Business Administration

Master of Science

University of Applied Sciences Biberach

Focus:
- Construction and Real Estate
- Energy Management

– Module Handbook –

SPO MBW from WS 16-17 PO4 (Amended statutes 2026.04.15) from 2026-03

Hochschule Biberach.
University of Applied Sciences

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MBW-Tabel of Contents

Timetable MBW

Timetable
Master / M.Sc.

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

Module / Cources		Semester / LP			SWS	Presence	Präsenz	Selfstudi	Examination performance			Grade weightin		Language	
Semester		1	2	3	Semester weeks hours	30 Std. * ECTS	SWS * 15	Workl. minus Präsenz	Pr.V.	Art	Min.	EG	MG	dt	engl
Focus	Construction and Real Estate														
Module BI-01	**Construction and Real Estate Markets**														
BI-01.1	Construction and Real Estate Markets	5			4	150 Std.	60 Std.	90 Std.	-	St	-	-	**5**	dt	-
Module BI-02	**Real Estate Project Development**														
BI-02.1	Real Estate Project Development	5			4	150 Std.	60 Std.	90 Std.	-	St	-	-	**5**	dt	-
Module BI-03	**Taxes and Accounting**														
BI-03.1	Taxation of Construction and Real Estate Projects	3			2	90 Std.	30 Std.	60 Std.	-	K	120	-	**6**	dt	-
BI-03.2	Accounting in the Construction and Real Estate Industry	3			2	90 Std.	30 Std.	60 Std.	-					dt	-
Module BI-04	**Corporate Governance**														
BI-04.1	Organisational Behaviour and Leadership *	2			2	60 Std.	30 Std.	30 Std.	-	PF	-	2	**6**	-	engl
BI-04.2	Strategic Management *	4			4	120 Std.	60 Std.	60 Std.	-	PF	-	4		dt	-
Module BI-05	**Contracts in the Construction and Real Estate Industry**														
BI-05.1	Contracts in the Construction and Real Estate Industry	5			4	150 Std.	60 Std.	90 Std.	-	K	90	-	**5**	dt	-
Module BI-06	**Real Estate Valuation and Asset Management**														
BI-06.1	International Real Estate Valuation and Markets	3			2	90 Std.	30 Std.	60 Std.	-	PF	-	3	**8**	dt	-
BI-06.2	Asset and Portfolio Management *		5		4	150 Std.	60 Std.	90 Std.	-	PF	-	5		dt	-
Module BI-07	**Construction and Real Estate Economic Seminar**														
BI-07.1	Construction and Real Estate Economic Seminar		5		4	150 Std.	60 Std.	90 Std.	-	St	-	-	**5**	dt	-
Module BI-08	**Management-Skills**														
BI-08.1	Customer and Investor Relationship *		2		2	60 Std.	30 Std.	30 Std.	-	m.Pr.	15	2	**6**	-	engl
BI-08.2	Englisch - Negotiation *		4		4	120 Std.	60 Std.	60 Std.	-	m.Pr.	15	4		-	engl
Module BI-09	**Interdisciplinary Project Work**														
BI-09.1	Interdisciplinary Project Work *		6		4	180 Std.	60 Std.	120 Std.	-	PA	-	-	**6**	dt	-
Module BI-10	**Real Estate Investment and Financing**														
BI-10.1	Investment Appraisal and Quantitative Methods *		3		2	90 Std.	30 Std.	60 Std.	-	K	120	6	**11**	dt	-
BI-10.2	Individual and Portfolio Investments		3		2	90 Std.	30 Std.	60 Std.	-					dt	-
BI-10.3	National and International Real Estate Financing			5	4	150 Std.	60 Std.	90 Std.	-	K	90	5		dt	-
Module BI-11	**Sustainability and Information Systems**														
BI-11.1	Information and Communication Systems *		2		2	60 Std.	30 Std.	30 Std.	-	K	60	2	**5**	dt	-
BI-11.2	Green Building and Life Cycle Costs			3	2	90 Std.	30 Std.	60 Std.	-	St	-	3		dt	-
Module BI-12	**Construction Management**														
BI-12.1	Claim Management			2	2	60 Std.	30 Std.	30 Std.	-	St	-	-	**5**	dt	-
BI -12.2	Success Factors of Project Management			3	2	90 Std.	30 Std.	60 Std.	-					dt	-
Module BI-TH	**Thesis**														
BI-TH	Master Thesis			17		510 Std.	0 Std.	510 Std.	-	-	-	-	**17**	dt	engl
Total	**LP** MBW-BI	30	30	30	**90**										
Total	**SWS** MBW-BI	24	24	10	**58**										
Total	**Workload (Std.)** MBW-BI	900	900	900	**2700**										
Total	**Presence (Std.)** MBW-BI	360	360	150	**870**										
Total	**Selfstudy (Std.)** MBW-BI	540	540	750	**1830**										

