 or 6	<b>СР:</b> 6	)	Woi	rkload (h): :	180	
	Modu	le Structure:									
	No Type			Course			Stat	te	Workload	(h)	
3							Presence (h + CH)	Self- Study (h)			
	1 Lecture/ Exercise			Selected Topics i	n Business Admini	stration	Elec	tive	60 h (4 CH)	120	
	2 Seminar			Selected topics in Business Administration				tive	30 h (2 CH)	150	
4	Modu Back The n conce Cours In thi have teach partic busir	ale Contents: ground and relation nodule extends erning current is se content: s module, current varying content ners. In the indirect cular attention is ness administration	ation and ssue ent i ts, d vidu is pa	ns to other course d deepens knowled es. ssues in the field of lepending on the of al courses, tutoria aid to the fact that b. Courses may var	<b>s:</b> dge in the field of b of business admini current developmer al content and case the courses fit into y each semester.	usiness stration ts and a studies the cur	are p are ca are in rent r	inistr resen arried ntegr esea	ration, espe nted. The co l out by diff rated. In so rch areas o	ecially ourses erent doing f	
5	Learning outcomes:         Academic:         The students get to know changing current or specific issues and thereby also specialize depending on their specific area of interest. They learn techniques and methods, building on theoretical foundations that qualify for starting a career in this particular field. Due to the close link between research and teaching in this module, students recognize the direct relation between economic research and timely professional requirements.         Soft skills:         Students learn to critically reflect and discuss current issues in Business.										
6	<b>Desc</b> none	ription of possi	ble	electives within th	ne modules:						
7	Exam	ination: Final I	Mod	ule Exam							
8	Relev	vant Work:									

	No Number and Type; Connection to Course		Durat	Duration		Part of final mark in %	
	1	Final written exam		max.	. 120 min.		100 %
9	Stud	<b>y Work:</b> none					
10	Prer The com	<b>equisites for Credit Points:</b> credit points will be granted a pleted.	after all releva	ant wo	rk and study	work have b	een successfully
	CP A	ssignment:					
	Dro		No 1			2.00 CP	
11		sence	No 2			1.00 CP	
	Rele	evant Work	No 1			4.00 CP	
	Tota	al		6 CP			
12	Weight of the module grade for the overall grade: 3.45% (6 of 174 CP)						
13	Mod none	<b>ule Prerequisites:</b>					
14	<b>Pres</b> See	<b>ence:</b> description of the correspond	ling business	s admi	nistration mo	dule.	
	Mob	ility/Acknowledgement:					
	Use	of the module for other cour	se programs		Bachelor Business Administration, Bachelor Economics		
15	Eng	lish translation of module co	mponents fr	om	No 1: Selecto Administrati	ed Topics in ion	Business
	sec	section 3			No 2: Selected topics in Business Administration		
16	<b>Resp</b> Prof.	oonsible Lecturer: Dr. Dr. h.c. Jörg Becker		<b>Department:</b> School of Business and Economics			Economics
17	Misc						

# Selected Topics in Business 2

Мо	dule Tit	le english:	Se	Selected Topics in Business 2							
Cou	rse Pro	ogram:	Ва	chelor Information	n	Systems					
1	<b>Modu</b> 17	<b>ile No:</b> BWL	Sta	State: Elective		Language of Instruction: German or English					
2	<b>Turn:</b> seme	each ster	<b>Du</b> se	<b>Semester:</b> 5 or 6			<b>CP:</b> 6	,	Woi	r <b>kload (h):</b> 180	
	Modu	le Structure:									
	No	Туре		Course				Sta	te	Workload (h)	
3										Presence (h + CH)	Self- Study (h)
	1 Lecture/ Exercise			Selected Topics i	ir	ı Business Administ	ration	Eleo	ctive	60 h (4 CH)	120
	2 Seminar			Selected topics in Business Administration			Eleo	ctive	30 h (2 CH)	150	
4	Modu Backs The n conce Cours In thi have teach partic busir	Ile Contents: ground and related anodule extends erning current is se content: s module, current varying content varying content uters. In the indirect cular attention is sess administrated	ation and ssue ent i ts, d vidu is pa tion	ns to other course d deepens knowled es. ssues in the field of lepending on the of al courses, tutoria aid to the fact that b. Courses may var	ed o clai	s: ge in the field of bus f business administ urrent developments content and case st the courses fit into the each semester.	siness ration s and a tudies he curr	adm are p are ca are i rent r	inistr preser arried ntegr resea	ration, espe nted. The co l out by diff rated. In so rch areas o	cially ourses erent doing f
5	Learning outcomes: Academic: The students get to know changing current or specific issues and thereby also specialize depending on their specific area of interest. They learn techniques and methods, building on theoretical foundations that qualify for starting a career in this particular field. Due to the close link between research and teaching in this module, students recognize the direct relation between economic research and timely professional requirements. Soft skills: Students learn to critically reflect and discuss current issues in Business.										
6	<b>Desc</b> none	ription of possi	ble	electives within th	h	e modules:					
7	Exam	ination: Final I	Mod	ule Exam							
8	Relev	ant Work:									

