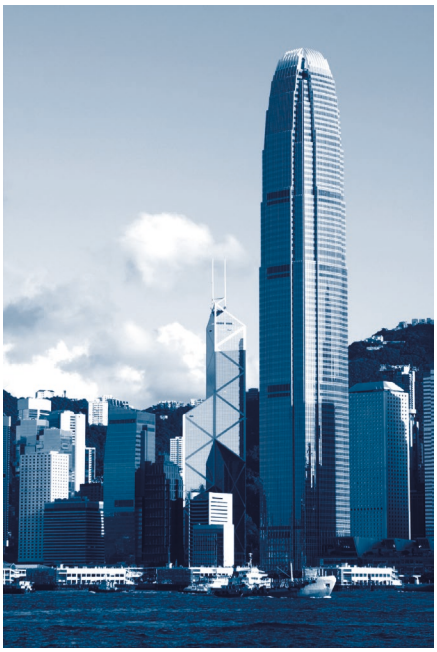
HBC.
HOCHSCHULE
BIBERACH
UNIVERSITY
OF APPLIED SCIENCES

Master Course Business Administration

with the major fields of study (Construction and Real Estate) or (Energy Management)

Master of Science

University of Applied Sciences, Biberach



– Module Handbook –

Study and Examination Regulatins (SPO) MBW from WS 16/17 PO4 (Status 30.06.2016)

Last Update 18.02.2025

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MBW-Tabel of Contents

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MBW-Timetable

Timetable

Timetable - Master of Science **Business Administration (Construction and Real Estate) / MBW-BI**

Courses	Semester / LP			SWS	Self-study	Exam		Notengewichtung	
	1	2	3			Type	Hrs.	EG	MG
Required Subjects									
Module I Construction and Real Estate Markets (5 LP)									
Construction and Real Estate Markets	5			4	90 Hrs.	St	-	-	5
Module II Real Estate Project Development (5 LP)									
Real Estate Project Development	5			4	90 Hrs.	St	-	-	5
Module III Taxes and Accounting (6 LP)									
Taxation of Construction and Real Estate Projects	3			2	30 Hrs.	K	2,0	-	6
Accounting in the Construction and Real Estate Industry	3			2	30 Hrs.				
Module IV Corporate Governance (6 LP)									
Organisational Behaviour and Leadership *	2			2	30 Hrs.	St	-	2	6
Strategic Management *	4			4	60 Hrs.	K	1,5	4	
Module V Contracts in the Construction and Real Estate Industry (5 LP)									
Contracts in the Construction and Real Estate Industry	5			4	90 Hrs.	K	1,5	-	5
Module VI Real Estate Valuation and Asset Management (8 LP)									
International Real Estate Valuation and Markets	(3)			2	60 Hrs.	K	2,0	-	8
Asset and Portfolio Management *		5		4	90 Hrs.				
Module VII Construction and Real Estate Economic Seminar (5 LP)									
Construction and Real Estate Economic Seminar		5		4	90 Hrs.	St	-	-	5
Module VIII Management-Skills (6 LP)									
Customer and Investor Relationship *		2		2	30 Hrs.	m.Pr.	0,25	2	6
Englisch - Negotiation *		4		4	60 Hrs.	m.Pr.	0,25	4	
Module IX Interdisciplinary Project Work (6 LP)									
Interdisciplinary Project Work *		6		4	120 Hrs.	PA	-	-	6
Module X Real Estate Investment and Financing (11 LP)									
Investment Appraisal and Quantitative Methods *		3		2	60 Hrs.	K	2,0	6	11
Individual and Portfolio Investments		3		2	60 Hrs.				
National and International Real Estate Financing			5	4	90 Hrs.	K	1,5	5	
Module XI Sustainability and Information Systems (5 LP)									
Information and Communication Systems *		2		2	30 Hrs.	K	1,0	2	5
Green Building and Life Cycle Costs			3	2	60 Hrs.	St	-	3	
Modul XII Construction Management (5 LP)									
Claim Management			2	2	30 Hrs.	St	-	-	5
Success Factors of Project Management			3	2	60 Hrs.				
Thesis (17 LP)									
Master Thesis			17	-	510 Hrs.	-	-	-	17
Total SWS	**24**	**24**	**10**						
Total Workload (hrs.)	**900**	**900**	**900**	**2700**					
Total assigned LP	**30**	**30**	**30**	**90**					

EG Single Weighting
MG Multiple Weighting of the module for the overall grade
St Study Paper(s) (homework, presentation, and/or paper)
PA Project Work(s) (homework, presentation, and/or paper)
* Common lectures
( ) Awarding of the LP linked to passed exams in the following semester

Hrs Hours
Pr Assessment
K Written exam(s)

m.Pr. Oral Exam
SWS Hours per week
LP Credit Points (ECTS)

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MBW-Timetable

Timetable - Master of Science **Business Administration (Energy Management) / MBW-EW**

Courses	Semester / LP			SWS	Self-study	Exam		Notengewichtung	
	1	2	3			Type	Hrs.	EG	MG
Required Subjects									
Module I International Energy Policy (5 LP)									
Internationale Energy Policy Analysis	3			2	60 Hrs.	K	2,0	-	**5**
Environmental and Resource Economics	2			2	30 Hrs.				
Module II Energy Markets and Energy Products (5 LP)									
Global Commodity Markets and Structured Energy Derivates	2			2	30 Hrs.	K	2,0	-	**5**
Short-term and Flexibility Markets for Electricity and Gas	3			2	60 Hrs.				
Modul III European and National Energy Law (5 LP)									
Case Studies on Energy Law	5			4	90 Hrs.	St	-	-	5
Module IV Corporate Governance (6 LP)									
Organisational Behaviour and Leadership *	2			2	30 Hrs.	St	-	2	6
Strategic Management *	4			4	60 Hrs.	K	1,5	4	
Module V International Energy Projects and Contracting (5 LP)									
Management of International Energy Projects	(3)			2	60 Hrs.	K	2,0	-	**5**
Claim Management in Energy Projects		2		2	30 Hrs.				
Modul VI Risk and Asset Management (8 LP)									
Risk Management	3			2	60 Hrs.	K	1,0	3	8
Asset and Portfolio Management *		5		4	90 Hrs.	K	1,5	5	
Modul VII Energy Economics Seminar (6 LP)									
Energy Economics Seminar 1	(3)			2	60 Hrs.	St	-	-	**6**
Energy Economics Seminar 2		3		2	60 Hrs.				
Modul VIII Management-Skills (6 LP)									
Customer and Investor Relationship *		2		2	30 Hrs.	m.Pr.	0,25	2	6
Englisch - Negotiation *		4		4	60 Hrs.	m.Pr.	0,25	4	
Module IX Interdisciplinary Project Work (6 LP)									
Interdisciplinary Project Work *		6		4	120 Hrs.	PA	-	-	6
Modul X Financing (8 LP)									
Investment Appraisal and Quantitative Methods *		3		2	60 Hrs.	K	1,0	3	8
Financing of Energy Projects and Ventures			5	4	90 Hrs.	St	-	5	
Modul XI Digitalization of the Energy Industry (7 LP)									
Information and Communication Systems *		2		2	30 Hrs.	K	1,0	2	7
IT Deployment in the Energy Market, Big Data, IoT		(3)		2	60 Hrs.	St	-	5	
Digitalisation Trends in the Energy Industry			2	2	30 Hrs.				
Modul XII Business Model Development for the Energy Industry (6 LP)									
Methods of Business Model Development			3	2	60 Hrs.	St	-	-	6
Digital Business Models			3	2	60 Hrs.				
Thesis (17 LP)									
Master Thesis			17	-	510 Hrs.	-	-	-	17
Total SWS	**24**	**24**	**10**						
Total Workload (hrs.)	**900**	**900**	**900**	**2700**					
Total assigned LP	**30**	**30**	**30**	**90**					

EG	Single Weighting	Hrs	Hours	m.Pr.	Oral Exam
MG	Multiple Weighting of the module for the overall grade	Pr	Assessment	SWS	Hours per week
St	Study Paper(s) (homework, presentation, and/or paper)	K	Written exam(s)	LP	Credit Points (ECTS)
PA	Project Work(s) (homework, presentation, and/or paper)				
*	Common lectures				
( )	Awarding of the LP linked to passed exams in the following semester				

MBW-BI - Business Administration (Construction and Real Estate)

Business Administration (Construction and Real Estate)

Module I – Construction and Real Estate Markets

Module-No.: **MBW-BI-01**	**Courses:** Construction and Real Estate Markets

Responsible for Module	Prof. Dr. Hornuff

Study Phase:	-	**Hours per Week:**	4 SWS
Semester:	1	**Workload:**	150 Hrs.
Module Duration	1 Semester	**Credit Points:**	5 LP
Status:	Required Module	**Examination Performance:**	Study Paper(s) r
Cycle:	Each Semester	**Weighting for overall grade**	5 x

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
60 Hrs.	0 Hrs.	90 Hrs.	Study Paper(s)

Hrs.-Information in industries minutes; no time minutes

Short description of module:

Management decisions in the real estate industry require adequate information about market and location developments, their drivers, and both short-term and long-term forecasts.

Due to the high-risk fields of activity in the construction and real estate industry, this module deals with the methods of analyzing construction and real estate markets and their quantitative assessment, and being able to apply them to decisions of various kinds.

Links between the module and other courses and modules

Module XII “Construction Management” shows the necessary project management methods and project control of a real estate project, with reference to market indicators. Module X “Real Estate Investment and Financing” consolidates aspects of real estate as an asset class. Module IV “Business Management” consolidates the strategic management concepts and leadership skills.

Studiability for other degree programmes:

The module can also be attended by students on the Biberach University of Applied Sciences architecture, civil engineering, and project management degree courses.

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MBW-BI - Business Administration (Construction and Real Estate)

Course:	Construction and Real Estate Markets	Course-Code:
		MBW-BI-01.1

Responsible for Module:	Prof. Dr. Hornuff

Study Phase:	-	**Hours per Week:**	4 SWS
Semester:	1	**Workload:**	150 Hrs.
Module Duration	Required Course	**Credit Points:**	5 LP
Cycle:	Each Semester	**Examination Performance:**	Study Paper(s)
Language of Instruction:	German		

Distribution oft he workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
60 Hrs.	0 Hrs.	90 Hrs.	Study Paper(s)

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

The participants should know the importance of the construction and real estate industry for the German economy and be able to analyze the special features of real estate as an asset class. Research in the real estate sector, including quantitative approaches to risk and return, is treated from the perspective of institutional real estate investors. The participants should be able to assess the factors which influence the return on real estate investments in the short and long term and be able to select, weight, and interpret the appropriate indicators for certain markets and property types.

Qualification objectives:

-

Course contents:

- Structures and developments in construction and real estate markets
- Real estate as an asset class
- Risk, return, and strategy types
- Market segments in the real estate industry
- Research in the real estate sector
- Economic drivers of real estate market development
- Real estate indicators
- International investment location scoring

Teaching and study methods:	Lecture, exercises, papers, seminar paper
Course material:	Lecture notes available online in ILIAS, market reports from the construction and real estate sectors will be provided during the lecture
Recommended study literature:	Recent essays on all topics covered in the course, In: real estate publications. Subscription and online archive of the Biberach University.
	Vornholz, G.: *Entwicklungen und Megatrends der Immobilienwirtschaft*, 3. Auflage, De Gruyter Verlag, 2017
	gif – Gesellschaft für immobilienwirtschaftliche Forschung e.V.: *Wirtschaftsfaktor Immobilien 2017. Gesamtwirtschaftliche Bedeutung der Immobilienwirtschaft*, In: Sonderausgabe der Zeitschrift für Immobilienökonomie, 2017
	Moring, A. / Maiwald, L. / Kewitz, T.: *Bits and Bricks: Digitalisierung von Geschäftsmodellen in der Immobilienwirtschaft*, Springer Verlag, 2018
	(without an outhor): *Frühjahrsgutachten*, Ed.: ZIA Zentraler Immobilien Ausschuss, yearly

MBW-BI - Business Administration (Construction and Real Estate)

Module II – Real Estate Project Development

Module-No.	**Courses:** Real Estate Project Development
MBW-BI-02	

Responsible for Module:	Prof. Dr. Heyser

Study Phase:	-	**Hours per Week:**	4 SWS
Semester:	1	**Workload:**	150 Hrs.
Module Duration	1 Semester	**Credit Points:**	5 CP
Status:	Required Module	**Examination Performance:**	Study Paper(s)
Cycle:	Each Semester	**Weighting for overall grade**	5 x

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
60 Hrs.	0 Hrs.	90 Hrs.	Study Paper(s)

Hrs.-Information in industries minutes; no time minutes

Short description of module:

The main characteristics of real estate project development are the complexity of the projects, the interaction of different disciplines, and high entrepreneurial risk. The competencies of a project developer include multidisciplinary management and the planning, management, and control of planning, construction, and marketing processes. In addition to this basic classification, the Real Estate Project Development module focuses on strategic management processes, as project development companies have to deal with the volatility of the real estate markets in particular.

Academic knowledge of the debate on project development is deepened by numerous practical phase examples of the task areas. The added value components of project development services are presented under economic, technical planning, and legal tax requirements, and the resulting interface fields are discussed under the respective qualification requirements.
The key decision-making parameters for future users, financing partners, and investors are discussed using models and implemented in cost and financial plans that are viable in the market. Classic and modern methods of project and investment appraisal are used.

The connection with important investment requirements enables the students to plan project developments economically from the point of view of life cycle costs.
The special responsibility of the project developer towards the environment is practiced in this module in the area of tension between economic and ecological interests in various practical research projects.

Overall, the students receive extensive theoretical and proven knowledge in project development. This enables them to realistically classify future professional fields of activity and to make better use of the resulting opportunities thanks to their previous knowledge.

Links between the module and other courses and modules

The “Real Estate Project Development” module has close links to modules I “Construction and Real Estate Markets”, III “Taxes and Accounting”, IV “Business Management”, V “Contracts in the Construction and Real Estate Industry” and VI “Real Estate Valuation and Asset Management”. This clearly underlines the cross-departmental function of project development. Modules X “Real Estate Investment and Financing” and XI “Sustainability and Information Systems” round off the content of real estate project development.

Studiability for other degree programmes:

The module has an interdisciplinary structure and includes numerous functions that cut across the areas of law, construction costing, project management, and financing. In this respect, this subject is particularly suitable for participants with basic business knowledge, as well as civil engineers, architects, and lawyers who can provide evidence of a corresponding bachelor’s degree.

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MBW-BI - Business Administration (Construction and Real Estate)

Course:	Real Estate Project Development	Course-Code:
		MBW-BI-02.1

Responsible for Module:	Prof. Dr. Heyser

Study Phase:	-	**Hours per Week:**	4 SWS
Semester:	1	**Workload:**	150 Hrs.
Module Duration	Required Course	**Credit Points:**	5 LP
Cycle:	Each Semester	**Examination Performance:**	Study Paper(s)
Language of Instruction:	German		

Distribution oft he workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
60 Hrs.	0 Hrs.	90 Hrs.	Study Paper(s)

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

Knowledge from the course “Practical Studies for Project Development” (Module XXI “Project Development”) in the Bachelor’s Degree in Business Administration (Construction and Real Estate) is helpful for the participants in the course “Real Estate Project Development” but not a prerequisite.

Qualification objectives:

The participants should get to know the skills of strategic management and be able to define the main tasks of ensuring success, identifying and reducing risks, identifying opportunities, reducing complexity, increasing flexibility, and creating synergy effects. The focus is on the development of strategic alternatives and their implementation in the project development markets. The participants can classify project development companies according to developer type, property type and scope of action, the importance of project development in the life cycle of the property, and areas of activity in the project development business area. The participants should show the complexity and dynamics of the project development process and its fields of activity using a phase model and be able to simulate the parallel, feed-forward, and feedback processes that occur in practice. Based on the derived understanding of project development, the participants should develop a concept for the strategic management of project development companies and discuss alternative strategies that can ensure the long-term competitiveness of the company. The consideration of sustainability aspects enables the students to assess life cycle costs in this context and to critically question the ecological and economic requirements of project development. In addition, the participants should work on a specific project in all phases based on an independently selected business field strategy and defend and further develop their business model theoretically and practically in the context of the theories presented.

Course contents:

- Strategic management in project development
- Fields of action
- Phase-defined view of the project development task areas, in particular, the project developer’s cost and financial planning
- Strategy concept for project development companies
- Sustainability aspects
- Life cycle costs

Teaching and study methods:	Lecture, exercises / group work using international cases as examples in cooperation with project development firms, papers, seminar paper
Course material:	Case studies will be provided in the lecture
Recommended study literature:	Mayerzedt, H. / Geiger, N. / Klett, E. / Beyerle, T.: Internationales Immobilienmanagement, Vahlen publisher, 2007
	Schäfer, J. / Conzen, G. (Ed.): Praxishandbuch der Immobilien-Projektentwicklung, 3rd edition, Beck Juristischer publisher, 2013

MBW-BI - Business Administration (Construction and Real Estate)

Module III – Taxes and Accounting

Module-No.:	**Courses:**	Taxation of Construction and Real Estate Projects
MBW-BI-03		Accounting in the Construction and Real Estate Industry

Responsible for Module	Prof. Dr. Girlich

Study Phase:	-	**Hours per Week:**	4 SWS
Semester:	1	**Workload:**	180 Hrs.
Module Duration	1 Semester	**Credit Points:**	6 LP
Status:	Required Module	**Examination Performance:**	Written Exam
Cycle:	Each Semester	**Weighting for overall grade**	6 x

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
60 Hrs.	0 Hrs.	118 Hrs.	2,0 Hrs. / 120 Min.

Hrs.-Information in industries minutes; no time minutes

Short description of module:

When preparing the consolidated financial statements of a capital-market-oriented company, the regulations of IAS/IFRS are to be applied. Unlike the German accounting standards, these are based on the Anglo-Saxon understanding of law. The students should use selected balance sheet items to deal with the similarities and deviations from the national accounting regulations according to the German Commercial Code (“HGB”) and get to know instruments for analyzing consolidated financial statements prepared according to IAS/IFRS.

International companies are exposed to the tax regimes of several countries in their projects. The threat of double or multiple taxation can only be reduced or even avoided through forward-looking tax planning. The students should deal with the peculiarities of international tax law and tax planning as well as get to know the similarities and deviations from the German tax regime by dealing with the tax law of Anglo-Saxon countries.

Links between the module and other courses and modules

The course content of this module builds on the “Business Taxation” (Module XII) and “Accounting” (Module XII) classes of the Bachelor’s Degree in Business Administration (Construction and Real Estate).
Interfaces in the Master’s Degree in Business Administration (Construction and Real Estate) are mainly with Module II “Real Estate Project Development”, Module VI “Real Estate Valuation and Asset Management”, and Module X “Real Estate Investment and Financing”.

Studiability for other degree programmes:

The module is suitable for all business administration courses. However, it is also suitable for all commercially-oriented courses – including law or engineering – that contain in-depth business administration lectures, provided the student has basic knowledge of bookkeeping and the basics of corporate taxation.

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MBW-BI - Business Administration (Construction and Real Estate)

Course:	Taxation of Construction and Real Estate Projects	Course-Code:
		MBW-BI-03.1

Responsible for Module:	Prof. Dr. Girlich

Study Phase:	-	**Hours per Week:**	2 SWS
Semester:	1	**Workload:**	90 Hrs.
Module Duration	Required Course	**Credit Points:**	3 LP
Cycle:	Each Semester	**Examination Performance:**	Written Exam, 60 Min. / with Accounting in the Constructin and Real Estate Industry; together 120 min.
Language of Instruction:	German		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
30 Hrs.	0 Hrs.	59 Hrs.	1,0 Hrs. / 60 Min.

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

Basic knowledge of the German tax system is required, as is taught in the “Business Taxation” class (Module XII) of the Bachelor’s Degree in Business Administration (Construction and Real Estate).

Qualification objectives:

Through a fundamental understanding of (German) international tax law and the tax regimes of other countries, the students should be able to assess cross-border business transactions in a tax-relevant manner and work out the tax risks.

Course contents:

- Introduction to international tax law
  - World income principle vs. principle of territoriality
  - Consideration of foreign losses
  - Unilateral measures to avoid double taxation
  - Double taxation agreement
- Taxation of real estate projects abroad
- Taxation of construction projects abroad
  - Permanent establishment of construction sites
  - Allocation of profits for permanent establishments
- Tax systems and contract law in Anglo-Saxon countries

Teaching and study methods:	Lectures, exercises in individual work, case studies in group work
Course material:	Lecture notes online in ILIAS, exercises, and case studies are made available in the course.
Recommended study literature:	Rupp/Knies/Ott u.a., Internationales Steuerrecht, 2018, Schäffer Poeschel
	Haase, Internationales und Europäisches Steuerrecht, 2017, C.F.Müller
	Bendlinger, Die Betriebsstätte in der Praxis des internationalen Steuerrechts, 2017, LexisNexis ARD ORAC

MBW-BI - Business Administration (Construction and Real Estate)

Course:	Accounting in the Construction and Real Estate Industry	Course-Code:
		MBW-BI-03.2

Responsible for Module:	Prof. Dr. Girlich

Study Phase:	-	**Hours per Week:**	2 SWS
Semester:	1	**Workload:**	90 Hrs.
Module Duration	Required Course	**Credit Points:**	3 LP
Cycle:	Each Semester	**Examination Performance:**	Written Exam, 60 Min. / with Taxation of Construction and Real Estate Projects; together 120 min.
Language of Instruction:	German		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
30 Hrs.	0 Hrs.	59 Hrs.	1,0 Hrs. / 60 Min.