EG	Individual weighting	WPM	Compulsory elective module	K	Exam
MG	Multiple weighting for the overall grade	TN	Proof(s) of attendance	m.Pr.	Oral examination
Std	Hours	T	Proof(s) of activity	PA	Project work(s) - term paper, presentation, essay,
Pr	Examination	B	Report(s)		learning diary/portfolio and/or presentation
LP	ECTS	SWS	Semester hours per week	St	Student research project(s) - term paper, presentation, essay,
Pr.V.	Examination performance	LA	Learning Agreement		learning diary/portfolio and/or presentation
Tut	Tutorial	AE/Anerk	Recognition	Lab	Laboratory work
		TH	Thesis	HA	Term paper
dt	German			Ref	Unit
engl	English			Präs	Presentation
				PF	Portfolio Review

* Cross-focus | colored background = cross-focus clarification
** Acceptance of the examination performance according to the Transcript of Records (TR)
[] Awarding of the LP is contingent upon passing Coursework for the following semester

Timetable
Master / M.Sc.

Business Administration
Focus - Energy Management (MBW-EW)

Module / Cources		Semester / LP			SWS	Presence	Präsenz	Selfstudi	Examination performance			Grade weightin		Language	
Semester		1	2	3	Semester weeks hours	30 Std. * ECTS	SWS * 15	Workl. minus Präsenz	Pr.V.	Art	Min.	EG	MG	dt	engl
Focus	Energy Management														
Module EW-01	**International Energy Policy**														
EW-01.1	Internationale Energy Policy Analysis	3			2	90 Std.	30 Std.	60 Std.	-	St	-	3	**5**	dt	-
EW-01.2	Environmental and Resource Economics	2			2	60 Std.	30 Std.	30 Std.	-	K	90	2		dt	-
Module EW-02	**Energy Markets and Energy Products**														
EW-02.1	Global Commodity Markets and Structured Energy Derivates	2			2	60 Std.	30 Std.	30 Std.	-	K	60	2	**5**	-	engl
EW-02.2	Short-term and Flexibility Markets for Electricity and Gas	3			2	90 Std.	30 Std.	60 Std.	-	m.Pr.	25	3		-	engl
Module EW-03	**European and National Energy Law**														
EW-03.1	Case Studies on Energy Law	5			4	150 Std.	60 Std.	90 Std.	-	St	-	-	**5**	dt	-
Module EW-04	**Corporate Governance**														
EW-04.1	Organisational Behaviour und Leadership *	2			2	60 Std.	30 Std.	30 Std.	-	PF	-	2	**6**	-	engl
EW-04.2	Strategic Management *	4			4	120 Std.	60 Std.	60 Std.	-	PF	-	4		dt	-
Module EW-05	**International Energy Projects and Contracting**														
EW-05.1	Management of International Energy Projects	[3]			2	90 Std.	30 Std.	60 Std.	-	K	120	-	**5**	-	engl.
EW-05.2	Claim Management in Energy Projects		2		2	60 Std.	30 Std.	30 Std.	-					-	engl.
Module EW-06	**Risk and Asset Management**														
EW-06.1	Risk Management	3			2	90 Std.	30 Std.	60 Std.	-	St	-	3	**8**	dt	engl
EW-06.2	Asset and Portfolio Management *		5		4	150 Std.	60 Std.	90 Std.	-	PF	-	5		dt	-
Module EW-07	**Energy Economics Seminar**														
EW-07.1	Energy Economics Seminar 1	3			2	90 Std.	30 Std.	60 Std.	-	St	-	3	**6**	dt	-
EW-07.2	Energy Economics Seminar 2		3		2	90 Std.	30 Std.	60 Std.	-	St	-	3		dt	-
Module EW-08	**Management-Skills**														
EW-08.1	Customer and Investor Relationship *		2		2	60 Std.	30 Std.	30 Std.	-	m.Pr.	15	2	**6**	-	engl
EW-08.2	Englisch - Negotiation *		4		4	120 Std.	60 Std.	60 Std.	-	m.Pr.	15	4		-	engl
Module EW-09	**Interdisciplinary Project Work**														
EW-09.1	Interdisciplinary Project Work *		6		4	180 Std.	60 Std.	120 Std.	-	PA	-	-	**6**	dt	-
Module EW-10	**Financing**														
EW-10.1	Investment Appraisal and Quantitative Methods *		3		2	90 Std.	30 Std.	60 Std.	-	K	60	3	**8**	dt	-
EW-10.2	Financing of Energy Projects and Ventures			5	4	150 Std.	60 Std.	90 Std.	-	St	-	5		-	engl
Module EW-11	**Digitalization of the Energy Industry**														
EW-11.1	Information and Communication Systems *		2		2	60 Std.	30 Std.	30 Std.	-	K	60	2		dt	-
EW-11.2	IT Deployment in the Energy Market, Big Data, IoT		[3]		2	90 Std.	30 Std.	60 Std.	-	St	-	5	**7**	-	engl
EW-11.3	Digitalisation Trends in the Energy Industry			2	2	60 Std.	30 Std.	30 Std.	-					-	engl
Module EW-12	**Business Model Development for the Energy Industry**														
EW-12.1	Methods of Business Model Development			3	2	90 Std.	30 Std.	60 Std.	-	St	-	-	**6**	-	engl
EWI-12.2	Digital Business Models			3	2	90 Std.	30 Std.	60 Std.	-					-	engl
Module EW-TH	**Thesis**														
EW-TH	Master Thesis			17		510 Std.	0 Std.	510 Std.	-	-	-	-	**17**	dt	engl
Total	**LP** MBW-EW	30	30	30	**90**										
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Total	**Selbststudium (Std.)** MBW-EW	540	540	750	**1830**										