	No Number and Type; Connection to Course I			Duration		Part of final mark in %				
	1	Final written exam		max. 120 min.		80 %				
	2	Oral exam or presentation ( groupps)	night be in	max. 30 min. 20 %						
9	Stud	ly Work: none								
10	<b>Prer</b> The com	<b>equisites for Credit Points:</b> credit points will be granted a pleted.	ifter all relevant v	vork and study	work have be	en successfully				
	CP A	CP Assignment:								
	Due		No 1		2.00 CP					
11	Presence		No 2		1.00 CP					
	Relevant Work		No 1		3.00 CP					
			No 2		1.00 CP					
	Tota	al			6 CP					
12	<b>Wei</b> 3.45	<b>ght of the module grade for th</b> % (6 of 174 CP)	ne overall grade:							
13	<b>Mod</b> none	l <b>ule Prerequisites:</b> e								
14	<b>Pres</b> See	e <b>nce:</b> description of the correspond	ling business adr	ninistration mo	odule.					
	Mob	ility/Acknowledgement:								
	Use	of the module for other cour	se programs	Bachelor Bu Bachelor Ec	siness Admin onomics	istration,				
15	Eng	lish translation of module co	mponents from	No 1: Select Administrat	ed Topics in B ion	Susiness				
	sec	tion 3		No 2: Selected topics in Business Administration						
16	<b>Res</b> Prof.	oonsible Lecturer: . Dr. Dr. h.c. Jörg Becker		<b>Department:</b> School of Business and Economics						
17	Miso									

### Selected Chapters in Computer Systems

Mod	dule Tit	tle english:	Selected Chapters in Computer Systems						
Cou	rse Pro	ogram:	Bachelor Information	n Systems					
1	Modu	<b>ile No:</b> AKI	State: Elective	<b>State:</b> Elective <b>Language of Instruction:</b> German or English					
2	Turn: seme	each ester	Duration: 1 semester	Duration: 1 semesterSemester: 5 or 6CP:		<b>CP:</b> 6	: 6 Workload (h)		0
	Modu	le Structure:							
	No Туре		Course	Course				Workload (h)	
3								Presence (h + CH)	Self- Study (h)
	1	Lecture/ Exercise	L/E as described	below (see (6))		Comp	ulsory	60 h (4 CH)	120
4	Background and relations to other courses:         To deepen their insights in computer science, students take courses according to 6-CP-modules in computer science         Main topics and learning objectives:         see the module descriptions which can be found in the pertaining examination regulations.								
5	Learn	ing outcomes:							
6	Description of possible electives within the modules:         Students take one of the following modules/courses:         i.       Computernetze und ihre Leistung         ii.       Eingebettete Systeme         iii.       Data Mining         iv.       Effiziente Algorithmen         v.       Formale Methoden der Softwareentwicklung         vi.       Compilerbau         vii.       Mustererkennung und Maschinelles Lernen         viii.       Methoden und Anwendungen für randomisierte Systeme         ix.       Einführung in die Künstliche Intelligenz								
7	Exam	ination: Final	Module Exam						
8	Relev No	<b>vant Work:</b> Number and T Written Exam	ype; Connection to Co	ourse Du ma mi	x. 120		<b>Part of</b> 100 %	final mark	in %
9	Study	y Work:			-				