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

Knowledge such as that imparted in the courses in Module V “Introduction to Accounting” and Module XII “Accounting and Taxes” of the Bachelor’s Degree in Business Administration (Construction and Real Estate) is required.

Qualification objectives:

The students acquire in-depth knowledge on the subject of accounting in companies, in particular, in the area of accounting according to international accounting standards (IAS/IFRS). They will learn the accounting treatment of a long-term construction contract, as well as the accounting treatment of real estate investments according to international accounting, and the basics of consolidated financial statements. With the knowledge acquired, the students can better understand and assess the accounting of companies and the differences between the national German Commercial Code (“HGB”) and international IFRS accounting.

Course contents:

- Basis of accounting according to IAS/IFRS
- Accounting for inventories and construction orders
- Accounting for real estate and other property, plant, and equipment
- Accounting for consolidated financial statements
- Balance sheet analysis

Teaching and study methods:	Lectures, exercises in individual work, case studies in group work
Course material:	Lecture notes online in ILIAS, exercises, and case studies are made available in the course.
Recommended study literature:	Coenenberg/Haller/Schultze, Jahresabschluss und Jahresabschlussanalyse: Betriebswirtschaftliche, handelsrechtliche, steuerrechtliche und internationale Grundlagen – HGB, IAS/IFRS, US-GAAP, DRS, Schäffer-Poeschel-Verlag, 2018
	Petersen/Bansbach/Dornbach, IFRS Praxishandbuch: Ein Leitfaden für die Rechnungslegung mit Fallbeispielen, 2018, Vahlen
	Grünberger, IFRS 2019: Ein systematischer Praxisleitfaden, 2019, NWB

Module IV – Corporate Governance

Module-No.:	**Courses:**	Organisational Behaviour and Leadership *
MBW-BI-04		Strategic Management *

Responsible for Module	Prof. Dr. Weilepp

Study Phase:	-	**Hours per Week:**	6 SWS
Semester:	1	**Workload:**	180 Hrs.
Module Duration	1 Semester	**Credit Points:**	6 LP
Status:	Required Module	**Examination Performance:**	Study Paper(s)| Written Exam
Cycle:	Each Semester	**Weighting for overall grade**	5 x

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
90 Hrs.	0 Hrs.	90 Hrs. | 88,5 Hrs.	Study Paper(s) | 1,5 Hrs . / 90 Min.

Hrs.-Information in industries minutes; no time minutes

Short description of module:

The module combines two management-specific courses. The central aim of the courses is to provide students with practically applicable knowledge about the basic theories, concepts, systematizations, methods, and instruments of corporate management. This is done by means of an analysis of selected management approaches, concepts, and instruments, and their respective practical applications, embedded in the history of dogma. The students are enabled to recognize management problems and to work on them with the help of the presented theory, concepts, and instruments.

The “Strategic Management” course is about being able to

- recognize and understand reasons for the success or failure of companies,
- develop and assess strategic options for companies with only incomplete information,
- select and implement the strategy that corresponds to the competitive situation.

The “Organizational Behavior and Leadership” course deals with questions of how actors behave in companies – individually or in groups – and how companies and their structures and processes function accordingly. Approaches are discussed as to how the behavior of employees can be influenced in such a way that it corresponds to the requirements of the individual as well as the company. The dimensions of “leadership” are debated by discussing leadership as a building block for generating success in companies. Leadership behavior, the role of the person being led, and the respective leadership situation are dealt with. Then there are the issues of power and influence.

Links between the module and other courses and modules

Due to its cross-sectional function, the “Business Management” module forms the basis for the business administration course and Module VIII “Management Skills”. It provides the necessary management knowledge for Module IX “Interdisciplinary project work” which enables the classification of the company or research-specific tasks. Module XI “Sustainability and Information Systems” and XII “Construction Management” will then be linked to it.
There are cross-connections to Modules I “Construction and Real Estate Markets” and II “Real Estate Project Development”, which run in parallel.
Finally, the module provides indispensable knowledge for the preparation of the master’s thesis.

Studiability for other degree programmes:

The module conveys competencies in management and corporate governance and can, therefore, be recommended for all master’s courses that are designed to develop executives. It is suitable for all business administration courses.

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MBW-BI - Business Administration (Construction and Real Estate)

Course:	Organisational Behaviour and Leadership *	Course-Code:
		MBW-BI-04.1

Responsible for Module	Prof. Dr. Weilepp

Study Phase:	-	**Hours per Week:**	2 SWS
Semester:	1	**Workload:**	60 Hrs .
Module Duration	Required Course	**Credit Points:**	2 LP
Cycle:	Each Semester	**Examination Performance:**	Study Paper(s)
Language of Instruction:	English		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
30 Hrs.	0 Hrs.	30 Hrs.	Study Paper(s)

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

No formal prerequisites, but basic knowledge of both undergraduate courses “Organization and Management“ as well as “Human Resources“ (Module XX / Bachelor’s Degree in Business Administration (Construction and Real Estate)).

Qualification objectives:

Upon successful completion of this module, students will be able to:

- Examine different approaches to management and leadership and theories of organization
- Explore the role of the leader and influence in organizational structure, culture, and employee motivation
- Demonstrate an understanding of working with and leading others, teamwork, groups, and group dynamics
- Demonstrate the ability to analyze and apply leadership and management models to contemporary business situations
- Evaluated and applied relevant leadership strategies to develop the effectiveness of teamwork

Course contents:

The module will give the students an introduction to the areas of leadership and management. Within the working environment, leaders and managers require an understanding that all employees are affected by both internal and external influences. The study of leadership and management will give students an introduction to the following areas:

- Leadership
- Leadership and management
- The function of management
- Approaches to leadership and management
- Power and authority
- Individual behavior at work
- Personality
- Perception
- Leading teams and groups
- Leadership and motivation
- Organizational culture
- Organizational structure
- Leadership in managing conflict
- Leadership in managing change

Teaching and study methods:	Lectures, workshop sessions, individual and group exercises, case studies, set reading, discussion, and debate
Course material:	Slides will be electronically in ILIAS
Recommended study literature:	Blanchard, K.: *The Heart of a Leader. Insights on the Art of Influence*, publishing house David C Cook Publishing Company, 2007
	Bloisi, W.: *Management and Organisational Behaviour*, 2nd Edition, publishing house McGraw-Hill Companies, 2009
	Mullins, L.J.: *Management and Organisational Behaviour*, 9th Edition, publishing house Financial Times Prent.Int, 2010
	Neuberger, O.: *Führen und führen lassen*, 6. Auflage, Lucius & Lucius Verlag, 2011

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MBW-BI - Business Administration (Construction and Real Estate)

Course:	Strategic Management *	Course-Code:
		MBW-BI-04.2

Responsible for Module	Prof. Dr. Weilepp

Study Phase:	-	**Hours per Week:**	4 SWS
Semester:	1	**Workload:**	120 Hrs.
Module Duration	Required Course	**Credit Points:**	4 LP
Cycle:	Each Semester	**Examination Performance:**	Written Exam, 90 Min.
Language of Instruction:	German		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
60 Hrs.	0 Hrs.	58,5 Hrs.	1,5 Hrs. / 90 Min.

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

No formal requirements. In terms of content, the course builds on Module XX “Organization and Human Resource Management” – in particular on the “Organization and Management” course – of the Bachelor’s Degree in Business Administration (Construction and Real Estate) or on comparable courses from other business administration degree courses.

Qualification objectives:

In this course, the students should get a comprehensive insight into the most important theoretical approaches of strategic management and be able to apply them in practice. This includes knowledge of the theory of strategic management as well as knowledge and skills in handling the instruments of strategic corporate management. Both competitive theoretical approaches (Competitive Strategy, Porter) and anti-competitive theoretical approaches (Blue Ocean Strategy, Kim and Mauborgne) are discussed.

This is supported didactically by working out practical case studies in teams and self-study. In addition, the topic “Blue Ocean Strategy” is learned with the help of the computer-based business game “Blue Ocean Strategy Simulation” from Stratx Simulations using a B2C case. With these practice-oriented and team-based teaching methods, the students obtain methodical, social, and personal skills such as presentation skills, problem-solving skills, communication and collaboration skills, team organization, and self-reflection, in addition to consolidating their knowledge. The students should also become acquainted with the possibilities and limits of information transfer described in the behavioral science approaches and be able to differentiate the behavioral science-inspired approaches of management from traditional approaches.

Course contents:

- The strategic management process
- The concept of corporate strategy
- Corporate and business area strategy
- Environmental and resource analysis
- Competitive strategies, competitive advantage, cost and differentiation advantages
- Essential elements of the blue ocean strategies

Teaching and study methods:	Lecture, case study work, simulation game
Course material:	Script and templates; Manual for the Blue Ocean Strategy Simulation Business Game
Recommended study literature:	Welge, M.K. / Al-Laham, A.: *Strategisches Management. Grundlagen – Prozess – Implementierung*, 7. Auflage, Gabler Springer Verlag, 2017
	Büchler, J.-P. et al.: *Fallstudienkompendium Hidden Champions.* Springer Gabler, 2018
	W.C. Kim and R. Mauborgne, *Blue Ocean Strategy*, Harvard Business Review Press, 2015
	Cyert, R.M. / March, J.G.*: A Behavioral Theory of the Firm*. MARTINO, 2013

Module V – Contracts in the Construction and Real Estate Industry

Module-No.: MBW-BI-05	**Courses:** Contracts in the Construction and Real Estate Industry

Responsible for Module	Prof. Dr. Dr. Geiger

Study Phase:	-	**Hours per Week:**	4 SWS
Semester:	1	**Workload:**	150 Hrs.
Module Duration	2 Semesters	**Credit Points:**	5 LP
Status:	Required Module	**Examination Performance:**	Written Exam
Cycle:	Each Semester	**Weighting for overall grade**	5 x

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
56 Hrs.	4 Hrs.	88,5 Hrs.	1,5 Hrs. / 90 Min.

Hrs.-Information in industries minutes; no time minutes

Short description of module:

Contracting plays a crucial role in day-to-day practice in the construction and real estate industries. It forms the basis for preserving, maintaining, and marketing real estate. The module deals with the design and handling of the most important contract types from the field of construction and real estate (German Civil Code ("BGB") construction contracts, construction contracts according to German Construction Contract Procedures ("VOB"), general contractor contracts, subcontractor contracts, planning contracts, property purchase contracts, rental contracts, brokerage contracts, developer contracts, urban development contracts, etc.) with the aim of independently developing the necessary contractual structure. Using standard contracts, the students experience the effects of contractual regulations on the respective contracting parties to be able to recognize the problems, risks, and opportunities associated with a contractual arrangement in professional work. The effects of legal regulations are taught and discussed in legal and economic terms. This gives the students solid basic knowledge. They should be in a position to work towards the goals envisaged by the contracting parties and their attainability with knowledge of the associated risks through their own solution approaches when concluding a contract.

Basic knowledge of civil and public law, as taught in a bachelor's degree in economics, is required, as well as the willingness to work through unfamiliar legal matters in self-study. Before/At the beginning of the semester, students with a first degree in technical subjects are offered assistance in familiarizing themselves with the methodology of legal case processing.

Links between the module and other courses and modules

Module V creates the basis for understanding the legal relationships and problems of real estate project development, project control, and project management, as well as real estate acquisition and inventory. Important contract structures for individual project phases are imparted. Knowledge of the legal and tax framework is an indispensable prerequisite for making a well-founded decision on developing, maintaining, and selling a property.
In addition, Module V represents a sensible extension and addition to the knowledge imparted in the compulsory elective Module I ("Construction Law" and "Real Estate Law" courses) of the Bachelor's Degree in Business Administration (Construction and Real Estate), without however requiring it to be mandatory.

Relevant links, therefore, exist to Modules II Real Estate Project Development, VI Real Estate Valuation and Asset Management, VII Construction and Real Estate Seminar, X Real Estate Investment and Financing, XII Construction Management and – depending on the specific task – possibly also to Module IX Interdisciplinary Project Work.

Studiability for other degree programmes:

Since architects, civil engineers, and project managers constantly have to negotiate with authorities, property owners, builders, construction companies, and potential investors in their professional practice, the module in which the legal problems and sensible contractual arrangements are explained during these negotiations is a useful addition to the curricula of the courses mentioned.

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MBW-BI - Business Administration (Construction and Real Estate)

Course:	Contracts in the Construction and Real Estate Industry	Course-Code:
		MBW-BI-05.1

Responsible for Module	Prof. Dr. Dr. Geiger

Study Phase:	-	**Hours per Week:**	4 SWS
Semester:	1	**Workload:**	150 Hrs
Module Duration	Required Course	**Credit Points:**	5 LP
Cycle:	Each Semester	**Examination Performance:**	Written Exam, 90 Min.
Language of Instruction:	English		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
56 Hrs.	4 Hrs.	88,5 Hrs.	1,5 Hrs. / 90 Min.

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

Basic knowledge of civil and public law, such as that imparted in a bachelor's degree in economics, is required. Knowledge of property purchase law, tenancy law and real estate law is particularly desirable. At the beginning of the semester, students with a first degree in technical subjects are offered assistance in familiarizing themselves with the methodology of legal case processing, and appropriate introductory literature is provided.

Qualification objectives:

In the part "Contracts in the real estate industry", students are given an overview of the most important legal and tax problem areas in the real estate industry along the life cycle of a property using original contracts and cases from practice. In addition to imparting and deepening knowledge, the focus is on sharpening awareness of the problem with regard to legal issues and learning the methodology of legal case processing. In the part "Contracts in the construction industry", contract types currently in use in the construction industry are presented using original and model contracts and their respective peculiarities and problem areas dealt with. In addition to an insight into the relevant types of contracts, important legal and practical problems in the construction industry are presented. The various contract variants for the construction of a property and their creation, e.g. in the tendering process, are explored and discussed with the students from a legal and economic point of view.

Course contents:

Contracts in the real estate industry:

- Land purchase agreements including the German condominium law, leasehold agreements, foreclosure law
- Loan and credit security contracts
- Commercial leases and management contracts for specialist properties
- Brokerage and developer contracts
- Open and closed real estate funds, REITs
- Selected tax law problems for real estate managers
- Urban development contracts

Contracts in the construction industry:

- Contracts according to German Construction Contract Procedures ("VOB") with reference to German Civil Code ("BGB") construction contracts and the preceding award procedure
- Construction joint ventures (JV) as special "BGB companies"
- General contractor contracts in their typical structural form
- Subcontractor agreements taking into account typical liability risks
- Planning contracts and the main features of the German Fee Structure for Architects and Engineers ("HOAI")

Teaching and study methods:	Lecture, case examples (also in group work), exercises based on practical cases, guest lectures by external practitioners, self-study, excursion to visit a project
Course material:	Script online in ILIAS, sample texts, cases with solutions to accompany the script, current publications from legal journals, legal texts
Recommended study literature:	Balensiefen, G. / Bönker, C. / Geiger, N. / Schaller, W. (Ed.): *Rechtshandbuch für die Immobilienpraxis*, Franz Vahlen publisher, 2009
	Locher, H. / Locher, U.: *Das private Baurecht*, 8th edition, Beck Juristischer publisher, 2012
	Roquette / Otto: *Vertragsbuch Privates Baurecht*, 2ne edition, C.H. Beck publisher, 2011
	Bönker, C. / Lailach, M.: *Praxisleitfaden Immobilienrecht*, 2nd edition, publishing house Beck Juristischer Verlag, 2009
	Handschumacher, J.: *Immobilienrecht praxisnah*, publishing house Springer, 2014

MBW-BI - Business Administration (Construction and Real Estate)

Module VI – Real Estate Valuation and Asset Management

Module-No.:	**Courses:**	International Real Estate Valuation and Markets
MBW-BI-06		Asset and Portfolio Management *

Responsible for Module	Prof. Dr. Ulreich

Study Phase:	-	**Hours per Week:**	6 SWS
Semester:	1 and 2	**Workload:**	240 Hrs.
Module Duration	2 Semesters	**Credit Points:**	8 LP
Status:	Required Module	**Examination Performance:**	Written Exam
Cycle:	Each Semester	**Weighting for overall grade**	8 x

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
90 Hrs.	0 Hrs.	148 Hrs.	2,0 Hrs. / 120 Min.

Hrs.-Information in industries minutes; no time minutes

Short description of module:

Due to the special international importance of the real estate asset class, the classification, risk assessment and valuation of real estate are of particular importance. Not least in this regard, is the necessity to deal with internationally recognized principles of real estate management.

The students should be able to analyze complex real estate portfolios with regard to their risk-return parameters as well as the possible uses, based on the valuation of individual properties and taking into account portfolio theory approaches. We pay special attention to the direct practical implementation as well as the application and differentiation of international evaluation standards.

Links between the module and other courses and modules

The course content of this module takes up the subject of valuation and portfolio management considering the internationalization of corporate activity in the global real estate industry.
Likewise, the basics of business mathematics (Module III “Mathematics and Statistics”) of the bachelor’s degree are used and these are further developed with regard to special calculations for real estate valuation.

Within the master’s course, the courses relate to Module II “Real Estate Project Development” and, in particular, to Module X “Real Estate Investment and Financing” and finally to Module VI “Real Estate Valuation and Asset Management”, as the investments, projects and their financing dealt with there are evaluated and compared – and are ultimately reflected in the company’s accounting, where they are presented according to international standards.

Studiability for other degree programmes:

Since architects, civil engineers, and project developers are also confronted with questions of market developments and their risks in their professional fields, an understanding of the mechanisms of action and their econometric processing is an essential part of this training.

MBW-BI - Business Administration (Construction and Real Estate)

Course:	International Real Estate Valuation and Markets	Course-Code:
		MBW-BI-06.1

Responsible for Module	Prof. Dr. Ulreich

Study Phase:	-	**Hours per Week:**	2 SWS
Semester:	1	**Workload:**	90 Hrs.
Module Duration	Required Course	**Credit Points:**	3 LP
Cycle:	Each Semester	**Examination Performance:**	Written Exam, 30 Min. / with Asset- und Portfoliomanagement; together 120 Min.
Language of Instruction:	German		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
30 Hrs.	0 Hrs.	59,5 Hrs.	0,5 Hrs. / 30 Min.

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

The students are proficient in accounting formulas and dynamic investment appraisal (participants without corresponding business management training will be provided with literature on financial mathematics before the start of the course, which will help them acquire the necessary knowledge). Knowledge of Excel is also required. There is already an understanding of how markets work, especially real estate markets.

Qualification objectives:

The students should be able to value real estate, to calculate specified and self-determined cash flows, cash values, or returns. They should be able to recognize the financial mathematical models in the usual ways of thinking and concepts of real estate valuation and be able to represent them in formulas. The students should know the importance of the value of a property and the different valuation methods. They should know how to deal with questions about the value of a property on various occasions, be it for purchase and sale decisions, for setting lending limits in the context of lending, etc. If the reasons for the valuation are largely identical, the individual methods of valuation in an international context may differ considerably due to different market structures as well as legal, political, and cultural differences. They should be able to classify these different procedures with their theoretical background and be able to work on practical examples (original cases) reliably.

Course contents:

- National and international concepts of value
- Market value
- Valuation method: comparative value, income value, material value
- Discount rates
- Basics of international real estate valuation
- National and international concepts of value
- Investment method, comparison method, depreciated replacement cost method, DCF method, residual method, profits method
- The valuation of real estate companies, real estate valuation, and rating

Teaching and study methods:	Lecture with integrated exercises, calculations in Excel on the PC, specialist lectures by guest lecturers from their professional practice, case studies (also in group work)
Course material:	Financial mathematics guide and exercise book / Biberach University of Applied Sciences script, lecture manuscript online in ILIAS, case studies for assessment in German and English
Recommended study literature:	Francke, H.-H. / Rehkugler, H.: *Immobilienmärkte und Immobilienbewertung*, 2nd edition, Vahlen publisher, 2011
	Paul, E.: *Immobilienbewertung in Europa – Wertlehren, Definitionen und Verfahren*, in: Gondring, H. / Lammel, E. (Ed.): Handbuch der Immobilienwirtschaft, Gabler publisher, 2001
	TEGoVA - The European Group of Valuers (Ed.): *Association: Europäische Bewetunsstandards* 2012
	Thöne, C. / Lorenz, D.P.: *Bewertung*, in: Mayrzedt, H. / Geiger, N. / Klett, E. / Beyerle, T. (Ed.): Internationales Immobilienmanagement, Vahlen publisher, 2007
	RICS-Bewertungsgrundsätze unter Berücksichtigung der internationalen Bewertungsstandards des IVSG

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MBW-BI - Business Administration (Construction and Real Estate)

Course:	Asset and Portfolio Management *	Course-Code:
		MBWL-BI-06.2

Responsible for Module	Prof. Dr. Ulreich

Study Phase:	-	**Hours per Week:**	4 SWS
Semester:	2	**Workload:**	150 Hrs.
Module Duration	Required Course	**Credit Points:**	5 LP
Cycle:	Each Semester	**Examination Performance:**	Written Exam, 90 Min. / with Internationale Immobilienbewertung und -märkte; together 120 Min.
Language of Instruction:	German		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
60 Hrs.	0 Hrs.	88,5 Hrs.	1,5 Hrs. / 90 Min.