EG	Individual weighting	WPM	Compulsory elective module	K	Exam
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		TH	Thesis	HA	Term paper
dt	German			Ref	Unit
engl	English			Präs	Presentation
				PF	Portfolio Review
*	Cross-focus | colored background = cross-focus clarification			[]	Awarding of the LP is contingent upon passing
**	Acceptance of the examination performance according to the Transcript of Records (TR)				Coursework for the following semester

Focus Construction and Real Estate

Module BI-01 – Construction and Real Estate Markets	
Course	**01.1 Construction and Real Estate Markets**

Module responsible:	Prof. Hornuff

Study section:	-	**Credit Points**	5 LP
Curriculum semester:	1	**Semester hours per week:**	4 SWS
Module duration:	one Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	-
Tur:	each Semester	**Type of examination:**	Student research project
Language of instruction:	German		

The breakdown of the total workload can be found in the course schedule | Subject to change

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
	Study literature is provided on a semester-by-semester basis.
Course material:	Lecture notes available online in ILIAS, market reports from the construction and real estate sectors will be provided during the lecture.
Studiability for other degree programs:	The module can also be attended by students on the Biberach University of Applied Sciences architecture, civil engineering, and project management degree courses.

Module BI-02 – Real Estate Project Development	
Lehrveranstaltung	**02.1 Real Estate Project Development**

Module responsible:	Prof. Heyser

Study section:	-	**Credit Points**	5 LP
Curriculum semester:	1	**Semester hours per week:**	4 SWS
Module duration:	one Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	-
Tur:	each Semester	**Type of examination:**	Student research project
Language of instruction:	German		

The breakdown of the total workload can be found in the course schedule | Subject to change

Prerequisites:

The knowledge gained in the course "Practical Studies in Project Development" in the Bachelor's program in Business Administration is helpful for students taking the course "Real Estate Project Development," but it is not a prerequisite.

Qualification objectives:

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
	Study literature is provided on a semester-by-semester basis.
Course material:	Case studies will be provided in the lecture
Studiability for other degree programs:	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.

Module BI-03 – Taxes and Accounting	
Lehrveranstaltung	**BI-03.1 Taxation of Construction and Real Estate Projects**

Module responsible:	Prof. Girlich

Study section:	-	**Credit Points**	3 LP
Curriculum semester:	1	**Semester hours per week:**	2 SWS
Module duration:	one Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	120 Min.
Tur:	each Semester	**Type of examination:**	Exam together with BI-03.2 Accounting in the Construction and Real Estate Industry
Language of instruction:	German		

The breakdown of the total workload can be found in the course schedule | Subject to change

Prerequisites:

A basic understanding of the German tax system, as taught in the course "Business Taxation" in the Bachelor's program in Business Administration, is required.