	No	Number and Type; Connect		Duration		
	1	Exercises			max. 60 pages	
10	Prero The o com	equisites for Credit Points: credit points will be granted a pleted.	after all relevant wo	rk and study wor	k have been successfully	
	CP A	ssignment:				
	Pres	sence	No 1 2		ро СР	
11	Rele	evant Work	No 1	2.0	DO CP	
	Stu	dy Work	No 1	2.0	DO CP	
	Total			6 CP		
12	Weight of the module grade for the overall grade: 3.45% (6 of 174 CP)					
13	Mod none	ule Prerequisites:				
14	Pres none	ence:				
	Mob	ility/Acknowledgement:				
15	Use	of the module for other cour	rse programs	none		
	Eng sect	lish translation of module co ion 3	omponents from	No 1: L/E as described below (see (6))		
16	Responsible Lecturer: Prof. Dr. Herbert Kuchen			<b>Department:</b> University of Münster, School of Business and Economics		
17	Misc As ex well:	<b>.:</b> «tracurricular studies, the fol i. Geoinformatik 1: Grundlag	lowing modules tal gen ii. Geoinformati	en from Geoinfo < 2: Digitale Karto	rmatics can be chosen as ographie	

### Security of Distributed Systems

Mod	lule Ti	tle english:	5	Security of Distribute	ed Syste	ms				
Cou	rse Pro	ogram:	E	Bachelor Information	System	IS				
1	Modu	<b>ile No:</b> Inf5	9	State: Compulsory Language of Instruc			struction: (	<b>uction:</b> German or English		
2	<b>Turn:</b> each summer semester			<b>Duration:</b> 1 semester	<b>Semester:</b> 6		<b>CP:</b> 6	W	<b>Workload (h):</b> 180	
	Modu	ıle Structure	:							
	No	Туре	Course	1			State Workl		Workload (	(h)
3								Presence (h + CH)	Self- Study (h)	
	1	Lecture	Securit	y of Distributed Systems			Compuls	ory	30 h (2 CH)	60
	2	Exercise	Exercis	es in Security of Dis	Systems	Compuls	ory	30 h (2 CH)	60	
	Main topics and learning of Themes			Learning objectives						
4	syst	ems	Istributed	the ISO/OSI model and the internet model.						
	Atta distr	ck vectors or ibuted syste	n ms	Identifying security vulnerabilities in networked systems. Understanding exploits and attacks.						
	Defense measure for distributed systems			Application of effective countermeasures to defend against attacks and exploits. Mitigation of security vulnerabilities.						
5	Learr	ing outcome	es:							
6	<b>Desc</b> none	ription of po	ssible ele	ectives within the m	odules:					
7	Exam	iination: Fina	al Modul	e Exam						
	Relev	vant Work:					1.			
8	<b>No</b>	Number and	l Type; C	connection to Course	•		7es 1	Part	of final mar	'k in %
9	Study	y Work: none	ġ							

10	Prerequisites for Credit Points: The credit points will be granted after all relevant work and study work have been successfully completed.					
	CP Assignment:					
		No 1			1.00 CP	
11		No 2			1.00 CP	
	Relevant Work No 1			4.00 CP		
	Total			6 CP		
12	Weight of the module grade for the overall grade: 3.45% (6 of 174 CP)					
13	Module Prerequisites: none					
14	Presence: none					
	Mobility/Acknowledgement:					
	Use of the module for other cou	rse programs	none			
15	English translation of module co	mponents from	Ν	o 1: Security	of Distributed Systems	
	section 3	Sinponents nom	N S	o 2: Exerciso ystems	es in Security of Distributed	
16	<b>Responsible Lecturer:</b> Prof. DrIng. Thomas Hupperich		<b>Department:</b> University of Münster, School of Business and Economics			
17	Misc.:					