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

Basic knowledge of economic mathematics (interest rate and annuity calculation), economic statistics and probability calculation is required. This includes, in particular, the confident handling of interest and annuity calculations, as well as familiarity with concepts from statistics (measures of position and dispersion, correlation, regression theory) and probability theory (random variables, expected value, variance, normal distribution). Such knowledge is taught, for example, in the corresponding courses of the Bachelor's degree programme in Business Administration.

Qualification objectives:

After successful participation, students will have a sound knowledge of the theoretical approaches to asset and portfolio management and will be able to apply and critically reflect on these. In addition to learning the scientific models and methods, this includes in particular the transfer to a real-life simulation game. In this game, students act as investment advisors to a wealthy client and carry out all the steps of asset and portfolio management (creating the client's risk profile, developing a strategic asset allocation, implementing this, reporting obligations, advising clients, etc.). Part of this real-life simulation is investing on the real capital market and thus also dealing with the unpredictable, current economic development. In this way, students directly experience the challenges and limits between theory and practical implementation and can critically scrutinise, explain and evaluate results. Furthermore, students actively engage with an ethical approach to investment decisions.

Course contents:

- Introduction to asset and portfolio management (magic triangle, asset classes, SAA / TAA, investment styles)
- Portfolio theory according to Markowitz and Tobin (determination of efficient portfolios, selection of optimal portfolios, capital asset pricing model)
- Special aspects of behavioural finance theory and the associated risk profiles of clients and ethics-oriented discussion of investment management
- Valuation of assets and options (micro/macro data, fundamental analysis, technical analysis, binomial models, Black-Scholes model)
- Portfolio management (portfolio management process, active trading on the stock market, risk management, reporting obligations, concepts such as CPPI, option and duration strategies)

Teaching and study methods:	Lecture, self-study, real-life simulation with dialogue situations, presentations
Course material:	All documents (videos, texts, exercises, ...) are provided by the course team
Recommended study literature:	Jesch/Brodehser (2023): Institutionelle Kapitalanlage. Schäffer-Poeschel Verlag für Wirtschaft, Steuern, Recht GmbH
	Spremann (2008): Portfoliomanagement. Oldenbourg Wissenschaftsverlag
	Günther et al. (2012): Portfolio-Management. Frankfurt School Verlag

Module VII – Construction and Real Estate Economic Seminar

Module-No.:	Courses: Construction and Real Estate Economic Seminar
MBW-BI-07	

Responsible for Module	Prof. Dr. Heyser

Study Phase:	-	**Hours per Week:**	4 SWS
Semester:	2	**Workload:**	150 Hrs.
Module Duration	1 Semester	**Credit Points:**	5 LP
Status:	Required Module	**Examination Performance:**	Study Paper(s)
Cycle:	Each Semester	**Weighting for overall grade**	5 x

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
60 Hrs.	0 Hrs.	90 Hrs.	Study Paper(s)

Hrs.-Information in industries minutes; no time minutes

Short description of module:

This module delves deeper into key topics that can be chosen by the students themselves in coordination with the lecturer.

The module also shows the complex dependencies of construction processes and real estate economic constraints.

The students should also create independent project work and present it in detail.

Links between the module and other courses and modules

The content of the module is linked to the skills of Modules XII “Construction Management” and X “Real Estate Investment and Financing”. This fact enables the students to work on sub-fields independently and intensively. In addition to construction and economic topics, the areas of finance, law, and organization are also dealt with.

Studiability for other degree programmes:

In this module, graduates who have previously been somewhat removed from the subject are introduced to the practical application of the “economic toolbox” in the areas of market assessments, investment processes, building stock analyses, etc. This also takes place in the context of on-site meetings with real estate and construction companies together with the respective professors and is then explored partly interactively and in group work at the university.

MBW-BI - Business Administration (Construction and Real Estate)

Course:	Construction and Real Estate Economic Seminar	Course-Code:
		MBW-BI-07.1

Responsible for Module	Prof. Dr. Heyser

Study Phase:	-	**Hours per Week:**	4 SWS
Semester:	2	**Workload:**	150 Hrs.
Module Duration	Required Course	**Credit Points:**	5 LP
Cycle:	Each Semester	**Examination Performance:**	Study Paper(s)
Language of Instruction:	German		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
60 Hrs.	0 Hrs.	90 Hrs.	Study Paper(s)

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

The basic knowledge acquired from Modules VIII “Construction and Building Technology”, XI “Construction Prices and Costs” and XIII “Construction Management” as imparted in the Bachelor’s Degree in Business Administration (Construction and Real Estate) or another construction-related course or from personal practical experience is a prerequisite for the construction management sub-field. In the field of real estate, students should have basic knowledge of at least two of the areas portfolio theory, real estate economics, valuation, real estate law, and taxation. They can already independently classify objects with regard to their further use and have already made initial presentation experience.

Qualification objectives:

Technical due diligence (TDD) forms an essential basis for buying and selling decisions. “Due diligence” describes how carefully the contractual object is examined prior to the acquisition when buying or selling a property. Due diligence checks include, in particular, a systematic analysis of the strengths and weaknesses of the property, an analysis of property risks, and a well-founded assessment of the property’s condition. In particular, the seminar participants get to know the crucial property criteria which are used to analyze real estate. In this context, knowledge of equipment standards, the service life of components, and building functions (space economy) is imparted. In the real estate sub-field, students should be able to independently analyze specific problems from the real estate industry and solve them according to current academic standards. The students can present the investigation in front of a specialist audience and can defend it accordingly.

Course contents:

In the construction-related part of the seminar, the focus is on technical real estate due diligence. The transfer of knowledge in the seminar takes place using case studies, which are worked on and discussed in group work. By working together on case studies, analytical skills, networked thinking, and the ability to work in a team as well as leadership skills are promoted. The seminar participants will work in groups to prepare and carry out a real estate due diligence on a specific practical project. Within the real estate management topic selection, processing priorities can be selected in the areas of portfolio management, CAPM, rating, financing, funds, valuation, CREM, demography, etc. The lecturer gives suggestions and provides individual support to the student as they work their way through the topic up to the presentation before the respective semester. Interdisciplinary processes with students are offered in Module XII “Construction Management”. In addition, during the semester the lecturer gives lectures on special/current topics, such as AM contracts, portfolio calculation, structured bidding processes, or international investors, which also stimulate the students on new topics.

Teaching and study methods:	Lecture, practical examples, exercises, role-playing, analyses, individual and group work, individual presentation, discussions
Course material:	Lecture notes online in ILIAS, handouts
Recommended study literature:	AHO - Ausschuss der Verbände und Kammern der Ingenieure und Architekten für die Honorarordnung e.V. (Ed.): *Untersuchung zu interdisziplinären Leistungen zur Wertoptimierung von Bestandsimmobilien*, book 21, series, 2006
	BMVBS - Bundesministerium für Verkehr-, Bau- und Stadtentwicklung (Ed.): *Normalherstellungskosten 2010. NHK 2010*, 2012

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MBW-BI - Business Administration (Construction and Real Estate)

Module VIII – Management-Skills

Module-No.:	**Courses:**	Customer and Investor Relationship *
MBW-BI-08		English –Negotiation *

Responsible for Module	Prof. Dr. Heyser

Study Phase:	-	**Hours per Week:**	6 SWS
Semester:	2	**Workload:**	180 Hrs.
Module Duration	1 Semester	**Credit Points:**	6 LP
Status:	Required Module	**Examination Performance:**	Oral Exam
Cycle:	Each Semester	**Weighting for overall grade**	6 x

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
90 Hrs.	0 Hrs.	89,5 Hrs.	0,5 Hrs. / 30 Min.

Hrs.-Information in industries minutes; no time minutes

Short description of module:

These two courses are to allow the students to deepen their English practice in two common areas of everyday work-in-life, whether applying for employment or communicating with business partners. The stress is on management skills; however, students are encouraged to follow their own fields of interest, so that they feel supported in their self-development, finding their own strengths and areas for self-expression and expansion in international business activities.
The German word “Betriebswirtschaft” does not allow an understandable translation into the English language as it relies entirely on the German culture it comes from and shows the difference between the ‘generalist’ (Germany) and ‘specialist’ (UK) cultures. The course takes over the idea of business studies in the UK and overlays the property and construction businesses, particularly the profession of surveying, concentrating on product marketing and valuation issues, where communication skills become more than just language issues, but rather develop into awareness, holism, creativity, and inventiveness.

Links between the module and other courses and modules

The course fits into the University of Applied Sciences overall philosophy of internationality and offering experiences in cultural exchange outside the German environment.
This mean, they pick up special themes and enrich them with international and intercultural aspects and the English vocabulary.
Communication skills and behavioral patterns as learned and practiced in these courses are useful for any other fields of business or construction and real estate management.

The course fits into the University of Applied Sciences overall philosophy of 'Studium Generale' and internationality, offering experiences in cultural exchange outside the German environment.

As the contents of the courses are chosen individually every time according to the student's fields of interest, the courses can deal with all the subjects of other courses (of the master's studies itself, the bachelor studies of Construction and Real Estate Management or of any other studies or practical experiences). This means, they pick up special themes and enrich them with international and intercultural aspects and the English vocabulary.

Communication skills and behavioural patterns as learned and practiced in these courses are useful for any other fields of business or construction and real estate management.

Studiability for other degree programmes:

The module develops communication skills in B2B processes on an abstract, practical, and intercultural level and prepares future managers in particular, regardless of their professional orientation, in the extended areas of dealing with employees and leadership, customer management and acquisition as well as their economic importance in the company.

MBW-BI - Business Administration (Construction and Real Estate)

Course:	Customer and Investor Relationship *	Course-Code:
		MBW-BI-08.1

Responsible for Module	Prof. Dr. Heyser

Study Phase:	-	**Hours per Week:**	2 SWS
Semester:	2	**Workload:**	60 Hrs.
Module Duration	Required Course	**Credit Points:**	2 LP
Cycle:	Each Semester	**Examination Performance:**	Oral Exam, 15 Min.
Language of Instruction:	English		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
30 Hrs.	0 Hrs.	29,75 Hrs.	0,25 Hrs. / 15 Min.

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

The students can follow subject-specific discussions in English and actively participate in them. They have a basic knowledge of business communication processes and the ability to negotiate.

Qualification objectives:

The students should understand the interrelationships of long-term business relationships both with customers and with all relevant stakeholders of a company. The aim is to convey the complexity of multilateral relationship management in relation to sustainable business success.

Course contents:

- Communication training and meeting preparation
- Identification of success factors in the customer and investor relationship (CIR)
- Analysis and use of suitable instruments for the CIR
- Costs and benefits of cross-selling processes
- Information management within the individual CIR
- Early identification of risks and opportunities within the CIR process

Teaching and study methods:	Interactive lecture, practical exercises, group work, independent study
Course material:	Lecture notes, readings, personal contributions
Recommended study literature:	Peelen, E. / Beltman, R.: *Customer Relationship Management*, 2nd edition, publishing house Pearson Education Limited, 2013
	Buttle, F.: *Customer Relationship Management*, 2nd edition, publishing house Taylor & Francis, 2009
	Bruhn, M.: *Relationship Marketing. Das Management von Kundenbeziehungen*, 3rd edition, Vahlen publisher, 2013
	Georgi, D. / Hadwich, K. (Ed.).: *Management von Kundenbeziehungen. Perspektiven - Analysen - Strategien - Instrumente*, Gabler publisher, 2009

MBW-BI - Business Administration (Construction and Real Estate)

Course:	English –Negotiations *	Course-Code:
		MBW-BI-08.2

Responsible for Module	Prof. Dr. Heyser

Study Phase:	-	**Hours per Week:**	4 SWS
Semester:	2	**Workload:**	120 Hrs.
Module Duration	Required Course	**Credit Points:**	4 LP
Cycle:	Each Semester	**Examination Performance:**	Oral Exam, 15 Min.
Language of Instruction:	English		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
60 Hrs.	0 Hrs.	59,75 Hrs.	0,25 Hrs. / 15 Min.

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

The students recognize real estate industry contexts and can express themselves in English. The language level of the advanced technical college certificate is regarded as the standard for this.

Qualification objectives:

The students can conduct contract negotiations independently in English, organize meetings, and chair them independently. They will have all the necessary knowledge to be able to conduct intercultural communication.

Course contents:

The students acquire knowledge in the field of conducting complex negotiations in English. To this end, various “communications skills” are learned and practiced. The specifics of intercultural communication beyond national borders are practiced as well as the organization and implementation of meetings and their specifics and dangers. International commercial investment and rental contracts are processed and special features are presented in detail. The course is in English.

Teaching and study methods:	Lecture, discussions about the abovementioned topics and topics suggested by the students, exercises, presentations and project work
Course material:	Lecture notes online in ILIAS
Recommended study literature:	Böhler, W. / Hinck, M.: *Das Kompendium. Wirtschaftsenglisch*, 3rd edition, Merkur publisher, 2008
	Shipside, S. / Jeavons, T. & Company (Ed): *Effective Communications (worklife)*, publishing house Dorling Kindersley Adult, 2007

MBW-BI - Business Administration (Construction and Real Estate)

Module IX – Interdisciplinary Project Work

Module-No.: **MBW-BI-09**	**Courses:** Interdisciplinary Project Work

Responsible for Module	Prof. Dr. Beyerle

Study Phase:	-	**Hours per Week:**	4 SWS
Semester:	2	**Workload:**	180 Hrs.
Module Duration	1 Semester	**Credit Points:**	6 LP
Status:	Required Module	**Examination Performance:**	Project Work(s)
Cycle:	Each Semester	**Weighting for overall grade**	6 x

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
60 Hrs.	0 Hrs.	120 Hrs.	Project Work(s)

Hrs.-Information in industries minutes; no time minutes

Short description of module:

“Interdisciplinary project work” is located at the interface between theory and practice. As part of the project work, the students are confronted with specific questions from business and operational practice or ongoing research projects. When working on the project, particular emphasis is placed on intensive, performance-oriented cooperation in the project teams.

“Interdisciplinary project work” aims to bring theory and practice together. As part of their project work, students apply for advertised projects or develop their own project task in cooperation with lecturers and practice partners.

The projects should not only result in useful problem solutions for companies and research but also networks of relationships for later career entry.

As part of the project work, suggestions for the master’s thesis are usually also made.

Links between the module and other courses and modules

The module follows on from Modules I “Construction and Real Estate Markets”, II “Real Estate Project Development” and IV “Business Management” by encouraging students to apply the knowledge they have acquired there.

It forms the basis for further modules: Module XII “Construction Management”, in particular, the class “Success factors in project management” (Module XII) will collect the experiences of the students. In addition, the module enables the development of skills that are required in the master’s thesis and can promote the development of topics for the master’s thesis.

Studiability for other degree programmes:

As an interdisciplinary module, this module builds on relevant prior business and legal knowledge. It is a module with very particular requirements that only appears to be suitable to a limited extent for other courses of study. (Exception: The project management degree course)

MBW-BI - Business Administration (Construction and Real Estate)

Course:	Interdisciplinary Project Work *	Course-Code:
		MBW-BI-09.1

Responsible for Module	Prof. Dr. Beyerle

Study Phase:	-	**Hours per Week:**	4 SWS
Semester:	2	**Workload:**	180 Hrs.
Module Duration	Required Course	**Credit Points:**	6 LP
Cycle:	Each Semester	**Examination Performance:**	Project Work(s)
Language of Instruction:	German		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
60 Hrs.	0 Hrs.	120 Hrs.	Project Work(s)

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

Module IV “Business Management” is the basis for successful project work. Knowledge of Module IX “Academic work and Presentation Techniques” of the Bachelor’s Degree in Business Administration (Construction and Real Estate) is required and is not part of the course.

Qualification objectives:

“Interdisciplinary project work” deals with selected practice-relevant topics from the construction, real estate, and energy industries as well as the areas of general business administration and economics. The module gives students an insight into business administration as an applied science and helps to further develop the students’ “power of reality” by using a comprehensive project task to learn how business theory is linked to a practical problem.

The students acquire the following skills in detail:

- Putting methods into practice, especially data collection and analysis
- Creation of an independent practical-empirical paper in small groups under the guidance of a supervisor
- Regular discussions of the intermediate steps with the supervisors and practice partners
- Public relations and relationship management with regard to the client

In addition, the students get to know the methods of project management as well as the risks and opportunities of group work.

Course contents

In the course “Interdisciplinary Project Work”, research-based learning and action are the focus. Disciplinary knowledge and interpretation patterns, the planning and implementation of praxis, and its theory-based empirical analysis and reflection constitute a project for applied business research.

The practical work in the field of business, as well as the project activities, are prepared, planned, carried out, and finally reflected on. Specific steps/sequence of the “interdisciplinary project work”:

- Presentation of the topic and the milestones
- Problem definition
- Identification and discussion of the measures necessary to solve the problem
- Information evaluation (preparation, analysis, and compression of the data to a level necessary for decision-making)
- Development of solution to the problem
- Final presentation
- Creation and submission of the project report including the documentation of the steps carried out
- Final presentation and submission of the project by the client

Teaching and study methods:	Project study, coaching, discussion of project in plenary session
Course material:	Lecture materials online in ILIAS
Recommended study literature:	Patzak, G. / Rattay, G.: *Projektmanagement. Leitfaden zum Management von Projekten, Projektportfolios und projektorientierten Unternehmen*, 5th edition, Linde publisher, 2012
	Litke, H.D.: *Projektmanagement. Methode, Techniken und Verhaltensweisen*, 5th edition, Carl Hanser publisher, 2007

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MBW-BI - Business Administration (Construction and Real Estate)

Module X – Real Estate Investment and Financing

Module-No.:	**Courses:**	Investment Appraisal and Quantitative Methods *
MBW-BI-10		Individual and Portfolio Investments
		National and International Real Estate Financing

Responsible for Module	Prof. Dr. Lassen

Study Phase:	-	**Hours per Week:**	8 SWS
Semester:	2 and 3	**Workload:**	330 Hrs.
Module Duration	2 Semesters	**Credit Points:**	11 LP
Status:	Required Module	**Examination Performance:**	Written Exam
Cycle:	Each Semester	**Weighting for overall grade**	11 x

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
120 Hrs.	0 Hrs.	206,5 Hrs.	3,5 Hrs. / 390 Min.

Hrs.-Information in industries minutes; no time minutes

Short description of module:

This extensive module gives the students the tools to develop their own ideas regarding the financing of and investments in real estate and be ready to negotiate a deal with market partners.

This module summarizes the qualitative (descriptive, market-oriented) and quantitative (mathematical, analytical) facts that allow the description and analysis of complex real estate-specific investment and financing processes.

One of the most important tasks in business life is to manage the risk and return of a portfolio and to measure and assess its performance. For this purpose, facts are described, quantitative models are developed, methods of investment appraisal are practiced and tools are provided – with special consideration for real estate.

The aim of this module is based on two pillars: the imparting of theoretical-methodological knowledge and the practical application of these methods in practical cases.

Links between the module and other courses and modules

Investment and financing processes do not take place abstractly “in a vacuum”, but are embedded in specific market events (Module I “Construction and Real Estate Markets”) or project developments (Module II “Real Estate Project Development”). It is, therefore, helpful to have completed these modules beforehand. There is contact (but no overlaps) with the (international) portfolio view as conveyed in Module VI “Real Estate Valuation and Asset Management”.

In this module, the courses “Investment Appraisal and Quantitative Methods” and “Individual and Portfolio Investments” are examined together, whereby the course “Investment Appraisal and Quantitative Methods” is more quantitative and mathematical and the course “Individual and Portfolio Investments” is more descriptive and verbal.

Studiability for other degree programmes:

This module has demanding requirements from general business administration for financing and investment. The module constitutes a specific feature of this degree course and its focus. It is, therefore, only suitable for other courses of study in exceptional cases and after consultation.