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
	Study literature is provided on a semester-by-semester basis.
Course material:	Lecture notes online in ILIAS, exercises, and case studies are made available in the course.
Studiability for other degree programs:	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.

Module BI-03 – Taxes and Accounting	
Lehrveranstaltung	**BI-03.2 Accounting in the Construction and Real Estate Industry**

Module responsible:	Prof. Girlich

Study section:	-	**Credit Points**	3 LP
Curriculum semester:	1	**Semester hours per week:**	2 SWS
Module duration:	one Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	120 Min.
Tur:	each Semester	**Type of examination:**	Exam togetzer with BI-03.1 Taxation of Construction and Real Estate Projects
Language of instruction:	German		

The breakdown of the total workload can be found in the course schedule | Subject to change

Prerequisites:

This course assumes knowledge equivalent to that covered in the courses “Introduction to Accounting” and “Financial Reporting and Taxation” in the Bachelor’s program in Business Administration.

Qualification objectives:

The students acquire in-depth knowledge on the subject of accounting in companies, in particular, in the area of ac-counting 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
	Study literature is provided on a semester-by-semester basis.
Course material:	Lecture notes online in ILIAS, exercises, and case studies are made available in the course.
Studiability for other degree programs:	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.

Module BI-04 – Corporate Governance	
Lehrveranstaltung	**BI-04.1 Organisational Behavior and Leadership ***

Module responsible:	Prof. Weilepp

Study section:	-	**Credit Points**	2 LP
Curriculum semester:	1	**Semester hours per week:**	2 SWS
Module duration:	one Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	-
Tur:	each Semester	**Type of examination:**	Portfolio Review
Language of instruction:	English		

The breakdown of the total workload can be found in the course schedule | Subject to change

Prerequisites:

No formal prerequisites , but basic knowledge of the both undergraduate courses “Organisation und Management“ as well as “Personalwesen“ (Module XX / Bachelor Degree Business Administration).

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
- Function of Management
- Approaches to Leadership and Management
- Power and Authority
- Individual behavior at work
- Personality
- Perception
- Leading Teams and Groups
- Leadership and Motivation
- Organisational Culture
- Organisational 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
	Study literature is provided on a semester-by-semester basis.
Course material:	Slides will be electronically in ILIAS
Studiability for other degree programs:	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.

Module BI-04 – Corporate Governance	
Lehrveranstaltung	**BI-04.2 Strategic Management ***

Module responsible:	Prof. Weilepp

Study section:	-	**Credit Points**	4 LP
Curriculum semester:	1	**Semester hours per week:**	4 SWS
Module duration:	one Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	-
Tur:	each Semester	**Type of examination:**	Portfolio Review
Language of instruction:	German		

The breakdown of the total workload can be found in the course schedule | Subject to change

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
	Study literature is provided on a semester-by-semester basis.
Course material:	Script and templates; Manual for the Blue Ocean Strategy Simulation Business Game
Studiability for other degree programs:	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.

Module BI-05 – Contracts in the Construction and Real Estate Industry	
Lehrveranstaltung	**BI-05.1 Contracts in the Construction and Real Estate Industry**

Module responsible:	Prof. Geiger

Study section:	-	**Credit Points**	5 LP
Curriculum semester:	1	**Semester hours per week:**	4 SWS
Module duration:	one Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	90 Min.
Tur:	each Semester	**Type of examination:**	Exam
Language of instruction:	German		

The breakdown of the total workload can be found in the course schedule | Subject to change

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 Ger-man 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 man-agers
- 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
	Study literature is provided on a semester-by-semester basis.
Course material:	Script online in ILIAS, sample texts, cases with solutions to accompany the script, current publications from legal journals, legal texts
Studiability for other degree programs:	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.

Module BI-06 – Real Estate Valuation and Asset Management	
Lehrveranstaltung	**BI-06.1 International Real Estate Valuation and Markets**

Module responsible:	Prof. Ulreich

Study section:	-	**Credit Points**	3 LP
Curriculum semester:	1	**Semester hours per week:**	2 SWS
Module duration:	two Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	-
Tur:	each Semester	**Type of examination:**	Portfolio Review
Language of instruction:	German		

The breakdown of the total workload can be found in the course schedule | Subject to change

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)
	Study literature is provided on a semester-by-semester basis.
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
Studiability for other degree programs:	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 pro-cessing is an essential part of this training.