### Project Seminar

lule Tit	tle english:	Project Seminar	Project Seminar						
rse Pro	ogram:	Bachelor Information S	Bachelor Information Systems						
Modu	ı <b>le No:</b> PS	State: Compulsory	State: Compulsory         Language of Instruction: German or English						
<b>Turn:</b> seme	each ster	Duration: 1 semester	Semester: 6	<b>CP:</b> 12	Workload (h	<b>:</b> 360			
Modu	Ile Structure:								
No	Туре	Course		State	Workload (h)				
					Presence (h + CH)	Self- Study (h)			
1	Seminar	Project Work		Compulsory	60 h (4 CH)	120			
2	Seminar	Project Management		Compulsory	30 h (2 CH)	60			
3	Seminar	Presentation		Compulsory	30 h (2 CH)	60			
<ul> <li>Background and relations to other courses:</li> <li>The material and methods learned in the previous courses shall 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 will be helpful for the bachelor thesis.</li> <li>Main topics and learning objectives:</li> <li>The material and methods learned in previous courses are applied in a practice-oriented project. 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. Depending on the subject, ethical aspects are taken into account. The documentation of the project includes chapters "Theoretical and technological foundations", "Specification sheet", "Project Plan", "Code resp. Data documentation", "Manual", "Reflexion"</li> </ul>									
Ther	nes	Learning objectives							
Writi	ng scientific	Read and understand	scientific literature	e. Describe tl	ne read mater	ial well-			
Writi pape	ing scientific ers	Read and understand structured, understan	scientific literature dably, and precise	e. Describe th Iy in own wo	ne read mater rds in a paper	ial well-			
Writi pape Pres	ng scientific ers entation	Read and understand structured, understan Present the material d tools (such as e.g. Pow precise way.	scientific literature dably, and precise escribed in the pa verpoint) in a well	e. Describe th ly in own wo per orally us structured, u	ne read mater rds in a paper ing state-of-th Inderstandab	ial well- : e-art le, and			
	Jule Tit rse Pro Modu Turn: seme Modu 1 2 3 Modu 1 2 3 Modu Backs The n proje a par bach Main The n In pa desig More tools pape ethic. "Theo Data	Jule Title english:         rse Program:         Module No: PS         Turn: each semester         Module Structure:         No         Type         1         Seminar         2         Seminar         3         Seminar         3         Seminar         1         Seminar         3         Seminar         1         Seminar         3         Seminar         1         Seminar         3         Seminar         1         Seminar         3         Seminar         3         Seminar         1         Seminar         3         Seminar         1         Seminar         3         Seminar         1         Seminar         1         Seminar         1         Seminar         1         Seminar         Seackground and reginal and menor <th>Jule Title english:Project SeminarInse Program:Bachelor Information SModule No: PSState: CompulsoryTurn: each semesterDuration: 1 semesterModule Structure:Duration: 1 semesterNoTypeCourse1SeminarProject Work2SeminarProject Management3SeminarPresentationModule Contents: Background and relations to other courses: The material and methods learned in the pre project to solve a realistic, complex problem a partner from industry. The experience gain bachelor thesis.Main topics and learning objectives: The material and methods learned in previou In particular teamwork, project planning and design of a corresponding software architect Moreover, the intermediate and final results tools. The participants also have to read rele papers. The students are supported in all the ethical aspects are taken into account. The or "Theoretical and technological foundations" Data documentation", "Manual", "Reflexion"</th> <th>Jule Title english:       Project Seminar         rse Program:       Bachelor Information Systems         Module No: PS       State: Compulsory       Language of Inst         Turn: each semester       Duration: 1 semester       Semester: 6         Module Structure:       Seminar       Project Work       1         1       Seminar       Project Management       1         3       Seminar       Project Management       1         3       Seminar       Presentation       1         Module Contents:       Background and relations to other courses:       The material and methods learned in the projous courses shaproject to solve a realistic, complex problem. The project is off a partner from industry. The experience gained in the project solve a particular teamwork, project planning and management, de design of a corresponding software architecture, implementat Moreover, the intermediate and final results of the project will tools. The participants also have to read relevant literature and papers. The students are supported in all these activities by tuethical aspects are taken into account. The documentation of "Theoretical and technological foundations", "Specification sh Data documentation", "Manual", "Reflexion"</th> <th>International Systems         International Systems         International Systems         Module No: PS       State: Compulsory       Language of Instruction: Gend         Turn: each semester       Duration: 1 semester       Semester: 6       CP: 12         Module Structure:       State       State       Compulsory         I       Seminar       Project Work       Compulsory         2       Seminar       Project Management       Compulsory         3       Seminar       Prosentation       Compulsory         3       Seminar       Presentation       Compulsory         Module Contents:       Background and relations to other courses:       The material and methods learned in the previous courses shall be applied project to solve a realistic, complex problem. The project is often performer a partner from industry. The experience gained in the project seminar will be bachelor thesis.         