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MBW-BI - Business Administration (Construction and Real Estate)

Course:	Investment Appraisal and Quantitative Methods *	Course-Code:
		MBW-BI-10.1

Responsible for Module	Prof. Dr. Lassen

Study Phase:	-	**Hours per Week:**	2 SWS
Semester:	2	**Workload:**	90 Hrs.
Module Duration	Required Course	**Credit Points:**	3 LP
Cycle:	Each Semester	**Examination Performance:**	Written Exam, 60 Min. / with Individual and Portfolio Investments; together 120 Min.
Language of Instruction:	German		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
30 Hrs.	0 Hrs.	59 Hrs.	1,0 Hrs. / 60 Min.

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

Students have knowledge of the basic investment options and are familiar with basic financial mathematics and statistical relationships. Such knowledge is taught, for example, in the corresponding courses of the Bachelor's degree programme in Business Administration.

Qualification objectives:

Students learn about quantitative methods that are particularly useful in business management applications and expand their existing basic knowledge. These newly learnt methods can be assessed and applied with regard to their opportunities and limitations and their results can be critically evaluated. Students are able to apply theoretical concepts to practical cases. Special emphasis is placed on the practical implementation in Excel or in VBA macros.

Course contents:

- Application of statistical methods for KPI analysis of simulation results
- Interest rate theory and interest rate forecasting models
- Default risks and their evaluation using ratings, as well as integration into cash flow models
- Dynamic and simulative valuation methods of investment calculation, e.g. Monte Carlo simulation

Teaching and study methods:	Inverted classroom with self-preparation and joint plenary sessions to discuss questions, exercises, real-life examples
Course material:	All documents (videos, texts, exercises, ...) are provided by the course team
Recommended study literature:	Brealey, R.A. / Myers, S.C. / Allen, F.: *Principles of Corporate Finance*, 13rd Edition, publishing house Mcgraw-Hill Higher Education, 2019
	Schüler, A.: *Finanzmanagement mit Excel. Grundlagen und Anwendungen*, 2. Auflage, Vahlen Verlag, 2016
	Löffler, G.; Posch, P.: *Credit Risk Modeling using Excel and VBA*, 1st edition, Wiley Finance Series, 2010
	Hull, J.C.: *Optionen, Futures und andere Derivate*, 10. Auflage, Verlag Pearson Education, 2017

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MBW-BI - Business Administration (Construction and Real Estate)

Course:	**Individual and Portfolio Investments**	**Course-Code:**
		MBW-BI-10.2

Responsible for Module	Prof. Dr. Lassen

Study Phase:	-	**Hours per Week:**	2 SWS
Semester:	2	**Workload:**	90 Hrs.
Module Duration	Required Course	**Credit Points:**	3 LP
Cycle:	Each Semester	**Examination Performance:**	Written Exam, 60 Min. / with Investment Appraisal and Quantitative Methodes; together 120 Min.
Language of Instruction:	German		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
30 Hrs.	0 Hrs.	59 Hrs.	1,0 Hrs. / 60 Min.

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

Students have knowledge of basic investment opportunities, particularly in the property sector, and are familiar with basic financial mathematics and statistical relationships. Such knowledge is taught, for example, in the corresponding courses of the Bachelor's degree programme in Business Administration, particularly in the Construction and Real Estate specialisation.

Qualification objectives:

Students learn about the principle of diversification both qualitatively and quantitatively, particularly with a focus on property investment, and are familiar with its effects and limitations in practical implementation. They understand why property is interesting from the perspective of large institutional investors and gain insights into the asset management of insurance companies and building societies. Despite all the assumed rationality in the models, students understand why people are not as rational in reality as is assumed and how they reach decisions. Students know how to prepare for this in risk management and how to set up a risk management system. They are able to critically scrutinise and evaluate real-life situations and make recommendations.

Course contents:

- Investment opportunities in property (direct vs. indirect, equity vs. equity investment, ...)
- Diversification in property investments
- Property investments from the perspective of long-term investors
- Behavioural economics in decision and investment theory
- Introduction to risk management and adaptation to property investments

Teaching and study methods:	Course with integrated exercises, case studies (practical examples), group work
Course material:	All documents (presentations, scripts, texts, exercises, ...) are provided by the course team
Recommended study literature:	Jesch/Brodehser (2023): Institutionelle Kapitalanlage. Schäffer-Poeschel Verlag für Wirtschaft, Steuern, Recht GmbH
	Pfnür, A.: *Modernes Immobilienmanagement*, 3rd edition, Springer Gabler publisher, 2011
	Kahneman, D.: *Thinking, Fast and Slow*, publishing house Penguin Books Ltd., 2012

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MBW-BI - Business Administration (Construction and Real Estate)

Course:	National and International Real Estate Financing	Course-Code:
		MBW-BI-10.3

Responsible for Module	Prof. Dr. Lassen

Study Phase:	-	**Hours per Week:**	4 SWS
Semester:	3	**Workload:**	150 Hhrs.
Module Duration	Required Course	**Credit Points:**	5 LP
Cycle:	Each Semester	**Examination Performance:**	Written Exam; 90 Min.
Language of Instruction:	German		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
60 Hrs.	0 Hrs.	88,5 Hrs.	1,5 Hrs. / 90 Min.

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

Basic knowledge of business mathematics and probability theory is required, as is knowledge of basic financial instruments. This knowledge is imparted in the corresponding courses of the Bachelor's Degree in Business Administration (Construction and Real Estate). In addition, this course builds on the courses "Asset and Portfolio Management" (Module VI), "Investment Appraisal and Quantitative Methods" (Module X), and "Individual and Portfolio Investments" (Module X).

Qualification objectives:

The students understand the specifics of international real estate finance. They know about the economic relationships between different currency areas and can critically evaluate various monetary policy measures. With regard to the hedging of currency risks in real estate financing projects, they are familiar with various hedging instruments, can apply these appropriately in practical examples and case studies, and evaluate them critically and quantitatively. The students can critically question, explain and evaluate results.

Course contents:

- Purpose and role of financial markets
- Cash flow modeling with the help of Excel
- Real estate financing
  - Private and commercial financing
  - Building society savings system and building society management
  - Special features of international real estate financing
  - Selected instruments of international real estate financing (e.g. lifetime mortgages)
- Currency and exchange rate theory
  - Currency theory models
  - Monetary policy and crises
  - Currency risks and their hedging
  - Evaluation of hedging instruments

Teaching and study methods:	Course with integrated exercises and case studies (real-life examples), group work, etc. Student presentations
Course material:	Lecture notes and exercise sheets online in ILIAS, current press and literature sources, commented PDF print screens and Excel worksheets
Recommended study literature:	Breuer, W.: *Unternehmerisches Währungsmanagement*, 3rd edition, publishing house Gabler, 2015
	Hull, J.C.: *Optionen, Futures und andere Derivate*, 9th edition, publishing house Perason Education, 2015
	Lauer, J.: Strukturierte Immobilienfinanzierung, 2nd edition, Fritz Knapp publisher, 2008
	Stocker, K.: *Management internationaler Finanz- und Währungsrisiken*, 3rd edition, publishing house Springer Gabler, 2013
	Lorz, O. / Siebert, H.: *Außenwirtschaft*, 9th edition, publishing house Lucius & Lucius, 2014

MBW-BI - Business Administration (Construction and Real Estate)

Module XI – Sustainability and Information Systems

Module-No.:	**Courses:**	Information and Communication Systems *
MBW-BI-11		Green Building and Life Cycle Costs

Responsible for Module	Prof. Dipl.-Ing. Grandel

Study Phase:	-	**Hours per Week:**	4 SWS
Semester:	2 and 3	**Workload:**	150 Hrs.
Module Duration	2 Semesters	**Credit Points:**	5 LP
Status:	Required Module	**Examination Performance:**	Written Exam | Study Paper(s)
Cycle:	Each Semester	**Weighting for overall grade**	5 x

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
60 Hrs.	0 Hrs.	89 Hrs. | Hrs Std.	1,0 Hrs. / 60 Min. | Study Paper(s)

Hrs.-Information in industries minutes; no time minutes

Short description of module:

The module is for the academic development of and practical reflection on aspects of life cycle costs.
Today, IT-supported information and communication systems are a central instrument for supporting the planning, management, and control of business decisions.

When using data processing for support management, ERP software plays a major role. Using the example of the ERP software SAP R/3, aspects from the introduction about operations in companies are highlighted.
The possibilities and limits of data processing when used for the above-mentioned key areas of strategy, organization, planning, and HR management are presented in detail.

Sustainability is a key issue and a growth market in the construction and real estate industry. It is not just about ecological construction methods and the reduction of occupancy and operating costs. When planning, constructing, and operating buildings, technical and economic considerations, as well as aspects of marketing and corporate identity, play a role. The sustainability of real estate is demonstrated by certificates from various providers. The leading certification system options, which have a decisive influence on the long-term value of a property, are presented in detail and discussed in connection with the costs to be incurred.

Links between the module and other courses and modules

The course “Information and Communication Systems” builds on Module IV “Business Information Systems” of the Bachelor’s Degree in Business Administration (Construction and Real Estate) and deepens knowledge of ERP systems to achieve a holistic view of intra- and inter-organizational processes.

The course “Green Building and Life Cycle Costs” builds on the basic knowledge of Module VIII “Construction and Building Technology” of the Bachelor’s Degree in Business Administration (Construction and Real Estate).
The content is linked, in particular, to Modules II “Real Estate Project Development” and VI “Real Estate Valuation and Asset Management”.

Studiability for other degree programmes:

The course is generally compatible with other courses, provided that the necessary requirements are met.

MBW-BI - Business Administration (Construction and Real Estate)

Course:	Information and Communication Systems *	Course-Code:
		MBW-BI-11.1

Responsible for Module	Prof. Dipl.-Ing. Grandel

Study Phase:	-	**Hours per Week:**	2 SWS
Semester:	2	**Workload:**	60 Hrs.
Module Duration	Required Course	**Credit Points:**	2 LP
Cycle:	Each Semester	**Examination Performance:**	Written Exam; 60 Min.
Language of Instruction:	German		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
30 Hrs.	0 Hrs.	29 Hrs.	1,0 Hrs. / 60 Min.

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

Basic business knowledge is an advantage, especially in accounting (e.g. knowledge as taught in the Bachelor's Degree in Business Management (Construction and Real Estate) in Module V "Introduction to Accounting"). If students without prior knowledge are among the participants, the lecturer will give an introduction to the relevant business and accounting issues at the appropriate point.

Qualification objectives:

The students should recognize the comprehensive importance of a large ERP system for a company and the importance of SAP R/3 in the German ERP landscape. The course is intended to enable students to identify important fields of action in companies, to use the methods of (business) computer science they have learned to increase energy efficiency, and to evaluate the resulting effects.

Based on this basic knowledge, the students should be able to form an opinion about the possibilities and limits of the use of ERP software in different areas of corporate management.

Course contents:

The course deals with the use of information and communication systems to increase efficiency in various industries. For this purpose, the fundamentals from the areas of system development, system implementation, and potential benefits assessment are conveyed, and using specific applications, it is shown how methods from (business) information systems can be used to achieve corporate goals.

In the course, the ideas behind "large-scale data processing" are conveyed using various practical examples.

- Case study: Order processing
- Case study: Procurement of trading software
- Case study: Complaint handling
- Possible case study: Automated procurement

Teaching and study methods:	Lecture, practical case studies, exercises on the PC, written worksheets for independent work on case studies
Course material:	Lecture notes and handouts online in ILIAS
Recommended study literature:	Thome, R. / Winkelman, A.: *Grundzüge der Wirtschaftsinformatik*, publishing house Springer Gabler, 2015
	Keller, G. / Teufel, T.: *SAP R/3 prozessorientiert anwenden*, publishing house Addison Wesley, 2015
	Staud, J.L.: *Geschäftsprozessanalyse*, 3rd edition, publishing house Springer, 2006
	Several authors (Ed.): *What Every Business Student Needs to Know About Information Systems*, In: Communications of the Association for Information Systems, Volume 9, Article 30, pages 467 - 477, 2002

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MBW-BI - Business Administration (Construction and Real Estate)

Course:	Green Building and Life Cycle Costs	Course-Code:
		MBW-BI-11.2

Responsible for Module	Prof. Dipl.-Ing. Grandel

Study Phase:	-	**Hours per Week:**	2 SWS
Semester:	3	**Workload:**	90 Hrs.
Module Duration	Required Course	**Credit Points:**	3 LP
Cycle:	Each Semester	**Examination Performance:**	Study Paper(s)
Language of Instruction:	German		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
30 Hrs.	0 Hrs.	60 Hrs.	Study Paper(s)

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

Basic knowledge of building types and structural designs as well as the basics of real estate project development and valuation.

Qualification objectives:

The course provides basic knowledge of a growth market that is of central importance for the construction and real estate industry: “Real estate project sustainability”.
In addition to concepts for ecological construction, the focus is on reducing occupancy and operating costs, as well as sociological aspects.
The participants first work out the status quo of the currently applicable legal framework and funding incentives. On this basis, the focus is on evaluating the sustainability of real estate projects.
In Germany, the German Sustainable Building Council (“DGNB”) has established itself as an opinion leader for assessing sustainability. Internationally, the US label LEED is a leader. The oldest certification system, BREEAM from Great Britain also has a high market share. These three certification companies dominate the German real estate market with their certificates. The concepts differ and define sustainability based on different criteria.
The process of certification of real estate projects according to the criteria of DGNB, LEED, and BREEAM will be contrasted. Sustainability always includes the process chain of planning, building, operating, and thus the entire life cycle of a property.
Finally, the profitability of sustainability measures is critically discussed from the perspective of the client/project developer. Investment costs and benefits are compared. Up-to-date results from research are continuously integrated into the course.

Course contents:

- The legal framework: German Energy Saving Ordinance (“EnEV”) and Renewable Energy Law (“EEG”)
- Green Building – Green Tech – Sustainability
- Operational costs in building construction
- Certification system according to DGNB
- Certification system according to LEED and BREEAM
- Investment costs versus benefits (profitability comparison)
- Life cycle cost consideration
- Funding incentives

Teaching and study methods:	Lecture, practical examples, exercises, group work, videos
Course material:	Lecture notes online in ILIAS, handouts
Recommended study literature:	Volland, J.: *Energieeinsparverordnung (EnEV)*, 3rd edition, Rehm publisher, 2014
	DVP Deutscher Verband der Projektmanager in der Bau- und Immobilienwirtschaft e.V. (Ed.): *Nutzungskostenmanagement als Aufgabe der Projektsteuerung*, publishing house DVP-Verlag, 2009
	DGNB, LEED, BREEAM brochures

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MBW-BI - Business Administration (Construction and Real Estate)

Module XII - Construction Management

Module-No.:	**Courses:**	Claim Management
MBW-BI-12		Success Factors of Project Management

Responsible for Module	Prof. Dr. Hornuff

Study Phase:	-	**Hours per Week:**	4 SWS
Semester:	3	**Workload:**	150 Hrs.
Module Duration	1 Semester	**Credit Points:**	5 LP
Status:	Required Module	**Examination Performance:**	Study Paper(s)
Cycle:	Each Semester	**Weighting for overall grade**	5 x

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
60 Hrs.	0 Hrs.	90 Hrs.	Study Paper(s)

Hrs.-Information in industries minutes; no time minutes

Short description of module:

This module focuses on typical practical challenges in the handling of construction projects. In view of persistently strong price competition, the general economic conditions for the construction industry in Germany are tense. Companies in the construction industry are reacting to this situation, in particular, through structural changes and ongoing professionalization.

Claim management, in particular, has become a decisive success factor for construction companies. In almost every national and international construction project, the ability to sustainably enforce or defend claims determines the economic outcome. Claim management is a demanding challenge, particularly in turnkey construction projects with functional service descriptions and various flat-rate contracts.

From the client's point of view, especially for institutional and commercial builders, construction projects constitute investment properties. Rapid project implementation and adherence to the specified budget and deadline are usually crucial for investor profitability. In two out of three construction projects, however, the project goals are missed: completion deadlines are exceeded, budgets are not adhered to. The consequences are often immense: financing bottlenecks, reduced or even negative returns, personal liability of those responsible, threatened company livelihoods, and lengthy legal disputes.

The causes of a project slipping away can be varied but are often traced back to a few typical risk factors. Once a project has slipped, it is important to identify options for action and possible solutions as soon as possible and to prepare them for the decision-making levels.

In difficult project situations, targeted communication and negotiation skills are of paramount importance. These management skills are learned using typical practical examples.

Links between the module and other courses and modules

The knowledge and skills imparted in this module are of particular importance for the construction and real estate industry, as they have a direct impact on the economic success of the project and corporate gain. As a result, there are links to Modules II "Real Estate Project Development" and V "Contracts in the Construction and Real Estate Industry".

Studiability for other degree programmes:

The courses of the module deal with the essential factors for economic success in the realization of building projects from the perspective of the client as well as from the perspective of the contractor. The content of the courses is relevant for everyone involved in construction projects. The module can, therefore, also be used for other courses in the fields of architecture, civil engineering, project management, and real estate management.

MBW-BI - Business Administration (Construction and Real Estate)

Course:	Claim Management	Course-Code:
		MBW-BI-12.1

Responsible for Module	Prof. Dr. Hornuff

Study Phase:	-	**Hours per Week:**	2 SWS
Semester:	3	**Workload:**	60 Hrs.
Module Duration	Required Course	**Credit Points:**	2 LP
Cycle:	Each Semester	**Examination Performance:**	Study Paper(s) / with Successs Factors of Project Management
Language of Instruction:	German		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
30 Hrs.	0 Hrs.	30 Hrs.	Study Paper(s)

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

Basic knowledge of the topics of costing and construction prices, service descriptions, construction contract law, project management according to German Construction Contract Procedures ("VOB"), and project management are recommended. Participants with incomplete previous knowledge receive individual support.

Qualification objectives:

The course participants learn the basics of claim management as an interdisciplinary team task (construction management, legal) as well as the associated strategies. From the point of view of an executing construction company, competencies are acquired to formulate and process claims appropriately or to defend them. The verification of claims in terms of the reason and amount is an important task of the client, but also the general contractor vis-à-vis their subcontractors. Skills and knowledge are also imparted for this point of view. Typical tasks in the area of claim management are practically learned in the context of group work and role-plays. Construction disruptions regularly lead to construction time claims and other delay-related claims of a considerable magnitude. The participants learn the basics of evaluating disrupted construction processes in terms of time and monetary requirements. The challenge in the judicial enforcement of such claims, as well as the possibilities of out-of-court dispute resolution (construction mediation, adjudication, arbitration), are presented in a practice-oriented manner. In particular, the extrajudicial negotiation of claims accompanying the project is of outstanding importance for the construction contract partners. This negotiation competence is learned and applied based on the "Harvard negotiation method" in the context of typical role play.

Course contents:

- Professional claim management and anti-claim management: strategies, organization and operational implementation from the perspective of the client and the contractor
- Construction disruptions and construction time claims
- Negotiation of claims during the project
- Methods of extraordinary conflict management (Alternative dispute resolution)

Teaching and study methods:	Lecture, practical examples, exercises, group work
Course material:	Lecture notes online in ILIAS, handouts
Recommended study literature:	Kapellmann, K.D. / Schiffers, K.H.: *Vergütung, Nachträge und Behinderungsfolgen beim Bauvertrag*, Volume 1, Pauschalvertrag, 6th edition, Werner publisher, 2011
	Kapellmann, K.D. / Schiffers, K.H.: *Vergütung, Nachträge und Behinderungsfolgen beim Bauvertrag*, Volume 2, Pauschalvertrag, 5th edition, Werner publisher, 2011
	Wanninger, R.: *Kosten- und Preisermittlung in Konfliktsituationen*, Institut für Bauwirtschaft und Baubetrieb der Technischen Universität Braunschweig, book 38, 2010
	Cushman, R.F. / Carter, J.D. / Gorman, P.J.: *Proving and Pricing Construction Claims. Cumulative Supplement*, 3rd edition, publishing house Harcourt Professional Publishing, 2010

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MBW-BI - Business Administration (Construction and Real Estate)

Course:	Success Factors of Project Management	Course-Code:
		MBW-BI-12.2

Responsible for Module	Prof. Dr. Hornuff

Study Phase:	-	**Hours per Week:**	2 SWS
Semester:	3	**Workload:**	90 Hrs.
Module Duration	Required Course	**Credit Points:**	3 LP
Cycle:	Each Semester	**Examination Performance:**	Study Paper(s) / with Claim Management
Language of Instruction:	German		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
30 Hrs.	0 Hrs.	60 Hrs.	Study Paper(s)

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

Basic knowledge of the topics of calculation of construction prices, service descriptions, construction contract law, project management according to German Construction Contract Procedures ("VOB"), and project management are recommended. Participants with incomplete previous knowledge receive individual support.

Qualification objectives:

During the course, the decisive prerequisites and interfaces for successful project implementation are presented in detail. Project crises are regularly caused by the same error pattern. Project success is not a coincidence. A major reason for project crises is usually the inadequate coordination of the interfaces between planning and construction. In particular, delayed planning of the technical building equipment that is not sufficiently integrated into the planning and construction processes is a significant risk factor for the project budget and deadlines. Once projects have slipped, it is important to identify options for action and possible solutions as soon as possible and to prepare them for the decision-making levels. Knowing the "sticking points" for project success, the participants are enabled to derive preventive measures and integrate early warning indicators into strategic and operational project management. Tried and tested risk management approaches and new, established forms of cooperation between client and contractor (partnering models) are presented and discussed. In difficult project situations, targeted communication and negotiation skills are of paramount importance. These management skills are learned and applied in typical role play.