Module BI-06 – Real Estate Valuation and Asset Management	
Lehrveranstaltung	**BI-06.2 Asset and Portfolio Management ***

Module responsible:	Prof. Ulreich

Study section:	-	**Credit Points**	5 LP
Curriculum semester:	2	**Semester hours per week:**	4 SWS
Module duration:	two Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	-
Tur:	each Semester	**Type of examination:**	Portfolio Review
Language of instruction:	German		

The breakdown of the total workload can be found in the course schedule | Subject to change

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 prob-ability 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 portfo-lio 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 eco-nomic 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 portfo-lios, capital asset pricing model)
- Special aspects of behavioural finance theory and the associated risk profiles of clients and ethics-oriented dis-cussion 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, re-porting obligations, concepts such as CPPI, option and duration strategies)

Teaching and study methods:	Lecture, self-study, real-life simulation with dialogue situations, presentations Study literature is provided on a semester-by-semester basis.
Course material:	All documents (videos, texts, exercises, ...) are provided by the course team
Studiability for other degree programs:	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 pro-cessing is an essential part of this training.

Module BI-07 – Construction and Real Estate Economic Seminar	
Lehrveranstaltung	**BI-07.1 Construction and Real Estate Economic Seminar**

Module responsible:	Prof. Heyser

Study section:	-	**Credit Points**	5 LP
Curriculum semester:	2	**Semester hours per week:**	4 SWS
Module duration:	one Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	-
Tur:	each Semester	**Type of examination:**	Student research project
Language of instruction:	German		

The breakdown of the total workload can be found in the course schedule | Subject to change

Prerequisites:

A prerequisite for the construction management track is a basic understanding of "Construction and Building Technology," "Construction Pricing and Costs," and "Construction Management," as taught in the Bachelor's program in Business Administration or another construction-related program, or as acquired through personal practical experience. In the real estate management track, students should have basic knowledge in at least two of the following areas: portfolio theory, real estate economics, valuation, real estate law, and taxation. They should already be able to independently classify properties in terms of their future use and have gained initial experience in giving presentations.

Qualification objectives:

Technical due diligence 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 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 leader-ship 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 "Construction Management". In addition, during the semester the lecturer gives lectures on special 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
	Study literature is provided on a semester-by-semester basis.
Course material:	Lecture notes online in ILIAS, handouts
Studiability for other degree programs:	This module introduces even those academics with little prior background in the field to the practical application of the "economic toolkit" in areas such as market valuations, investment processes, and building stock analyses—through on-site visits with real estate and construction companies, as well as interactive and group work.

Module BI-08 – Management-Skills	
Lehrveranstaltung	**BI-08.1 Customer and Investor Relationship ***

Module responsible:	Prof. Heyser

Study section:	-	**Credit Points**	2 LP
Curriculum semester:	2	**Semester hours per week:**	2 SWS
Module duration:	one Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	15 Min.
Tur:	each Semester	**Type of examination:**	Oral examination
Language of instruction:	English		

The breakdown of the total workload can be found in the course schedule | Subject to change

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
	Study literature is provided on a semester-by-semester basis.
Course material:	Lecture notes, readings, personal contributions
Studiability for other degree programs:	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.

Module BI-08 – Management-Skills	
Lehrveranstaltung	**BI-08.2 Englisch – Negotiation ***

Module responsible:	Prof. Heyser

Study section:	-	**Credit Points**	4 LP
Curriculum semester:	2	**Semester hours per week:**	4 SWS
Module duration:	one Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	15 Min.
Tur:	each Semester	**Type of examination:**	Oral examination
Language of instruction:	English		

The breakdown of the total workload can be found in the course schedule | Subject to change

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 stu-dents, exercises, presentations and project work
	Study literature is provided on a semester-by-semester basis.
Course material:	Lecture notes online in ILIAS
Studiability for other degree programs:	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.

Module BI-09 – Interdisciplinary Project Work	
Lehrveranstaltung	**BI-09.1 Interdisciplinary Project Work ***

Module responsible:	Prof. Beyerle

Study section:	-	**Credit Points**	6 LP
Curriculum semester:	2	**Semester hours per week:**	4 SWS
Module duration:	one Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	-
Tur:	each Semester	**Type of examination:**	Project workExam
Language of instruction:	German		

The breakdown of the total workload can be found in the course schedule | Subject to change

Prerequisites:

The "Business Management" module provides the foundation for successful project work. Knowledge of the "Academic Writing and Presentation Skills" module from the Bachelor's program in Business Administration is required and is not covered in this 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 de-cisionmaking)
- 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 Study literature is provided on a semester-by-semester basis.
Course material:	Lecture materials online in ILIAS
Studiability for other degree programs:	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)