Main topics and learning objectives:       The material and methods learned in previous courses are applied in a pra in particular teamwork, project planning and management, development or design of a corresponding software architecture, implementation, and test:         Moreover, the intermediate and final results of the project will be presenter tools. The participants also have to read relevant literature and describe re papers. The students are supported in all these activities by tutors. Dependentional aspects are taken into account. The documentation of the project in "Theorectical and</th> <th>Induction       Project Seminar         rse Program:       Bachelor Information Systems         Module No: PS       State: Compulsory       Language of Instruction: German or Englisis         Turn: each semester       Duration: 1 semester       Semester: 6       CP: 12       Workload (h)         Module Structure:       No       Type       Course       State       Workload (h)         1       Seminar       Project Work       Compulsory       Gompulsory       Gompulsory       Goh (4 CH)         2       Seminar       Project Management       Compulsory       Goh (4 CH)         3       Seminar       Presentation       Compulsory       Goh (2 CH)         Module Contents:       Background and relations to other courses:       The material and methods learned in the previous courses shall be applied in a practice-priget to solve a realistic, complex problem. The project is often performed in collabora a partner from industry. The experience gained in the project seminar will be helpful for t bachelor thesis.         Main topics and learning objectives:       The material and methods learned in previous courses are applied in a practice-oriented In particular teamwork, project planning and management, development of a business or design of a corresponding software architecture, implementation, and testing will be trait Moreover, the intermediate and final results of the project will be presented using state-tools. The participants also have to read relevant literature and describe required conc</th>	Jule Title english:Project SeminarInse Program:Bachelor Information SModule No: PSState: CompulsoryTurn: each semesterDuration: 1 semesterModule Structure:Duration: 1 semesterNoTypeCourse1SeminarProject Work2SeminarProject Management3SeminarPresentationModule Contents: Background and relations to other courses: The material and methods learned in the pre project to solve a realistic, complex problem a partner from industry. The experience gain bachelor thesis.Main topics and learning objectives: The material and methods learned in previou In particular teamwork, project planning and design of a corresponding software architect Moreover, the intermediate and final results tools. The participants also have to read rele papers. The students are supported in all the ethical aspects are taken into account. The or "Theoretical and technological foundations" Data documentation", "Manual", "Reflexion"	Jule Title english:       Project Seminar         rse Program:       Bachelor Information Systems         Module No: PS       State: Compulsory       Language of Inst         Turn: each semester       Duration: 1 semester       Semester: 6         Module Structure:       Seminar       Project Work       1         1       Seminar       Project Management       1         3       Seminar       Project Management       1         3       Seminar       Presentation       1         Module Contents:       Background and relations to other courses:       The material and methods learned in the projous courses shaproject to solve a realistic, complex problem. The project is off a partner from industry. The experience gained in the project solve a particular teamwork, project planning and management, de design of a corresponding software architecture, implementat Moreover, the intermediate and final results of the project will tools. The participants also have to read relevant literature and papers. The students are supported in all these activities by tuethical aspects are taken into account. The documentation of "Theoretical and technological foundations", "Specification sh Data documentation", "Manual", "Reflexion"	International Systems         International Systems         International Systems         Module No: PS       State: Compulsory       Language of Instruction: Gend         Turn: each semester       Duration: 1 semester       Semester: 6       CP: 12         Module Structure:       State       State       Compulsory         I       Seminar       Project Work       Compulsory         2       Seminar       Project Management       Compulsory         3       Seminar       Prosentation       Compulsory         3       Seminar       Presentation       Compulsory         Module Contents:       Background and relations to other courses:       The material and methods learned in the previous courses shall be applied project to solve a realistic, complex problem. The project is often performer a partner from industry. The experience gained in the project seminar will be bachelor thesis.         Main topics and learning objectives:       The material and methods learned in previous courses are applied in a pra in particular teamwork, project planning and management, development or design of a corresponding software architecture, implementation, and test:         Moreover, the intermediate and final results of the project will be presenter tools. The participants also have to read relevant literature and describe re papers. The students are supported in all these activities by tutors. Dependentional aspects are taken into account. The documentation of the project in "Theorectical and	Induction       Project Seminar         rse Program:       Bachelor Information Systems         Module No: PS       State: Compulsory       Language of Instruction: German or Englisis         Turn: each semester       Duration: 1 semester       Semester: 6       CP: 12       Workload (h)         Module Structure:       No       Type       Course       State       Workload (h)         1       Seminar       Project Work       Compulsory       Gompulsory       Gompulsory       Goh (4 CH)         2       Seminar       Project Management       Compulsory       Goh (4 CH)         3       Seminar       Presentation       Compulsory       Goh (2 CH)         Module Contents:       Background and relations to other courses:       The material and methods learned in the previous courses shall be applied in a practice-priget to solve a realistic, complex problem. The project is often performed in collabora a partner from industry. The experience gained in the project seminar will be helpful for t bachelor thesis.         Main topics and learning objectives:       The material and methods learned in previous courses are applied in a practice-oriented In particular teamwork, project planning and management, development of a business or design of a corresponding software architecture, implementation, and testing will be trait Moreover, the intermediate and final results of the project will be presented using state-tools. The participants also have to read relevant literature and describe required conc			