Course contents:

- Crisis management in construction projects: Recognize slipping projects and act
- Shell construction interface challenge- planning (risk drivers, building technology)
- Leadership and communication: key qualifications for project success
- Risk management in construction projects
- Innovative cooperation models (partnering, GMP contracts)
- Construction inspection

Teaching and study methods:	Seminar-style lecture, group work
Course material:	Lecture notes online in ILIAS, handouts
Recommended study literature:	Kapellmann, K.D.: *Schlüsselfertiges Bauen*, 3rd edition, Werner publisher, 2013
	Wanninger, R.: *Entgleitende Projekte - Erkennen und Handeln*, book 49, Institut für Bauwirtschaft und Baubetriebe der Technischen Universität Braunschweig, 2010
	Deutscher Beton- und Bautechnikverein e.V. (Ed): *Schnittstellen Rohbau / Technische Gebäudeausrüstung*, leaflet, 2006
	Girmscheid, G. / Busch, T.A.: *Projektrisikomanagement in der Bauwirtschaft*, 2nd edition, Bauwerk Beuth publisher, 2013

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MBW-BI - Business Administration (Construction and Real Estate)

Thesis

Module-No.:	**Courses:**	**Master Thesis**
MBWL-BI-TH		

Responsible for Module	Each supervising Professor

Study Phase:	-	**Hours per Week:**	-
Semester:	3	**Workload:**	510 Hrs.
Module Duration	1 Semester	**Credit Points:**	17 LP
Status:	Required Module	**Examination Performance:**	Thesis
Cycle:	Each Semester	**Weighting for overall grade**	17 x

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
-	-	510 Hrs.	Thesis

Hrs.-Information in industries minutes; no time minutes

Short description of module:

- Crisis management in construction projects: Recognize slipping projects and act
- Shell construction interface challenge- planning (risk drivers, building technology)
- Leadership and communication: key qualifications for project success
- Risk management in construction projects
- Innovative cooperation models (partnering, GMP contracts)
- Construction inspection

Studiability for other degree programmes:

The module is designed as a thesis in the course and can only be connected in special cases.

Recommended study literature:	Diesterer, G.: *Studienarbeiten schreiben*, 6th edition, Springer publisher, 2011
	Theisen, M.R.: *Wissenschaftliches Arbeiten: Technik – Methodik – Form*, 17th edition, Franz Vahlen publisher, 2017
	Course Business Administration (Construction and Real Estate) (Ed.): *Leitfaden Wissenschaftliches Arbeiten*, guideline, latest version

MBW-EW - Business Administration (Energy Management)

Business Administration (Energy Management)

Module I – International Energy Policy

Module-No.:	**Courses:**	International Energy Policy Analysis
MBW-EW-01		Environmental and Resource Economics

Responsible for Module	Prof. Dr. Ulreich

Study Phase:	-	**Hours per Week:**	4 SWS
Semester:	1	**Workload:**	150 Hrs.
Module Duration	1 Semester	**Credit Points:**	5 LP
Status:	Required Module	**Examination Performance:**	Written Exam
Cycle:	Each Semester	**Weighting for overall grade**	5 x

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
60 Hrs.	0 Hrs.	88 Hrs.	2,0 Hrs. / 120 Min.

Hrs.-Information in industries minutes; no time minutes

Short description of module:

The module deals with aspects, largely derived from economics theory and findings on resource and environmental economics and combines these with political approaches to implement the preferred measure derived from the theoretical considerations. The students should understand the international interdependence of resource use as well as recognize related cross-border environmental impacts. International energy policy emphasizes that the overcoming of resource shortages and environmental problems in an increasingly globalized world can only be meaningfully and efficiently achieved through international agreements and cooperation, and presents comparative theoretical, methodological, and tried-and-tested approaches.

The students should be able to assess theory and methods and evaluate the effects of alternative approaches. There is an awareness that an internationally coordinated resource, environmental, and energy policy enables a greater benefit for all those involved and affected than if everyone tries to maximize their individual benefit.

Links between the module and other courses and modules

The module is particularly related to Module II “Energy Markets and Energy Products”, Module III “European and National Energy Law”, and Module V “International Energy Projects and Contract Design”.

Studiability for other degree programmes:

The module is basically suitable for business administration as well as energy and environmental engineering courses.

MBW-EW - Business Administration (Energy Management)

Course:	International Energy Policy Analysis	Course-Code:
		MBW-EW-01.1

Responsible for Module	Prof. Dr. Ulreich

Study Phase:	-	**Hours per Week:**	2 SWS
Semester:	1	**Workload:**	90 Hrs.
Module Duration	Required Course	**Credit Points:**	3 LP
Cycle:	Each Semester	**Examination Performance:**	Written Exam, 60 Min. / with Environmental and Resource Economics, together 120 Min.
Language of Instruction:	German		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
30 Hrs.	0 Hrs.	59 Hrs.	1,0 Hrs. / 60 Min.

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

-

Qualification objectives:

The students know the theories of market and state failure as well as evaluation criteria to evaluate alternative strategies and instruments to avoid market failure. They will be able to recognize forms of market and state failure in the energy industry and to critically evaluate political strategies for reducing market failure. The students have an overview of the areas of state energy policy and in-depth knowledge in selected areas (regulatory and process-political approaches to energy policy).

Course contents:

- Overview of energy policy goals and German and European energy policy measures
- Presentation of economic justifications for economic policy interventions (theory of market failure, theory of state failure)
- Energy policy as regulatory and process policy as well as industrial and technology policy
- Market imperfections and state design of the regulatory framework of the line-bound energy industry
- Evaluation of alternative energy policy strategies in the areas of security of supply and rational use of energy
- International coordination of energy policy within the EU and the international energy agency.

Teaching and study methods:	Lecture with current case examples, exercises
Course material:	Script, worksheets distributed (some in English)
Recommended study literature:	Illing, F.: *Energiepolitik in Deutschland*, 2. Auflage, Nomos Verlag, 2016
	Fischer, S.: *Die Energiewende und Europa; Europäisierungsprozesse in der deutschen Energie- und Klimapolitik*, Springer Verlag, 2016
	Van de Graaf, T. / Sovacool, B. / Ghosh, A. / Kern, F. / Klare, M.: *The Palgrave Handbook of the International Political Economy of Energy*, publishing house Springer Palgrave Macmillan, 2016
	Brown, S.P.A. / Jefferson, M.: *Energy Policy*, The International Journal of the Political, Economic, Planning, Environmental and Social Aspects of Energy

MBW-EW - Business Administration (Energy Management)

Course:	Environmental and Resource Economics	Course-Code:
		MBW-EW-01.2

Responsible for Module	Prof. Dr. Ulreich

Study Phase:	-	**Hours per Week:**	2 SWS
Semester:	1	**Workload:**	60 Hrs.
Module Duration	Required Course	**Credit Points:**	2 LP
Cycle:	Each Semester	**Examination Performance:**	Written Exam, 60 Min. / with International Energy Policy Analysis, together 120 Min.
Language of Instruction:	German		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
30 Hrs.	0 Hrs.	29 Hrs.	1,0 Hrs. / 60 Min.

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

Very good basic knowledge of microeconomics as well as general previous mathematical and economic knowledge.

Qualification objectives:

After completing the course, the students should have developed a deeper understanding of the relationships between the economy and the environment, recognize possible market failure, assess corrective environmental policy interventions and competently discuss partial analytical models for the analysis of environmental and resource economic issues and be able to formulate policy recommendations.

Course contents:

Environmental economics:
- Environmental economic models, the definition of external effects, sustainability criteria, operating principles of environmental policy)
- Consideration of the external effects in a general equilibrium model (determination of the Pareto optimum and comparison to the market equilibrium, Pigou tax)
- Internationalization of external effects in a partial market model with the help of Pigou tax, Coase negotiation solution, and liability approaches
- Consideration of standard-oriented instruments of environmental policy (requirements, levies, certificates) and comparison of instruments with regard to their ecological effectiveness, as well as economically static and dynamic efficiency
- Description of the peculiarities of international environmental problems (e.g. greenhouse gas emissions), derivation of the non-cooperative and cooperative equilibrium

Resource economics:
- Introduction to resource economics (classification of natural resources)
- Determination of the mining path of a non-renewable resource in market equilibrium and the Pareto optimum (influencing factors: discount rate, technical progress, inventory-dependent mining costs, backstop technology, expropriation risks, common pool problems, market power)
- Determination of the harvest path of a renewable resource in market equilibrium and the Pareto optimum (sustainable harvest path, bio-economic equilibrium, common pool problem

Teaching and study methods:	Lecture with integrated calculation examples and specialist discussions on current environmental policy events
Course material:	Script online in ILIAS
Recommended study literature:	Enders, A. / Querner, I.: *Die Ökonomie natürlicher Ressourcen*, 2. Auflage, Kohlhammer Verlag, 2000
	Endres, A.: *Umweltökonomie*, 4. Auflage, Kohlhammer Verlag, 2013
	Feess, E. / Seeliger, A.: *Umweltökonomie und Umweltpolitik*, 4. Auflage, Vahlen Verlag, 2013
	Perman, R. / Ma, Y. / Common, M. / Maddison, D. McGilvray, J.: *Natural Resource and Environmental Economics*, 4. Auflage, Pearson Education Limited Verlag, 2011
	Tietenberg, T. / Lewis, L.: *Environmental and Natural Resource Economics*, 10. Auflage, Routledge Verlag, 2016
	Wiesmeth, H: *Environmental Economics*, Springer Verlag, 2012

MBW-EW - Business Administration (Energy Management)

Module II – Energy Markets and Energy Products

Module-No.:	**Courses:**	Global Commodity Markets and Structured Energy Derivatives
MBW-EW-02		Short-term and Flexibility Markets for Electicity and Gas

Responsible for Module	Prof. Dr. Schaber

Study Phase:	-	**Hours per Week:**	4 SWS
Semester:	1	**Workload:**	150 Hrs.
Module Duration	1 Semester	**Credit Points:**	5 LP
Status:	Required Module	**Examination Performance:**	Written Exam
Cycle:	Each Semester	**Weighting for overall grade**	5 x

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
60 Hrs.	0 Hrs.	88 Hrs.	2,0 Hrs. / 120 Min.

Hrs.-Information in industries minutes; no time minutes

Short description of module:

The module covers energy markets and energy products. Part 1 looks at the big picture of global energy commodities markets. Options and futures markets and other derivatives are examined in the light of identifying and pricing suitable instruments for specific hedging applications or flexibility needs. Part 2 focuses on the micro-view: the short-term markets on the time-scale relevant to system operations, system security, and ancillary services. Also investigated in this context are optimal strategies for the commercialization of volatile renewable energy production in the traded pool markets with the implication of managing the nomination risk by means of statistical methods and production forecasts. On the gas side spot trading hubs, balancing mechanisms, and the valuation of gas flex are reviewed.

Links between the module and other courses and modules

Derivatives are methods for managing risks. Many new business ideas in the energy space rely on active participation in the traded energy markets (e.g. virtual power plants). Moreover, large energy investment projects often require the hedging of the future project cash flows in the derivatives markets in order to secure the debt service. The following links to other modules of the Master's Degree in Business Administration with the major fields of study (major fields Energy Management / MBWL-EW) can hence be identified: Module X "Financing", Module XII "Business Model Development for the Energy Industry", Module VI "Risk and Asset Management".

Studiability for other degree programmes:

The module is suitable for study for students with undergraduate degrees in economics, mathematics, sciences, or engineering. Good knowledge of energy-related topics is nevertheless expected.

MBW-EW - Business Administration (Energy Management)

Course:	Global Commodity Markets and Structured Energy Derivatives	Course-Code:
		MBW-EW-02.1

Responsible for Module	Prof. Dr. Schaber

Study Phase:	-	**Hours per Week:**	2 SWS
Semester:	1	**Workload:**	60 Hrs.
Module Duration	Required Course	**Credit Points:**	2 LP
Cycle:	Each Semester	**Examination Performance:**	Written Exam, 60 Min. / with Short Term an dFlexibility Markets for Electrivity and Gas, together 120 Min.
Language of Instruction:	English		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
30 Hrs.	0 Hrs.	29 Hrs.	1,0 Hrs. / 60 Min.

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

Undergraduate level: financial mathematics, probability and statistics, energy economics, fundamentals of energy commercialization

Qualification objectives:

Participants acquire a detailed understanding of how energy and commodities futures and options markets work. Students can select appropriate hedging tools for transferring risks, controlling costs, and protecting profit margins for companies that are either producers or consumers of energy commodities. Moreover, they can implement various strategies to manage commodity prices and spread risks utilizing derivative products. Students also understand the pricing dynamics of energy terms and the underlying energy cash markets. They are hence able to assess developments and price movements in the international markets as well as the potential impact on the national energy sector.

Course contents:

- Fundamentals of commodity spot and futures markets
- Mechanics of futures markets
- Equilibrium relationships of spot and futures prices
  - Pricing in the commodity futures market
  - Term structure and forward curve
  - Theory of storage, inventory, and convenience yield
  - Price volatility and seasonality
- Stochastic models for energy prices
  - Models of the spot price (mean reversion & jumps)
  - Forward curve models
- Energy options
- Practical hedging with energy derivatives
  - Structuring energy swaps and options
  - Hedging spreads

Teaching and study methods:	Lecture
Course material:	Script online in Iliad, if necessary additional handouts
Recommended study literature:	Hull, J.: *Options, Futures, and Other Derivatives*, 9th Edition, publishing house Pearson, 2014
	Geman, H.: *Commodities and Commodity Derivatives*, 2nd Edition, publishing house Wiley, 2012
	Kaminski, V.: *Energy Markets*, publishing house Risk Books, 2013
	Swindle, G., *Valuation and Risk Management in Energy Markets*, publishing house Cambridge University Press, 2015
	Roncoroni, A. / Fusai, G. / Cummins, M.: *Handbook of Multi-Commodity Markets and Products*, publishing house John Wiley & Sons, 2015
	Benth, F.E. / Kholodryi, V.A. / Laurence, P.: *Quantitative Energy Finance. Modeling, Pricing, and Hedging in Energy and Commodity Markets*, publishing house Springer, 2013

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MBW-EW - Business Administration (Energy Management)

Course:	Short-term and Flexibility Markets for Electricity and Gas	Course-Code: MBW-EW-02.2

Responsible for Module	Prof. Dr. Schaber

Study Phase:	-	**Hours per Week:**	2 SWS
Semester:	1	**Workload:**	90 Hrs.
Module Duration	Required Course	**Credit Points:**	3 LP
Cycle:	Each Semester	**Examination Performance:**	Written Exam, 60 Min. / with Global Commodity Markets and Structured Energy Derivatives, together 120 Min.
Language of Instruction:	English		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
30 Hrs.	0 Hrs.	59 Hrs.	1,0 Hrs. / 60 Min.

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

Undergraduate level: financial mathematics, probability and statistics, energy economics, fundamentals of energy commercialization.

Qualification objectives:

Participants acquire a detailed understanding of the markets for power and gas relevant to the time scale of short-term system operations and appreciate the role and value of flexibility. The course also covers strategies for participating in the short-term markets with volatile renewable energy production. Bidding behavior and the optimal use of production forecasts to minimize deviations from the nominated program are discussed in detail as well as flex and balancing on the gas side.

Course contents:

- Role of flexibility in short-term market operations (“day-ahead” to real time)
- Day-ahead and intraday markets
- Balancing market
  - System security & ancillary services market
  - Participation in the balancing market
- Strategic bidding
- Market participation strategies for renewable energy producers
- Renewable energy production forecasts
  - Point and quantile forecasts
  - Quality criteria for forecasts
  - Simple forecast models based on times series techniques
- Demand-side management
- Gas balancing and flex
- Flexibility premiums for swing-contracts
- Weather derivatives and volume swaps

Teaching and study methods:	Lecture
Course material:	Script online in Iliad, if necessary additional handouts
Recommended study literature:	Harris, C.: *Electricity markets, Wiley Finance*, 2. Auflage, Wiley Verlag, 2008
	Jahangir, H. / Apel, M.: *Renewable Energy Integration. Challenges and Solutions (Green Energy and Technology)*, publishing house Springer, 2016
	Borggrefe, F. / Neuoff, K.: *Balancing and Intraday Market Design. Options for Wind Integration*, Discussion Paper, publishing house Deutsches Institut für Wirtschaftsforschung e.V. (DIW Berlin) (Ed), 2011
	Stoft, S.: *Power System Economics*, publishing house John Wiley & Sons, 2002
	Weron, R.: *Modelling electricity loads and prices*, publishing house John Wiley & Sons, 2006
	NetConnect Germany Management GmbH (Hrsg): *Externe Regelenergie. Einsatz externer Regelenergie im Marktgebiert NetConnect Germany*, 2016

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MBW-EW - Business Administration (Energy Management)

Module III – European and National Energy Law

Module-No.: MBW-EW-03	**Courses:** Case Studies on Energy Law

Responsible for Module	Prof. Dr. Dannecker

Study Phase:	-	**Hours per Week:**	4 SWS
Semester:	1	**Workload:**	150 Hrs.
Module Duration	1 Semester	**Credit Points:**	5 LP
Status:	Required Module	**Examination Performance:**	Study Paper(s)
Cycle:	Each Semester	**Weighting for overall grade**	5 x

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
60 Hrs.	0 Hrs.	90 Hrs.	Study Paper(s)

Hrs.-Information in industries minutes; no time minutes

Short description of module:

The current legal framework, as well as planned innovations for energy suppliers, network operators and (energy-intensive) consumers, are discussed using case studies.

Links between the module and other courses and modules

Because of the central role of the legal framework for the development and functioning of the energy industry, there are links to all specialization modules and events of the Master's Degree in Business Administration with a focus on (Energy Management) / MBWL-EW.

Studiability for other degree programmes:

In principle, this module can be studied by graduates of courses that include an introduction to the fundamentals of law, e.g. in the context of a civil law or business lecture with a scope of 4 SWS. A good understanding of the energy industry and background knowledge of the energy industry are required.

MBW-EW - Business Administration (Energy Management)

Course:	Case Studies on Energy Law	Course-Code:
		MBW-EW-03.1

Responsible for Module	Prof. Dr. Dannecker

Study Phase:	-	**Hours per Week:**	4 SWS
Semester:	1	**Workload:**	150 Hrs.
Module Duration	Required Course	**Credit Points:**	5 LP
Cycle:	Each Semester	**Examination Performance:**	Study Paper(s)
Language of Instruction:	German		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
60 Hrs.	0 Hrs.	90 Hrs.	Study Paper(s)

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

Bachelor level: Energy industry, legal framework, and regulation of the energy industry, basics of civil law

Qualification objectives:

The participants should understand simple cases and court decisions in the field of energy law and understand the background and effects of new legal norms and amendments to existing energy law.

Course contents:

- Case processing basics
- Case examples from the core areas of national energy law
  - Energy contract law
  - Energy law
  - Energy environmental law
  - Energy trading law
- Discussion of new legislative proposals relevant to the energy market or amendments to existing energy legislation at the national and EU level

Teaching and study methods:	Lecture
Course material:	Script online in ILIAS, if necessary, additional handouts
Recommended study literature:	Verschiedene Autoren (Hrsg): *Energierecht (EnergieR)*, Gesetzestext, 13. Auflage, Beck Verlag, 2016
	Mitto, L.: *Energierecht*, Kohlhammer Verlag, 2013
	Klees, A.: *Einführung in das Energiewirtschaftsrecht*, Verlag Fachmedien Recht und Wirtschaft, 2012
	Aktuelle Zeitschriftenartikel, Gerichtsurteile, Referentenentwürfe zu geplanten oder zu novellierenden Rechtsnormen

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MBW-EW - Business Administration (Energy Management)

Module IV – Corporate Governance

Module-No.:	**Courses:**	Organisational Behaviour and Leadership *
MBW-EW-04		Strategic Management *

Responsible for Module	Prof. Dr. Weilepp

Study Phase:	-	**Hours per Week:**	6 SWS
Semester:	1	**Workload:**	180 Hrs.
Module Duration	1 Semester	**Credit Points:**	6 LP
Status:	Required Module	**Examination Performance:**	Study Paper(s) | Written Exam
Cycle:	Each Semester	**Weighting for overall grade**	6 x

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
90 Hrs.	0 Hrs.	90 Hrs. | 88,5	Study Paper(s) | 1,5 Hrs. / 90 Min.

Hrs.-Information in industries minutes; no time minutes

Short description of module:

The module combines two management-specific courses. The central aim of the courses is to provide students with practically applicable knowledge about the basic theories, concepts, systematizations, methods, and instruments of corporate management. This is done by means of an analysis of selected management approaches, concepts, and instruments, and their respective practical applications, embedded in the history of dogma. The students are enabled to recognize management problems and to work on them with the help of the presented theory, concepts, and instruments.

The “Strategic Management” course is about being able to

- recognize and understand reasons for the success or failure of companies,
- develop and assess strategic options for companies with only incomplete information,
- select and implement the strategy that corresponds to the competitive situation.

The “Organizational Behavior and Leadership” course deals with questions of how actors behave in companies – individually or in groups – and how companies and their structures and processes function accordingly. Approaches are discussed as to how the behavior of employees can be influenced in such a way that it corresponds to the requirements of the individual as well as the company. The dimensions of “leadership” are debated by discussing leadership as a building block for generating success in companies. Leadership behavior, the role of the person being led, and the respective leadership situation are dealt with. Then there are the issues of power and influence.

Links between the module and other courses and modules

Due to its cross-sectional function, the “Business Management” module forms the basis for the business administration course that is based on it. It provides the necessary management knowledge for Module IX “Interdisciplinary project work” which enables the classification of the company or research-specific tasks.
Finally, the module provides indispensable knowledge for the preparation of the master’s thesis.

Studiability for other degree programmes:

The module conveys competencies in management and corporate governance and can, therefore, be recommended for all master’s courses that are designed to develop executives. It is suitable for all business administration courses.

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MBW-EW - Business Administration (Energy Management)

Course:	Organisational Behaviour and Leadership *	Course-Code:
		MBW-EW-04.1

Responsible for Module	Prof. Dr. Weilepp

Study Phase:	-	**Hours per Week:**	2 SWS
Semester:	1	**Workload:**	60 Hrs.
Module Duration	Required Course	**Credit Points:**	2 LP
Cycle:	Each Semester	**Examination Performance:**	Study Paper(s)
Language of Instruction:	English		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
30 Hrs.	0 Hrs.	30 Hrs.	Study Paper(s)

Hrs.-Information in industries minutes; no time minutes

Prerequisites

No formal prerequisites, but basic knowledge of both undergraduate courses “Organization and Management“ as well as “Human Resources“ (Module XX / Bachelor’s Degree in Business Administration (Construction and Real Estate)).

Qualification objectives:

Upon successful completion of this module, students will be able to:

- Examine different approaches to management and leadership and theories of organization
- Explore the role of the leader and influence in organizational structure, culture, and employee motivation
- Demonstrate an understanding of working with and leading others, teamwork, groups, and group dynamics
- Demonstrate the ability to analyze and apply leadership and management models to contemporary business situations
- Evaluated and applied relevant leadership strategies to develop the effectiveness of teamwork

Course contents:

The module will give the students an introduction to the areas of leadership and management. Within the working environment, leaders and managers require an understanding that all employees are affected by both internal and external influences. The study of leadership and management will give students an introduction to the following areas:

- Leadership
- Leadership and management
- The function of management
- Approaches to leadership and management
- Power and authority
- Individual behavior at work
- Personality
- Perception
- Leading teams and groups
- Leadership and motivation
- Organizational culture
- Organizational structure
- Leadership in managing conflict
- Leadership in managing change

Teaching and study methods:	Lectures, workshop sessions, individual and group exercises, case studies, set reading, discussion and debate
Course material:	Slides will be electronically in ILIAS
Recommended study literature:	Blanchard, K.: *The Heart of a Leader. Insights on the Art of Influence*, publishing house David C Cook Publishing Company, 2007
	Bloisi, W.: *Management and Organization Behaviour*, 2nd Edition, publishing house McGraw-Hill Companies, 2009
	Mullins, L.J.: *Management and Organisational Behaviour*, 9th Edition, publishing house Financial Times Prent.Int, 2010
	Neuberger, O.: *Führen und führen lassen*, 6. Auflage, Lucius & Lucius Verlag, 2011

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MBW-EW - Business Administration (Energy Management)

Course:	Strategic Management *	Course-Code:
		MBW-EW-04.2

Responsible for Module	Prof. Dr. Weilepp

Study Phase:	-	**Hours per Week:**	4 SWS
Semester:	1	**Workload:**	120 Hrs.
Module Duration	Required Course	**Credit Points:**	4 LP
Cycle:	Each Semester	**Examination Performance:**	Written Exam, 90 Min.
Language of Instruction:	German		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
60 Hrs.	0 Hrs.	58,5 Hrs.	1,5 Hrs. / 90 Min.

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

No formal requirements. In terms of content, the course builds on Module XX “Organization and Human Resource Management” – in particular on the “Organization and Management” course – of the Bachelor’s Degree in Business Administration (Construction and Real Estate) or on comparable courses from other business administration degree courses.

Qualification objectives:

In this course, the students should get a comprehensive insight into the most important theoretical approaches of strategic management and be able to apply them in practice. This includes knowledge of the theory of strategic management as well as knowledge and skills in handling the instruments of strategic corporate management. Both competitive theoretical approaches (Competitive Strategy, Porter) and anti-competitive theoretical approaches (Blue Ocean Strategy, Kim and Mauborgne) are discussed.

This is supported didactically by working out practical case studies in teams and self-study. In addition, the topic “Blue Ocean Strategy” is learned with the help of the computer-based business game “Blue Ocean Strategy Simulation” from Stratx Simulations using a B2C case. With these practice-oriented and team-based teaching methods, the students obtain methodical, social, and personal skills such as presentation skills, problem-solving skills, communication and collaboration skills, team organization, and self-reflection, in addition to consolidating their knowledge. The students should also become acquainted with the possibilities and limits of information transfer described in the behavioral science approaches and be able to differentiate the behavioral science-inspired approaches of management from traditional approaches.

Course contents:

- The strategic management process
- The concept of corporate strategy
- Corporate and business area strategy
- Environmental and resource analysis
- Competitive strategies, competitive advantage, cost and differentiation advantages
- Essential elements of the blue ocean strategies

Teaching and study methods:	Lecture, case study work, simulation game
Course material:	Script and templates; Manual for the Blue Ocean Strategy Simulation Business Game
Recommended study literature:	Welge, M.K. / Al-Laham, A.: *Strategisches Management. Grundlagen – Prozess – Implementierung*, 7. Auflage, Gabler Springer Verlag, 2017
	Büchler, J.-P. et al.: *Fallstudienkompendium Hidden Champions.* Springer Gabler, 2018
	W.C. Kim and R. Mauborgne, *Blue Ocean Strategy*, Harvard Business Review Press, 2015
	Cyert, R.M. / March, J.G.*: A Behavioral Theory of the Firm.* MARTINO, 2013

MBW-EW - Business Administration (Energy Management)

Module V – International Energy Projects and Contracting

Module-No.:	Courses:	Management of International Energy Projects
MBW-EW-05		Claim Management in Energy Projects

Responsible for Module	Prof. Dr. Rath

Study Phase:	-	**Hours per Week:**	4 SWS
Semester:	1 and 2	**Workload:**	150 Hrs.
Module Duration	2 Semesters	**Credit Points:**	5 LP
Status:	Required Module	**Examination Performance:**	Written Exam
Cycle:	Each Semester	**Weighting for overall grade**	5 x

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
60 Hrs.	4 Hrs.	88 Hrs.	2,0 Hrs. / 120 Min.

Hrs.-Information in industries minutes; no time minutes

Short description of module:

International energy projects are highly complex projects with delivery times of several years and with parties from various nations involved. Moreover, such projects are usually won following a highly competitive tendering process. Hence, profit margins are limited while project risks are significant. Variations to the originally planned project scope are normal and often lead to a dispute between contract parties and hence claim requests. Consequently, rigorous project management combined with effective claim management is paramount for a successful and profitable project. The latter applies to customers (utilities, etc.) or equipment manufacturers as well.
This module provides a solid introduction to project management techniques, challenges and mitigation approaches. Moreover, it provides in-depth insights into solid claim management, which may well be the final reason for a profitable project.

Links between the module and other courses and modules

The topics covered in this module either belong to the wider field of “Management Techniques”, “Organizational Behavior” and “Law”. Hence, strong links exist to Module IV “Business Management”, Module VIII “Management Skills” and Module III “European and National Energy Law”.

Studiability for other degree programmes:

The subject itself does not require too many prerequisites and hence can be chosen by all students interested in organizational and cultural aspects of large multinational (energy) projects. Student groups who might be interested might be studying civil engineering, energy engineering, or project management.

MBW-EW - Business Administration (Energy Management)

Course:	Management of International Energy Projects	Course-Code:
		MBW-EW-05.1

Responsible for Module	Prof. Dr. Rath

Study Phase:	-	**Hours per Week:**	2 SWS
Semester:	1	**Workload:**	90 Hrs.
Module Duration	Required Course	**Credit Points:**	3 LP
Cycle:	Each Semester	**Examination Performance:**	Written Exam, 60 Min. / with Claim Management in Energy Projects; together 120 Min.
Language of Instruction:	English		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
29,5 Hrs.	0,5 Hrs.	59 Hrs.	1,0 Hrs. / 60 Min.

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

Basic knowledge of the fundamentals of the energy industry (e.g. Module XI “Fundamentals of the Energy Industry” – Bachelor’s Degree in Energy Management, Biberach University of Applied Sciences), market participants in the energy industry (e.g. Module XIII “Market Participants in the Energy Industry” – Bachelor’s Degree in Energy Management, Biberach University of Applied Sciences), of project management (e.g. Module XV “Project Development and Management” – Bachelor’s Degree in Energy Management, Biberach University of Applied Sciences) and business administration (e.g. Module IV “Business Administration” – Bachelor’s Degree in Energy Management, Biberach University of Applied Sciences).

Qualification objectives:

Students become familiar with the global requirements of the energy market and with national and cultural differences of the key players or stakeholders in this environment via lectures and team exercises for project teams. They acquire and learn to apply extended knowledge of the methods and instruments, by adding special methods to the basic principles of conventional project management, to understand the process-based mechanisms as well as personal and team-related attitudes for the successful management of international energy projects.
The students are made aware of the growing importance of ’soft’ factors in project management and learn that leadership and commitment-based communication represent important elements for projects with international team set-up. Another focus is learning about technology and process-based management standards to simplify complex conditions to avoid or minimize disturbances and their impact during the execution of the projects and to manage the projects smoothly.
Project-specific standards or methodological approaches comprise the multi-purpose structuring of the project, effective progress monitoring, and decision-making processes, as well as tools to minimize risk, cost overruns, and quality deficiencies.
Digestion of the content shall be facilitated by resolving typical business problem cases of projects and conflict situations in team-based role-plays with the application of relevant methods for international project management.

Course contents:

- Fundamentals of the global energy market
- Cultural differences, corporate culture, and soft issues for the management of projects
- Special methods for the management of international energy projects
- Processing of international energy projects through the various project phases
- Interactive project status between the project team and management with strategies for risk reduction

Teaching and study methods:	Lecture, practical examples, exercises, group work
Course material:	Script online in ILIAS, if necessary, additional handouts
Recommended study literature:	Köster, K.: *International Project Management*, publishing house Sage Publications, 2009
	Lientz, B. / Rea, K.: *International Project Management*; publishing house Routledge Chap-Man Hall, 2015
	Hilpert, N. / Rademacher, G. / Sauter, B.: *Projekt-Management und Projekt-Controlling im Anlagen- und Systemgeschäft*, VDMA Verlag, 2001

MBW-EW - Business Administration (Energy Management)

Course:	Claim Management in Energy Projects	Course-Code:
		MBW-EW-05.2

Responsible for Module	Prof. Dr. Rath

Study Phase:	-	**Hours per Week:**	2 SWS
Semester:	2	**Workload:**	60 Hrs.
Module Duration	Required Course	**Credit Points:**	2 LP
Cycle:	Each Semester	**Examination Performance:**	Written Exam, 60 Min. / with Management on Inernational Energy Projects; together 120 Min.
Language of Instruction:	English		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
30 Hrs.	0 Hrs.	29 Hrs.	1,0 Hrs. / 60 Min.

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

"Management of International Energy Projects" (Module V), basic knowledge of the fundamentals of the energy industry (e.g. Module XI "Fundamentals of the Energy Industry" – Bachelor's Degree in Energy Management, Biberach University of Applied Sciences), market participants in the energy industry (e.g. Module XIII "Market Participants in the Energy Industry" – Bachelor's Degree in Energy Management, Biberach University of Applied Sciences), of project management (e.g. Module XV "Project Development and Management" – Bachelor's Degree in Energy Management, Biberach University of Applied Sciences) and business administration (e.g. Module IV "Business Administration" – Bachelor's Degree in Energy Management, Biberach University of Applied Sciences).

Qualification objectives:

Students are familiarized via lectures and project team exercises with the contract-specific requirements of international energy projects where contracts link the involved and committed parties and stakeholders in this environment.
These projects are highly complex projects with delivery times of several years and with parties from various nations involved. Moreover, such projects are usually won following a highly competitive tendering process. Hence, profit margins are limited while project risks are significant. Variations to the originally planned project scope are normal and often lead to a dispute between contract parties and hence claim requests. Consequently, rigorous project management combined with effective claim management is paramount for a successful and profitable project. The latter applies to customers (utilities, etc.) or equipment manufacturers as well.
These standards and contract or project-specific methodological approaches comprise the contractual structuring of the project, the basics to develop, review and execute a contract-specific claim strategy, and means for effective risk monitoring in general. Concrete means like the analysis of the critical path of the schedule are studied in-depth.
Digestion of the content shall be facilitated by resolving typical business problem cases and conflict situations for client, supply, insurance, or third party contracts through team-based role-plays by applying relevant methods for contract and claim management.

Course contents:

- Basics of contract and claim management
- Organizational and operational integration of claim management into project delivery process
- Special methods for claim management on international energy projects
- Process-based claim management on international energy projects across different project phases

Teaching and study methods:	Lecture, practical examples, exercises, group work
Course material:	Script online in ILIAS, if necessary, additional handouts
Recommended study literature:	Köhl, T.: *Claim Management in internationalen Anlagengeschäft*, Deutscher Universitätsverlag, 2000
	Kühnle, W. / Pinnels, J.: *Projekt, Vertrag und Claim*, VDMA Verlag, 2012
	Deutsche Gesellschaft für Risikomanagement (Hrsg.): *Risikoaggregation in der Praxis*, Springer Verlag, 2008
	Kühnel, W.: *Claimsmanagment in Schlüsselworten; Beiträge zum Industrieanlagenbau*; Vdma Verlag, 2010

MBW-EW - Business Administration (Energy Management)

Module VI – Risk and Asset Management

Module-No.:	Courses:	Risk Management
MBW-EW-06		Asset and Portfolio Management *

Responsible for Module	Prof. Dr. Ulreich

Study Phase:	-	**Hours per Week:**	6 SWS
Semester:	1 and 2	**Workload:**	240 Hrs.
Module Duration	2 Semesters	**Credit Points:**	8 LP
Status:	Required Module	**Examination Performance:**	Written Exams
Cycle:	Each Semester	**Weighting for overall grade**	8 x

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
90 Hrs.	0 Hrs.	147,5 Hrs.	2,5 Hrs. / 150 Min.

Hrs.-Information in industries minutes; no time minutes

Short description of module:

The “Risk Management” course includes methods for the identification, measurement, and control of financial risks in energy markets.

The “Asset and Portfolio Management” course deals with the basics of asset and portfolio management and illustrates them using current examples and case studies.

Links between the module and other courses and modules

This module has the following links to other modules of the Master’s Degree in Business Administration with a focus on Energy Management:
Module II “Energy Markets and Energy Products”, Module III “European and National Energy Law”, Module V “International Energy Projects and Contract Design”, Module X “Financing”, Module XII “Business Model Development for the Energy Industry”

Studiability for other degree programmes:

The module is suitable for students with bachelor’s degrees in economics, mathematics, natural sciences, and engineering. Good knowledge of energy-related topics is required.

MBW-EW - Business Administration (Energy Management)

Course:	Risik Management	Course-Code:
		MBW-EW-06.1

Responsible for Module	Prof. Dr. Ulreich

Study Phase:	-	**Hours per Week:**	2 SWS
Semester:	1	**Workload:**	90 Hrs.
Module Duration	Required Course	**Credit Points:**	3 LP
Cycle:	Each Semester	**Examination Performance:**	Written Exam, 60 Min.
Language of Instruction:	German / English		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
30 Hrs.	0 Hrs.	59 Hrs.	1,0 Hrs. / 60 Min.

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

Undergraduate level: financial mathematics, probability and statistics, energy economics, fundamentals of energy commercialization

Qualification objectives:

A risk manager must be able to identify any number of risk-related issues and be able to deal with them effectively. Participants are expected to become familiar with a broad range of risk management concepts and techniques and to acquire the ability to develop appropriate risk management tools and solutions for the real world.

Course contents:

- Risk management fundamentals
  - Random variables and important distributions
  - Risk measurement, value at risk (VaR)
  - Back testing VaR
  - Extensions of VaR: Stress tests, expected shortfall, liquidity adjustments
  - Estimation of market parameters
  - Volatility forecasts
- Stochastic modeling of risk factors
- Simulation
- Energy risk management (buy-side/sell-side)
- Credit and operational risk

Teaching and study methods:	Lecture
Course material:	Script online in ILIAS, if necessary, additional handouts
Recommended study literature:	Hull, J.C.: *Options, Futures, and Other Derivatives*, 9th Edition, publishing house Prentice Hall, 2014
	Crouhy, M. / Galai, D. / Mark, R.: *The Essentials of Risk Management*, 2nd Edition, publishing house Mcgraw-Hill, 2014
	Swindle, G.: *Valuation and Risk Management in Energy Markets*, publishing house Cambridge University Press, 2015

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MBW-EW - Business Administration (Energy Management)

Course:	Asset and Portfolio Management *	Course-Code:
		MBW-EW-06.2

Responsible for Module	Prof. Dr. Ulreich

Study Phase:	-	**Hours per Week:**	4 SWS
Semester:	2	**Workload:**	150 Hrs.
Module Duration	Required Course	**Credit Points:**	5 LP
Cycle:	Each Semester	**Examination Performance:**	Written Exam, 90 Min.
Language of Instruction:	German		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
60 Hrs.	0 Hrs.	88,5 Hrs.	1,5 Hrs. / 90 Min.

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

Basic knowledge of economic mathematics (interest rate and annuity calculation), economic statistics and probability calculation is required. This includes, in particular, the confident handling of interest and annuity calculations, as well as familiarity with concepts from statistics (measures of position and dispersion, correlation, regression theory) and probability theory (random variables, expected value, variance, normal distribution). Such knowledge is taught, for example, in the corresponding courses of the Bachelor's degree programme in Business Administration.

Qualification objectives:

After successful participation, students will have a sound knowledge of the theoretical approaches to asset and portfolio management and will be able to apply and critically reflect on these. In addition to learning the scientific models and methods, this includes in particular the transfer to a real-life simulation game. In this game, students act as investment advisors to a wealthy client and carry out all the steps of asset and portfolio management (creating the client's risk profile, developing a strategic asset allocation, implementing this, reporting obligations, advising clients, etc.). Part of this real-life simulation is investing on the real capital market and thus also dealing with the unpredictable, current economic development. In this way, students directly experience the challenges and limits between theory and practical implementation and can critically scrutinise, explain and evaluate results. Furthermore, students actively engage with an ethical approach to investment decisions.

Course contents:

- Introduction to asset and portfolio management (magic triangle, asset classes, SAA / TAA, investment styles)
- Portfolio theory according to Markowitz and Tobin (determination of efficient portfolios, selection of optimal portfolios, capital asset pricing model)
- Special aspects of behavioural finance theory and the associated risk profiles of clients and ethics-oriented discussion of investment management
- Valuation of assets and options (micro/macro data, fundamental analysis, technical analysis, binomial models, Black-Scholes model)
- Portfolio management (portfolio management process, active trading on the stock market, risk management, reporting obligations, concepts such as CPPI, option and duration strategies)

Teaching and study methods:	Lecture, self-study, real-life simulation with dialogue situations, presentations
Course material:	All documents (videos, texts, exercises, ...) are provided by the course team
Recommended study literature:	Jesch/Brodehser (2023): Institutionelle Kapitalanlage. Schäffer-Poeschel Verlag für Wirtschaft, Steuern, Recht GmbH
	Spremann (2008): Portfoliomanagement. Oldenbourg Wissenschaftsverlag
	Günther et al. (2012): Portfolio-Management. Frankfurt School Verlag

MBW-EW - Business Administration (Energy Management)

Module VII –Energy Economics Seminar

Module-No.:	**Courses:**	Energy Economics Seminar 1
MBW-EW-07		Energy Economics Seminar 2

Responsible for Module	Prof. Dr. Ulreich

Study Phase:	-	**Hours per Week:**	4 SWS
Semester:	1 and 2	**Workload:**	180 Hrs.
Module Duration	2 Semesters	**Credit Points:**	6 LP
Status:	Required Module	**Examination Performance:**	Study Paper(s)
Cycle:	Each Semester	**Weighting for overall grade**	6 x

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
60 Hrs.	0 Hrs.	120 Hrs.	Study Paper(s)

Hrs.-Information in industries minutes; no time minutes

Short description of module:

The energy management seminar extends over two semesters and is accordingly subdivided into the two courses “Energy Management Seminar 1” and the subsequent course “Energy Management Seminar 2” for the students in the following semester. In terms of content, relevant and current topics are selected in the course “Energy Management Seminar 1”, which are dealt with in the lecture and, in particular, enriched by the introduction of external speakers.