	Project managementManage 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	Learning outcomes: Academic: Solution of a complex practice-oriented problem. Soft skills: (among others) ability to work in a team, ability to communicate and cooperate, leadership skills, media competence, time management, take ethical aspects into account.							
6	Desc none	ription of possib	ole electives within the module	25:				
7	Examination: Final Module Exam							
	Relevant Work:							
8	No	Number and Ty	pe; Connection to Course	Duration	Part of final mark in %			
	1 Group work: Project docume following presentation		oject documentation and ntation	max 200 pages, max. 4 hours	100 %			
9	Study Work: none							
10	<b>Prerequisites for Credit Points:</b> The credit points will be granted after all relevant work and study work have been successfully completed.							
	CP A	ssignment:						
			No 1	2.00 CP				
11	Pres	sence	No 2	1.00 CP				
			No 3	1.00 CP				
	Rele	evant Work	No 1	8.00 CP				
	Tota	l		12 CP				
12	<b>Weig</b> 6.9%	<b>tht of the module</b> (12 of 174 CP)	e grade for the overall grade:					
13	<b>Mod</b> none	ule Prerequisites	5:					
14	Pres Pres	<b>ence:</b> ence is mandato	ry					
15	Mob	ility/Acknowled៖	gement:					

	Use of the module for other course programs	none				
		No 1: Project Work				
	English translation of module components from section a	No 2: Project Management				
		No 3: Presentation				
16	Responsible Lecturer:         Department:           Prof. Dr. Herbert Kuchen         School of Business and Economics					
	<b>Misc.:</b> Each semester a set of project seminars with different tasks is offered. They will be presented at the end of the previous semester. After that, the available places will be assigned to the interested students.					

### **Bachelor Thesis**

Mod	dule Tit	le english:	Bachelor Thesis					
Cou	rse Pro	ogram:	Bachelor Information 9	Systems				
1	Modu	ı <b>le No:</b> BA	State: Compulsory	Langua	ge of Inst	r <b>uction:</b> Gen	man or Englis	h
2	Turn: seme	each ster	Duration: 1 semester	Semest	er: 6	<b>CP:</b> 12	Workload (h)	<b>:</b> 360
	Modu	Ile Structure:						
	No	Туре	Course	Course		State	Workload (h)	
3					Presence (h + CH)	Self- Study (h)		
	1 Bachelor Thesis					Compulsory	oh (oCH)	360
4	Background and relations to other courses: The contents of the previous modules will be used in the bachelor thesis.Main topics and learning objectives: The bachelor thesis shall demonstrate that the student is able to solve a given, complex problem independently in a given time frame using scientific methods and that he/she is able to describe the solution in a scientific text. The thesis shall have a size of approximately 40 pages.ThemesLearning objectives							
			corresponding literature ethical aspects will be ta	corresponding literature. Writing a scientific text. Depending on the subject, ethical aspects will be taken into account.				
5	Learning outcomes: Academic: The students gain experience with the application of the learned material to a complex problem. Moreover, they learn to read the relevant literature and to formulate scientific texts. Soft skills: (among others) writing scientific texts, time management, self-competence							
6	Desci none	ription of pos	sible electives within the	modules	:			
7	Exam	ination: Fina	l Module Exam					
	Relev	ant Work:			I			
8	No	Number and	Type; Connection to Cou	rse	Duratio	n P	art of final ma	ark in %
	1	Bachelor The	esis		40-60 p	ages 10	00 %	

9	Study Work: none						
10	<b>Prerequisites for Credit Points:</b> The credit points will be granted after all relevant work and study work have been successfully completed.						
	CP Assignment:						
11	Presence	No 1		0.00 CP			
	Relevant Work	No 1		12.00 CP			
	Total			12 CP			
12	Weight of the module grade for the overall grade: 6.9% (12 of 174 CP)						
13	Module Prerequisites: none						
14	Presence: none						
	Mobility/Acknowledgement:						
15	Use of the module for other co	urse programs	none				
	English translation of module section 3	components from	No 1: Bach	elor Thesis			
16	<b>Responsible Lecturer:</b> Prof. Dr. Herbert Kuchen		<b>Department:</b> School of Business and Economics				
17	Misc.:						