In “Energy Management Seminar 1”, a wide range of specialist aspects relating to energy policy, energy law, and energy management issues are presented and discussed from theoretical and practical perspectives that are not addressed elsewhere in the curriculum. The desired topicality and relevance mean that the topics usually vary from semester to semester. The topics presented – especially by external speakers – correspond to those of keynote lectures, which enable the students to deepen their own knowledge.

In “Energy Management Seminar 2”, the focus is on the students’ independent work: Here a topic, derived, for example, from the keynote lectures of the previous semester, explored in-depth as part of a research project, is elaborated as an examination form and presented to the students in the second half of the lecture.

Links between the module and other courses and modules

The module is a typical cross-sectional module that, due to the formulated requirement with changing contents in line with the energy industry, wants to take the students with them where areas of activity (“major construction sites”) are discussed that are important for the orientation of or in the energy industry.

Studiability for other degree programmes:

The module is basically suitable for business administration as well as energy and environmental engineering courses.

MBW-EW - Business Administration (Energy Management)

Course:	Energy Economics Seminar 1	Course-Code:
		MBW-EW-07.1

Responsible for Module	Prof. Dr. Ulreich

Study Phase:	-	**Hours per Week:**	2 SWS
Semester:	1	**Workload:**	90 Hrs.
Module Duration	Required Course	**Credit Points:**	3 LP
Cycle:	Each Semester	**Examination Performance:**	Study Paper(s) / with Energy Economics Seminar 2
Language of Instruction:	German		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
30 Hrs.	0 Hrs.	60 Hrs.	Study Paper(s)

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

The prerequisites are profound business and energy management knowledge at the level of a previous bachelor's degree as entry requirements for the master's degree.

Qualification objectives:

Through this course, the students should acquire knowledge on selected current and relevant topics in the energy industry and experience examples of how companies deal with these challenges, i.e. how they shape the transition.

The aim is to give the students a deeper understanding of the economic effects of the "energy transition", especially through the keynote lectures with their practical relevance.

Course contents:

The "energy transition" is being accompanied by a complex transformation and eruption in the energy industry, which is leading to permanent new challenges. The framework conditions under energy law are becoming increasingly complex, and the energy markets are changing rapidly. The players in the energy industry have to redesign customer relationships and increasingly digitalized processes and create successful business models. Established energy companies also recognize that their employees must be empowered to be able to cope with the (market) requirements and challenges of the future. In a de-materialized, digitalized world, the size of energy companies is no longer an advantage per se – rather, speed, creativity, and adaptability are a competitive advantage.

Teaching and study methods:	Lecture, presentations, case examples, exercises, role-plays, individual and group work
Course material:	Script, presentations, specialist journals (et, StadtWerk, EM, etc.)
Recommended study literature:	Ströbele, W. / Pfaffenberger, W. / Heuterkes, M.: *Energiewirtschaft - Einführung in Theorie und Politik, 3. Auflage, Oldenbourg Wissenschaftsverlag, 2013*

MBW-EW - Business Administration (Energy Management)

Course:	Energy Economics Seminar 2	Course-Code:
		MBW-EW-07.2

Responsible for Module	Prof. Dr. Ulreich

Study Phase:	-	**Hours per Week:**	2 SWS
Semester:	2	**Workload:**	90 Hrs.
Module Duration	Required Course	**Credit Points:**	3 LP
Cycle:	Each Semester	**Examination Performance:**	Study Paper(s) / with Energy Economics Seminar 1
Language of Instruction:	German		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
30 Hrs.	0 Hrs.	60 Hrs.	Study Paper(s)

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

The prerequisites are profound prior knowledge of business and energy management at the level of a previous bachelor's degree as an entry requirement for the master's degree and participation in the "Energy Management Seminar 1" course.

Qualification objectives:

Through this course, the students should acquire knowledge on selected current and relevant topics in the energy industry and experience examples of how companies deal with these challenges, i.e. how they shape the transition.

The aim is to give the students a deeper understanding of the economic effects of the "energy transition", especially through the keynote lectures with their practical relevance.

Course contents:

The thematic contents result from the course "Energy Management Seminar 1" and are explored and expanded if necessary in the first half of the lecture. The students are actively involved in the course in that, for example, in the second half of the lecture, they also present their research project as an examination and prepare and conduct a discussion on the topic with one another.

Teaching and study methods:	Lecture, individual and group work with presentation and exercises
Course material:	Script, presentations, specialist journals (et, SadtWerk, EM, etc.), Internet research
Recommended study literature:	Ströbele, W. / Pfaffenberger, W. / Heuterkes, M.: *Energiewirtschaft - Einführung in Theorie und Politik, 3. Auflage, Oldenbourg Wissenschaftsverlag, 2013*

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MBW-EW - Business Administration (Energy Management)

Module VIII – Management-Skills

Module-No.:	**Courses:**	Customer and Investor Relationship *
MBW-EW-08		English – Negotiation *

Responsible for Module	Prof. Dr. Heyser

Study Phase:	-	**Hours per Week:**	6 SWS
Semester:	2	**Workload:**	180 Hrs.
Module Duration	1 Semester	**Credit Points:**	6 LP
Status:	Required Module	**Examination Performance:**	Oral Exam
Cycle:	Each Semester	**Weighting for overall grade**	6 x

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
90 Hrs.	0 Hrs.	89,5 Hrs.	0,5 Hrs. / 30 Min.

Hrs.-Information in industries minutes; no time minutes

Short description of module:

These two courses are to allow the students to deepen their English practice in two common areas of everyday work-in-life, whether applying for employment or communicating with business partners. The stress is on management skills; however, students are encouraged to follow their own fields of interest, so that they feel supported in their self-development, finding their own strengths and areas for self-expression and expansion in international business activities.

The German word “Betriebswirtschaft” does not allow an understandable translation into the English language as it relies entirely on the German culture it comes from and shows the difference between the ‘generalist’ (Germany) and ‘specialist’ (UK) cultures. The course takes over the idea of business studies in the UK and overlays the property and construction businesses, particularly the profession of surveying, concentrating on product marketing and valuation issues, where communication skills become more than just language issues, but rather develop into awareness, holism, creativity, and inventiveness.

Links between the module and other courses and modules

The course fits into the University of Applied Sciences’ overall philosophy of internationality and offering cultural exchange experiences outside the German environment.
This means, they pick up special themes and enrich them with international and intercultural aspects and the English vocabulary.
Communication skills and behavioral patterns as learned and practiced in these courses are useful for any other fields of business or construction and real estate management.

The course fits into the University of Applied Sciences’ overall philosophy of “Studium Generale” and internationality, offering experiences in cultural exchange outside the German environment.

As the contents of the courses are chosen individually every time according to the student’s fields of interest, the courses can deal with all the subjects of other courses (of the master’s studies itself, the Bachelor’s Degree in Construction and Real Estate or of any other studies or practical experiences). This means, they pick up special themes and enrich them with international and intercultural aspects and the English vocabulary.

Communication skills and behavioral patterns as learned and practiced in these courses are useful for any other fields of business or construction and real estate management.

Studiability for other degree programmes:

The module develops communication skills in B2B processes on an abstract, practical, and intercultural level and prepares future managers in particular, regardless of their professional orientation, in the extended areas of dealing with employees and leadership, customer management and acquisition as well as their economic importance in the company.

MBW-EW - Business Administration (Energy Management)

Course:	Customer and Investor Relationship *	Course-Code:
		MBW-EW-08.1

Responsible for Module	Prof. Dr. Heyser

Study Phase:	-	**Hours per Week:**	2 SWS
Semester:	2	**Workload:**	60 Hrs.
Module Duration	Required Course	**Credit Points:**	2 LP
Cycle:	Each Semester	**Examination Performance:**	Oral Exam; 15 Min.
Language of Instruction:	English		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
30 Hrs.	0 Hrs.	29,75 Hrs.	0,25 Hrs. / 15 Min.

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

The students can follow subject-specific discussions in English and actively participate in them. They have a basic knowledge of business communication processes and the ability to negotiate.

Qualification objectives:

The students should understand the interrelationships of long-term business relationships both with customers and with all relevant stakeholders of a company. The aim is to convey the complexity of multilateral relationship management in relation to sustainable business success.

Course contents:

- Communication training and meeting preparation
- Identification of success factors in the customer and investor relationship (CIR)
- Analysis and use of suitable instruments for the CIR
- Costs and benefits of cross-selling processes
- Information management within the individual CIR
- Early identification of risks and opportunities within the CIR process

Teaching and study methods:	Interactive lecture, practical exercises, group work, self-study
Course material:	Script, literature, personal contributions
Recommended study literature:	Peelen, E. / Beltman, R.: *Customer Relationship Management*, 2nd Edition, publishing house Pearson Education Limited, 2013
	Buttle, F.: *Customer Relationship Management*, 2nd Edition, publishing house Taylor & Francis, 2009
	Bruhn, M.: *Relationship Marketing. Das Management von Kundenbeziehungen*, 3. Auflage, Vahlen Verlag, 2013
	Georgi, D. / Hadwich, K. (Hrsg.).: *Management von Kundenbeziehungen. Perspektiven - Analysen - Strategien - Instrumente*, Gabler Verlag, 2009

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MBW-EW - Business Administration (Energy Management)

Course:	English – Negotiation *	Course-Code:
		MBW-EW-08.2

Responsible for Module	Prof. Dr. Heyser

Study Phase:	-	**Hours per Week:**	4 SWS
Semester:	2	**Workload:**	120 Hrs.
Module Duration	Required Course	**Credit Points:**	4 LP
Cycle:	Each Semester	**Examination Performance:**	Oral Exam; 15 Min.
Language of Instruction:	English		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
60 Hrs.	0 Hrs.	59,75 Hrs.	0,25 Hrs. / 15 Mi.

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

The students recognize real estate industry contexts and can express themselves in English. The language level of the advanced technical college certificate is regarded as the standard for this.

Qualification objectives:

The students can conduct contract negotiations independently in English, organize meetings, and chair them independently. They will have all the necessary knowledge to be able to conduct intercultural communication.

Course contents:

The students acquire knowledge in the field of conducting complex negotiations in English. To this end, various “communications skills” are learned and practiced. The specifics of intercultural communication beyond national borders are practiced as well as the organization and implementation of meetings and their specifics and dangers. International commercial investment and rental contracts are processed and special features are presented in detail. The course is in English.

Teaching and study methods:	Lecture, discussion rounds about the above and topics, exercises, presentations, and project work brought in by the students
Course material:	Lecture manuscript online in ILIAS
Recommended study literature:	Böhler, W. / Hinck, M.: *Das Kompendium. Wirtschaftsenglisch*, 3. Auflage, Merkur Verlag, 2008
	Shipside, S. / Jeavons, T. & Company (Hrsg): *Effective Communications (worklife)*, publishing house Dorling Kindersley Adult, 2007

MBW-EW - Business Administration (Energy Management)

Module IX – Interdisciplinary Project Works

Module-No.:	**Courses:** Interdisciplinary Project Works *
MBW-EW-09	

Responsible for Module	Prof. Dr. Beyerle

Study Phase:	-	**Hours per Week:**	4 SWS
Semester:	2	**Workload:**	180 Hrs.
Module Duration	1 Semester	**Credit Points:**	6 LP
Status:	Required Module	**Examination Performance:**	Project Work(s)
Cycle:	Each Semester	**Weighting for overall grade**	6 x

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
60 Hrs.	0 Hrs.	120 Hrs.	Project Work(s)

Hrs.-Information in industries minutes; no time minutes

Short description of module:

“Interdisciplinary project work” is located at the interface between theory and practice. As part of the project work, the students are confronted with specific questions from business and operational practice or ongoing research projects. When working on the project, particular emphasis is placed on intensive, performance-oriented cooperation in the project teams.

“Interdisciplinary project work” aims to bring theory and practice together. As part of their project work, students apply for advertised projects or develop their own project task in cooperation with lecturers and practice partners.

The projects should not only result in useful problem solutions for companies and research but also networks of relationships for later career entry.

As part of the project work, suggestions for the master’s thesis are usually also made.

Links between the module and other courses and modules

The module follows on from Module IV “Business Management” by encouraging the students to apply the knowledge acquired there.

In addition, the module enables the development of skills that are required in the master’s thesis and can promote the development of topics for the master’s thesis.

Studiability for other degree programmes:

As an interdisciplinary module, this module builds on relevant prior business and legal knowledge. It is a module with very particular requirements that only appears to be suitable to a limited extent for other courses of study. (Exception: The project management degree course)

MBW-EW - Business Administration (Energy Management)

Course:	Interdisciplinary Projects Work *	Course-Code:
		MBW-EW-09.1

Responsible for Module	Prof. Dr. Beyerle

Study Phase:	-	**Hours per Week:**	4 SWS
Semester:	2	**Workload:**	180 Hrs.
Module Duration	Required Course	**Credit Points:**	6 LP
Cycle:	Each Semester	**Examination Performance:**	Project Work(s)
Language of Instruction:	German		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
60 Hrs.	0 Hrs.	120 Hrs.	Project Work(s)

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

Module IV “Business Management” is the basis for successful project work. Knowledge of Module IX “Academic work and Presentation Techniques” of the Bachelor’s Degree in Business Administration (Construction and Real Estate) is required and is not part of the course.

Qualification objectives:

“Interdisciplinary project work” deals with selected practice-relevant topics from the construction, real estate, and energy industries as well as the areas of general business administration and economics. The module gives students an insight into business administration as an applied science and helps to further develop the students’ “power of reality” by using a comprehensive project task to learn how business theory is linked to a practical problem.

The students acquire the following skills in detail:

- Putting methods into practice, especially data collection and analysis
- Creation of an independent practical-empirical paper in small groups under the guidance of a supervisor
- Regular discussions of the intermediate steps with the supervisors and practice partners
- Public relations and relationship management with regard to the client

In addition, the students get to know the methods of project management as well as the risks and opportunities of group work.

Course contents:

In the course “Interdisciplinary Project Work”, research-based learning and action are the focus. Disciplinary knowledge and interpretation patterns, the planning and implementation of praxis, and its theory-based empirical analysis and reflection constitute a project for applied business research.

The practical work in the field of business, as well as the project activities, are prepared, planned, carried out, and finally reflected on. Specific steps/sequence of the “interdisciplinary project work”:

- Presentation of the topic and the milestones
- Problem definition
- Identification and discussion of the measures necessary to solve the problem
- Information evaluation (preparation, analysis, and compression of the data to a level necessary for decision-making)
- Development of solution to the problem
- Final presentation
- Creation and submission of the project report including the documentation of the steps carried out
- Final presentation and submission of the project by the client

Teaching and study methods:	Project study, coaching, project plenum
Course material:	Lecture materials online in ILIAS
Recommended study literature:	Patzak, G. / Rattay, G.: *Projektmanagement. Leitfaden zum Management von Projekten, Projektportfolios und projektorientierten Unternehmen*, 5. Auflage, Linde Verlag, 2012
	Litke, H.D.: *Projektmanagement. Methode, Techniken und Verhaltensweisen*, 5. Auflage, Carl Hanser Verlag, 2007

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MBW-EW - Business Administration (Energy Management)

Module X - Financing

Module-No.:	Courses:	Investment Appraisal and Quantitative Methods *
MBW-EW-10		Financing of Energy Projects and Ventures

Responsible for Module	Prof. Dr. Lassen

Study Phase:	-	**Hours per Week:**	6 SWS
Semester:	2 and 3	**Workload:**	240 Hrs.
Module Duration	2 Semesters	**Credit Points:**	8 LP
Status:	Required Module	**Examination Performance:**	Written Exam | Study Paper(s)
Cycle:	Each Semester	**Weighting for overall grade**	8 x

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
90 Hrs.	0 Hrs.	150 Hrs. | 149 Std.	1,0 Hrs. / 60 Min. | Study Paper(s)

Hrs.-Information in industries minutes; no time minutes

Short description of module:

This extensive module gives the students the tools they need to develop their own ideas regarding the financing of and investments in energy projects or energy start-ups and be ready to negotiate a deal.
This module summarizes the qualitative (descriptive, market-oriented) and quantitative (mathematical, analytical) facts that allow the description and analysis of complex energy-specific investment and financing processes.

One of the most important tasks in business life is to manage the risk and return of a portfolio and to measure and assess its performance. For this purpose, facts are described, quantitative models are developed, methods of investment appraisal are practiced, and financing vehicles are provided to finance complex energy projects. In addition, financing structures and evaluation approaches for start-ups are developed.

The aim of this module is based on two pillars: the imparting of theoretical-methodological knowledge and the practical application of these methods in practical cases.

Links between the module and other courses and modules

Investment and financing processes do not take place abstractly “in a vacuum”, but are embedded in concrete market events (Module VII “Energy Management Seminar”) or projects (Module V “International Energy Projects and Contract Design”). It is, therefore, helpful to have completed these modules beforehand. There is contact (but no overlaps) with the (international) portfolio view as conveyed in Module VI “Risk and Asset Management”.

In this module, the courses “Investment Appraisal and Quantitative Methods” as well as “Financing of Energy Projects and Ventures” are examined in different ways (written exam and study paper). This is due to the fact that the course “Investment Appraisal and Quantitative Methods” is more focused on quantitative-mathematical skills, while the course “Financing of Energy Projects and Ventures” primarily depends on the application of the tools that have been learned.

Studiability for other degree programmes:

This module has demanding requirements from general business administration for financing investments. The module constitutes a specific feature of this degree course and its focus. It is, therefore, only suitable for other courses of study in exceptional cases and after consultation.

MBW-EW - Business Administration (Energy Management)

Course:	Investment Appraisal and Quantitative Methods *	Course-Code:
		MBW-EW-10.1

Responsible for Module	Prof. Dr. Lassen

Study Phase:	-	**Hours per Week:**	2 SWS
Semester:	2	**Workload:**	90 Hrs.
Module Duration	Required Course	**Credit Points:**	3 LP
Cycle:	Each Semester	**Examination Performance:**	Written Exam , 60 Min.
Language of Instruction:	German		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
30 Hrs.	0 Hrs.	59 Hrs.	1,0 Hrs. / 60 Min.

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

Students have knowledge of the basic investment options and are familiar with basic financial mathematics and statistical relationships. Such knowledge is taught, for example, in the corresponding courses of the Bachelor's degree programme in Business Administration.

Qualification objectives:

Students learn about quantitative methods that are particularly useful in business management applications and expand their existing basic knowledge. These newly learnt methods can be assessed and applied with regard to their opportunities and limitations and their results can be critically evaluated. Students are able to apply theoretical concepts to practical cases. Special emphasis is placed on the practical implementation in Excel or in VBA macros.

Course contents:

- Application of statistical methods for KPI analysis of simulation results
- Interest rate theory and interest rate forecasting models
- Default risks and their evaluation using ratings, as well as integration into cash flow models
- Dynamic and simulative valuation methods of investment calculation, e.g. Monte Carlo simulation

Teaching and study methods:	Inverted classroom with self-preparation and joint plenary sessions to discuss questions, exercises, real-life examples
Course material:	All documents (videos, texts, exercises, ...) are provided by the course team
Recommended study literature:	Brealey, R.A. / Myers, S.C. / Allen, F.: *Principles of Corporate Finance*, 13rd Edition, publishing house Mcgraw-Hill Higher Education, 2019
	Schüler, A.: *Finanzmanagement mit Excel. Grundlagen und Anwendungen*, 2. Auflage, Vahlen Verlag, 2016
	Löffler, G.; Posch, P.: *Credit Risk Modeling using Excel and VBA*, 1st edition, Wiley Finance Series, 2010
	Hull, J.C.: *Optionen, Futures und andere Derivate*, 10. Auflage, Verlag Pearson Education, 2017

MBW-EW - Business Administration (Energy Management)

Course:	Financing of Energy Projects and Ventures	Course-Code:
		MBW-EW-10.2

Responsible for Module	Prof. Dr. Lassen

Study Phase:	-	**Hours per Week:**	4 SWS
Semester:	3	**Workload:**	150 Hrs.
Module Duration	Required Course	**Credit Points:**	5 LP
Cycle:	Each Semester	**Examination Performance:**	Study Paper(s)
Language of Instruction:	English		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
60 Hrs.	0 Hrs.	90 Hrs.	Study Paper(s)

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

Students have a basic understanding of the different technologies for renewable and fossil energy conversion and understand the underlying challenges and risks. Moreover, they have basic knowledge of controlling, investment calculus, and enterprise valuation.

Qualification objectives:

Students acquire solid knowledge about the different investment vehicles for (especially renewable) energy projects, such as project finance, project bonds, closed funds, etc. Students shall be qualified to structure energy projects with the aforementioned instruments. Moreover, students should be qualified to structure a finance package for a start-up in the energy sector and understand the valuation tools used e.g. by venture capitalists.

Course contents:

Financing of energy projects:

- Fundamentals of financing energy projects
- Project finance and financial modeling
- Project bonds, profit-sharing rights, closed-end funds
- Crowd-funding
- Energy cooperatives
- Public grant funding

Financing of Energy Ventures:

- Financing sources for new ventures
- Venture capital process
- Company valuation methods

Teaching and study methods:	Lecture, case study work, simulation game
Course material:	Script and templates; Manual for the Blue Ocean Strategy Simulation Business Game
Recommended study literature:	Brealey, R.A. et al.: *Principles of Corporate Finance*, Mcgraw-Hill Higher Education, 2019
	Gatti, S.: *Project Finance in Theory and Practice*, Elsevier,2013
	Böttcher, J.: *Finanzierung von Erneuerbare-Energien-Vorhaben*, Oldenburg Verlag, 2009
	Fabozzi, F.: *Entrepreneurial Finance and Accounting for High-Tech Companies*, MIT Press, 2016

MBW-EW - Business Administration (Energy Management)

Module XI - Digitalization of the Energy Industry

Module-No.:	**Courses:**	Information and Communication Systems *
MBW-EW-11		IT Deployment in the Energy Market, Big Data, IoT
		Digitalization Trends in the Energy Industry

Responsible for Module	Prof. Dr. Grandel

Study Phase:	-	**Hours per Week:**	6 SWS
Semester:	2 and 3	**Workload:**	210 Hrs.
Module Duration	2 Semesters	**Credit Points:**	7 LP
Status:	Required Module	**Examination Performance:**	Written Exam | Study Paper(s)
Cycle:	Each Semester	**Weighting for overall grade**	7 x

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
90 Hrs.	0 Hrs.	119 Hrs. | 120 Std.	1,0 Hrs. / 60 Min. | Study Paper(s)

Hrs.-Information in industries minutes; no time minutes

Short description of module:

The digitalization of the energy industry is a prerequisite for the success of the energy transition and the achievement of climate protection goals. Digitalization is fundamentally changing established processes and business models in the energy industry. Digitalization is thus also becoming a key competence for business graduates in the energy industry. The module spans the basics of information and communication systems, technological drivers such as big data and artificial intelligence, and their current and future applications in the energy industry.

In the “Information and Communication Systems” course, students learn the technical and methodological basics of information and communication systems (ICT). In particular, the importance of ERP systems for companies is conveyed. Using the example of the ERP software SAP R/3, aspects from the introduction about operations in companies are highlighted. The possibilities and limits of data processing when used for the key areas of strategy, organization, planning, and HR management are presented in detail.

In the course “Use of IT in the Energy Market, Big Data, IoT”, the technological drivers for the digitalization of the energy industry are dealt with. The course looks at the functionality and disruptive potential of new technologies such as big data, business intelligence, artificial intelligence, and the networking of devices (Internet of Things, IoT) for the energy industry. Current and future applications of IT systems in the energy industry value chain are also considered. Among other things, the importance of industry-specific characteristics for ERP systems, such as SAP IS-U, is discussed.

The course “Digitalization trends in the energy industry” focuses on the transformation of the energy industry through the technologies dealt with in “IT use in the energy market, big data, IoT”. The drivers and methods for the digital transformation of companies are discussed. What is learned is consolidated through case studies and specific applications.

Links between the module and other courses and modules

The module builds on basic knowledge of business and energy management. These are conveyed, for example, in Module III “Business Information Systems” and Module XI “Fundamentals of the Energy Industry” of the Bachelor’s Degree in Energy Economics (Business Administration). The module is closely linked to the module “Business Model Development for the Energy Industry”. - There, the students learn how new business models based on digital technologies are developed and introduced in the market.

Studiability for other degree programmes:

The course is generally compatible with other courses, provided that the necessary requirements are met.

MBW-EW - Business Administration (Energy Management)

Course:	Information and Communication Systems *	Course-Code:
		MBW-EW-11.1

Responsible for Module	Prof. Dr. Grandel

Study Phase:	-	**Hours per Week:**	2 SWS
Semester:	2	**Workload:**	60 Hrs.
Module Duration	Required Course	**Credit Points:**	2 LP
Cycle:	Each Semester	**Examination Performance:**	Written Exam; 60 Min.
Language of Instruction:	German		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
30 Hrs.	0 Hrs.	29 Hrs.	1,0 Hrs. / 60 Min.

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

Basic business knowledge is an advantage, especially in accounting (e.g. knowledge as taught in the Bachelor's Degree in Business Management (Construction and Real Estate) in Module V "Introduction to Accounting"). If students without prior knowledge are among the participants, the lecturer will give an introduction to the relevant business and accounting issues at the appropriate point.

Qualification objectives:

The students should recognize the comprehensive importance of a large ERP system for a company and the importance of SAP R/3 in the German ERP landscape. The course is intended to enable students to identify important fields of action in companies, to use the methods of (business) computer science they have learned to increase energy efficiency, and to evaluate the resulting effects.

Based on this basic knowledge, the students should be able to form an opinion about the possibilities and limits of the use of ERP software in different areas of corporate management.

Course contents:

The course deals with the use of information and communication systems to increase efficiency in various industries. For this purpose, the fundamentals from the areas of system development, system implementation, and potential benefits assessment are conveyed, and using specific applications, it is shown how methods from (business) information systems can be used to achieve corporate goals.
In the course, the ideas behind "large-scale data processing" are conveyed using various practical examples.

- Case study: Order processing
- Case study: Procurement of trading software
- Case study: Complaint handling
- Possible case study: Automated procurement

Teaching and study methods:	Lecture, practical case examples, ~~exercises on the PC~~, written working documents for working through the case studies independently
Course material:	Script and handouts online in ILIAS
Recommended study literature:	Thome, R. / Winkelmann, A.: *Grundzüge der Wirtschaftsinformatik*; Springer Gabler Verlag, 2015
	Keller, G. / Teufel, T.: *SAP R/3 prozessorientiert anwenden*, Addison Wesley Longman Verlag, 2015
	Staud, J.L.: *Geschäftsprozessanalyse*, 3. Auflage, Springer Verlag, 2006
	Several authors (Ed.): *What Every Business Student Needs to Know About Information Systems*, in: Communications of the Association for Information Systems, Volume 9, Article 30, page 467 – 477, 2002,
	Thome, R. / Winkelmann, A.: *Grundzüge der Wirtschaftsinformatik*; Springer Gabler Verlag, 2015

MBW-EW - Business Administration (Energy Management)

Course:	IT Deployment in the Energy Market, Big Data, IoT	Course-Code:
		MBW-EW-11.2

Responsible for Module	Prof. Dr. Grandel

Study Phase:	-	**Hours per Week:**	2 SWS
Semester:	2	**Workload:**	90 Hrs.
Module Duration	Required Course	**Credit Points:**	3 LP
Cycle:	Each Semester	**Examination Performance:**	Study Paper(s) / with Digitalization Trends in the Energy Industry
Language of Instruction:	German		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
30 Hrs.	0 Hrs.	60 Hrs.	Study Paper(s)

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

Basic knowledge of business and energy management is required. These are conveyed, for example, in Module III "Business Information Systems" and Module XI "Fundamentals of the Energy Industry" of the Bachelor's Degree in Energy Economics (Business Administration). If students without prior knowledge are among the participants, the lecturer will give an introduction to the relevant business and energy industry issues at the appropriate point.

Qualification objectives:

The students get to know the various applications of IT systems in the energy supply chain. In mass markets such as the supply of gas and electricity – with a large number of market players interacting with one another – the efficient and cost-effective processing of transactions is only possible with the support of automated data exchange. In particular, they will know the importance of industry-specific versions of ERP systems, such as SAP IS-U. They will also know the importance and basic functionality of electronic energy data management (EDM) and market communication in the electricity, gas, and heating markets for important energy management processes.

In addition, students are made aware of new IT and data technologies. They will learn to recognize the strategic value of data and be able to assess the future application potential of data-based technologies such as big data and artificial intelligence. They will receive the technological background knowledge to independently pursue and critically evaluate the further development of these technologies and their applications.

Course contents:

- Overview of processes and IT systems in the energy industry
- SAP IS-U: Application areas and functionality, especially for market communication
- Functionality, development status, current applications, and future potentials in the energy industry of:
  - Business intelligence
  - Big data
  - Artificial intelligence
  - Blockchain
  - Networking of devices (Internet of Things (IoT), machine-to-machine communication (M2M))

Teaching and study methods:	Lecture, practical case examples, case studies
Course material:	Script and handouts online in ILIAS, current market studies, analyses, and specialist articles are made available in good time.
Recommended study literature:	Zierau, T.: *SAP for Utilities. Das umfassende Handbuch für Energieversorger*, 2. Auflage, SAP Press, 2015
	Kreutzer, R. / Sirrenberger, M.: *Künstliche Intelligenz verstehen*, Springer Gabler, 2019
	Mayer-Schönberger, V. / Cukier, K.: *Big Data: Die Revolution die unser Leben verändern wird*, Redline, 2013

MBW-EW - Business Administration (Energy Management)

Course:	Digitalization Trends in the Energy Industry	Course-Code:
		MBW-EW-11.3

Responsible for Module	Prof. Dr. Grandel

Study Phase:	-	**Hours per Week:**	2 SWS
Semester:	3	**Workload:**	60 Hrs.
Module Duration	Required Course	**Credit Points:**	2 LP
Cycle:	Each Semester	**Examination Performance:**	Study Paper(s) / with IT Deployment in the Energy Market, Big Data, IoT
Language of Instruction:	German		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
30 Hrs.	0 Hrs.	60 Hrs.	Study Paper(s)

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

The course builds on the previous courses “Information and Communication Systems”* and “Use of IT in the Energy Market, Big Data, IoT” of this module. Some aspects from the “Smart Energy” course (compulsory elective Module III) of the Bachelor’s Degree in Energy Management (BWL) are taken up and explored more deeply. If there are students with no prior knowledge among the participants, the lecturer will give an introduction to the relevant issues at the appropriate point.

Qualification objectives:

Based on the fundamentals of information and communication systems for companies and an understanding of new technology drivers, students learn to estimate future developments in the energy industry due to digitalization. They will be able to form their own vision and well-founded opinion on the digital transformation of the energy sector. They can critically question and follow the current specialist discussion. They can also assess the strategic effects of digitalization on the value chain and business models in the energy industry.

Course contents:

- Strategic and technological drivers of the “digitalization” megatrend in the energy industry.
- Effects of the digital transformation on the energy industry value chain and the existing business models.
- Methods and approaches for the digital transformation of companies in the energy industry.
- Aspects of data protection and data security.
- The role of “flexibility” (i.e., the intelligent control of consumption, generation, and storage) for a power grid with a high share of renewable energies.
- Functionality and scope of new technologies and services such as: smart meters, smart grids, virtual power plants, energy management systems, etc.
- The current national and international pilot projects for the testing and further development of digital technologies and applications in the energy industry.

Teaching and study methods:	Seminar-style lessons, practical case examples, and case studies
Course material:	Script and handouts online in ILIAS, market studies, analyses, and specialist articles are made available in good time.
Recommended study literature:	Doleski O. (Hrsg.): *Herausforderung Utility 4.0*, 2017
	Publications in the context of the project “Digitalization of the energy transition: Barometers and top topics” of the Federal Ministry for Economic Affairs and Energy

MBW-EW - Business Administration (Energy Management)

Module XII - Business Model Development for the Energy Industry

Module-No.:	**Courses:**	Methods of Business Model Develpment
MBW-EW-12		Digital Business Models

Responsible for Module	Prof. Dr. Grandel

Study Phase:	-	**Hours per Week:**	4 SWS
Semester:	3	**Workload:**	180 Hrs.
Module Duration	1 Semester	**Credit Points:**	6 LP
Status:	Required Module	**Examination Performance:**	Study Paper(s)
Cycle:	Each Semester	**Weighting for overall grade**	6 x

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
60 Hrs.	0 Hrs.	120 Hrs.	Study Paper(s)

Hrs.-Information in industries minutes; no time minutes

Short description of module:

The energy industry is in a fundamental upheaval, in particular, due to the increasing share of renewable energies. This is intensified by the megatrend of digital transformation. Existing business models (BM) have to be adapted and new business models emerge.

Companies in the energy industry will increasingly have to become drivers of innovation to survive in the changing energy market. This requires both new ideas that create customer benefits and the competence to translate them into viable business models. The advancing digitalization enables increasingly successful new services or products to be established on the market.

The module prepares the participants specifically for developing new, especially digital business models and successfully introducing them to the market. Methodological competence, as well as process and leadership competence, is expanded.

In the course “Methods of Business Model Development”, concepts and frameworks for developing business models are taught. The students also learn how companies plan innovations systematically and in a networked manner, and convert them into products and services.

In the course “Digital Business Models”, the concepts and methods learned are consolidated and expanded using examples from practice.

Links between the module and other courses and modules

In terms of content, the module builds on the technical principles presented in the “Digitalization of the Energy Industry” module. “Business Model Development for the Energy Industry” conveys how these IT-technical possibilities can be converted into a successful business model.

The module also requires basic knowledge of strategic management and entrepreneurship. These are conveyed, for example, in “Module X: Strategic Management” from the Bachelor’s Degree in Business Administration (Energy Management).

Studiability for other degree programmes:

Business management knowledge at least at the level of a completed 1st phase of study (comparable to a “foundation course” at other universities) as well as proven prior knowledge in the field of entrepreneurship and energy management, as conveyed, for example, in the Bachelor’s Degree in Business Administration (Energy Management).

MBW-EW - Business Administration (Energy Management)

Course:	Methods of Business Model Development	Course-Code:
		MBW-EW-12.1

Responsible for Module	Prof. Dr. Grandel

Study Phase:	-	**Hours per Week:**	2 SWS
Semester:	3	**Workload:**	90 Hrs.
Module Duration	Required Course	**Credit Points:**	3 LP
Cycle:	Each Semester	**Examination Performance:**	Study Paper(s) / with Digital Business Models
Language of Instruction:	German		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
30 Hrs.	0 Hrs.	60 Hrs.	Study Paper(s)

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

The course ties in with the courses on the development and analysis of business models in bachelor's degree courses, such as the "Entrepreneurship" (Module X) course in the Energy Management (BA) course. If students without prior knowledge are among the participants, the lecturer will give an introduction to the relevant business and accounting issues at the appropriate point. The event also builds heavily on Module XI "Digitalization of the Energy Industry".

Qualification objectives:

The students get to know concepts and frameworks for the development and critical analysis of digitally shaped business models (BM). These BM's are based both on efficiency increases in the process design up to the customer, and on new communication channels to and from the customer. New BMs also result from new technologies (big data, artificial intelligence, blockchain, etc.), as well as from the linking of previously separated fields of activity of (energy) companies (sector coupling). The students learn the processes and methods companies use to systematically plan innovations and BMs and convert them into successful products and services. After successfully completing this course, the students will know various strategies for new and established companies to develop new business models. Furthermore, they know the requirements and ways of implementing these organizationally in the company.

Course contents:

- Business model concept (definition of a BM, purpose of a BM, components of a BM)
- The problem of disruptive business models in established companies ("The innovator's dilemma")
- Methods and approaches for BM development (e.g. Business Model Canvas and Business Model Navigator)
- Methods of technology and innovation management (e.g. open innovation)
- Strategies and organizational forms for the generation and establishment of innovations and new BMs (e.g. spin-offs, acquisition of start-ups, internal ideas competitions, etc.)

Teaching and study methods:	Seminar-like lessons, practical case studies, written working documents for the working through case studies independently
Course material:	Script and handouts online in ILIAS, current market studies, analyses, and specialist articles are made available in good time.
Recommended study literature:	Osterwalder, A. / Pigneur, Y.: *Business Model Generation*, Campus Verlag, 2011
	Doleski, O. (Hrsg.): *Herausforderung Utility 4.0*, Redline Verlag, 2017
	Nagel, A. / Bozem, K. (Hrsg.): *Geschäftsmodelle 4.0*, Springer Verlag, 2018

MBW-EW - Business Administration (Energy Management)

Course:	Digitale Business Models	Course-Code:
		MBW-EW-12.2

Responsible for Module	Prof. Dr. Grandel

Study Phase:	-	**Hours per Week:**	2 SWS
Semester:	3	**Workload:**	90 Hrs.
Module Duration	Required Course	**Credit Points:**	3 LP
Cycle:	Each Semester	**Examination Performance:**	Study Paper(s) / with Methos of Business Model Development
Language of Instruction:	German		

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
30 Hrs.	0 Hrs.	60 Hrs.	Study Paper(s)

Hrs.-Information in industries minutes; no time minutes

Prerequisites:

The content of the event is very closely coordinated with the course “Methods of Business Model Development”. The same prerequisites, therefore, apply, in particular, a good understanding of business models as well as the approaches to and possibilities of digitalization.

Qualification objectives:

The students get to know the specific characteristics and peculiarities of digital business models. Particular focus is placed on the functionality of digital platforms. Using specific examples, the students analyze and evaluate digital business models. They will learn to assess which digitalization approaches can be used successfully. They can understand how these business models work and place them in the context of the energy industry. They recognize the extent to which the current regulatory framework restricts possible business models and can make suggestions for improvement. In case studies, the students independently develop digital business models in the energy industry and present them to their fellow students in a structured manner.

Course contents:

- Requirement for new business models in the energy industry through digitalization and sector coupling.
- Properties and functionality of digital platforms, especially the network effects.
- Analysis, discussion, and assessment of the success of new business models from established and new players. In particular, business models based on the optimized control of consumption, generation, and storage, e.g. in smart homes, smart grids, and electromobility are considered.
- Presentation of new business models with the Business Model Canvas

Teaching and study methods:	Lecture, practical case examples, written working documents for working independently on the case studies
Course material:	Script and handouts online in ILIAS
Recommended study literature:	Meinhardt S. / Pflaum A. (Hrsg.): *Digitale Geschäftsmodelle*, Band 1 und Band 2, Springer Verlag, 2019
	Wiesche M., et. al.: *Management digitaler Plattformen*, Springer Verlag, 2018

HBC. HOCHSCHULE BIBERACH UNIVERSITY OF APPLIED SCIENCES

MBW-EW - Business Administration (Energy Management)

Thesis

Module-No.:	Courses: Master Thesis
MBWL-EW-TH	

Responsible for Module	Each Supervising Professor

Study Phase:	-	**Hours per Week:**	-
Semester:	3	**Workload:**	510 Hrs.
Module Duration	1 Semester	**Credit Points:**	17 LP
Status:	Required Module	**Examination Performance:**	Thesis
Cycle:	Each Semester	**Weighting for overall grade**	17 x

Distribution oft he Workload:

On-Campus-Study	Excursion	Self-Study	Examination Performance
-	-	510 Hrs.	Thesis

Hrs.-Information in industries minutes; no time minutes

Short Description of / Connecting oft eh module to other courses and modules:

The course is completed when all module / sub-module exams including the master's thesis have been passed. Any student who has passed at least eight modules can register for the master's thesis. They have four months to complete it. An extension of the time limit is only possible in exceptional cases on request and only for a maximum of two months. The reason for the application must be made in writing. The supervising professor decides whether to accept or deny the application. The reason must be credible. In the event of illness, a medical certificate can be requested.

With the master's thesis, the student should prove their ability to work independently and scientifically on a topic, both in its technical details and in the interdisciplinary contexts, on the basis of the specialist knowledge and methodological competence acquired in the previous semesters. The latter includes the examination and critical evaluation of the relevant specialist literature and the examination of the methods used in practice.

The master's thesis is a specialist in-depth study of one or more study modules and also often builds on the professional experience of the participants. The allocation of topics takes place in close coordination between the student and their supervisor. This could be a professor from their faculty or another faculty – possibly in collaboration with a lecturer. During the preparation of the thesis, which often contains company-specific questions and is written in cooperation with companies from a wide variety of industries, the supervisor is available to support the student. The structure and outline of the work as well as subject-specific technical and factual problems that arise in the context of the preparation of a more extensive scientific written work are discussed on an ongoing basis.

The bachelor's thesis usually ends with a final interview between the supervising professor and the student. The form and content of the final discussion are determined by the supervising professor.

Studiability for other degree programmes:

The module is designed as a thesis in the course and can only be connected in special cases.

Recommended study literature:	Diesterer, G.: *Studienarbeiten schreiben*, 6th edition, Springer publisher, 2011
	Theisen, M.R.: *Wissenschaftliches Arbeiten: Technik – Methodik – Form*, 17th edition, Franz Vahlen publisher, 2017
	Course Business Administration (Construction and Real Estate) (Ed.): *Leitfaden Wissenschaftliches Arbeiten*, guideline, latest version