Module BI-10 – Real Estate Investment and Financing	
Lehrveranstaltung	**BI-10.1 Investment Appraisal and Quantitative Methods ***

Module responsible:	Prof. Lassen

Study section:	-	**Credit Points**	3 LP
Curriculum semester:	2	**Semester hours per week:**	2 SWS
Module duration:	two Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	120 Min.
Tur:	each Semester	**Type of examination:**	Exam together with BI-10.2 Individual and Portfolio Investments
Language of instruction:	German		

The breakdown of the total workload can be found in the course schedule | Subject to change

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 program 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
	Study literature is provided on a semester-by-semester basis.
Course material:	All documents (videos, texts, exercises, ...) are provided by the course team
Studiability for other degree programs:	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.

Module BI-10 – Real Estate Investment and Financing	
Lehrveranstaltung	**BI-10.2 Individual and Portfolio Investments**

Module responsible:	Prof. Lassen

Study section:	-	**Credit Points**	3 LP
Curriculum semester:	2	**Semester hours per week:**	2 SWS
Module duration:	two Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	120 Min.
Tur:	each Semester	**Type of examination:**	Exam together with BI-10.1 Investment Appraisal and Quantitative Methods
Language of instruction:	German		

The breakdown of the total workload can be found in the course schedule | Subject to change

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 program 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
	Study literature is provided on a semester-by-semester basis.
Course material:	All documents (presentations, scripts, texts, exercises, ...) are provided by the course team
Studiability for other degree programs:	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.

Module BI-10 – Real Estate Investment and Financing	
Lehrveranstaltung	**BI-10.3 National and International Real Estate Financing**

Module responsible:	Prof. Lassen

Study section:	-	**Credit Points**	5 LP
Curriculum semester:	3	**Semester hours per week:**	4 SWS
Module duration:	two Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	90 Min.
Tur:	each Semester	**Type of examination:**	Exam
Language of instruction:	German		

The breakdown of the total workload can be found in the course schedule | Subject to change

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" (Mod-ule 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 differ-ent 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 stu-dents 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 presen-tations
	Study literature is provided on a semester-by-semester basis.
Course material:	Lecture notes and exercise sheets online in ILIAS, current press and literature sources, commented PDF print screens and Excel worksheets
Studiability for other degree programs:	This module has demanding requirements from general business administration for financing and in-vestment. 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.

Module BI-11 – Sustainability and Information Systems	
Lehrveranstaltung	**BI-11.1 Informations- and Communication Systems ***

Module responsible:	Prof. Grandel

Study section:	-	**Credit Points**	2 LP
Curriculum semester:	2	**Semester hours per week:**	2 SWS
Module duration:	two Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	60 Min.
Tur:	each Semester	**Type of examination:**	Exam
Language of instruction:	German		

The breakdown of the total workload can be found in the course schedule | Subject to change

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 im-portance 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 bene-fits 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
	Study literature is provided on a semester-by-semester basis.
Course material:	Lecture notes and handouts online in ILIAS
Studiability for other degree programs:	The course is generally compatible with other courses, provided that the necessary requirements are met.

Module BI-11 – Sustainability and Information Systems	
Lehrveranstaltung	**BI-11.2 Green Building and Life Cycle Costs**

Module responsible:	Prof. Grandel

Study section:	-	**Credit Points**	3 LP
Curriculum semester:	3	**Semester hours per week:**	2 SWS
Module duration:	two Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	-
Tur:	each Semester	**Type of examination:**	Student research project
Language of instruction:	German		

The breakdown of the total workload can be found in the course schedule | Subject to change

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 as-sessing 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 mar-ket 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
	Study literature is provided on a semester-by-semester basis.
Course material:	Lecture notes online in ILIAS, handouts
Studiability for other degree programs:	The course is generally compatible with other courses, provided that the necessary requirements are met.

Module BI-12 – Construction Management	
Lehrveranstaltung	**BI-12.1 Claim Management**

Module responsible:	Prof. Hornuff

Study section:	-	**Credit Points**	2 LP
Curriculum semester:	3	**Semester hours per week:**	2 SWS
Module duration:	one Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	-
Tur:	each Semester	**Type of examination:**	Student research projekt together with BI-12.2 Succes Factors of Project Management
Language of instruction:	German		

The breakdown of the total workload can be found in the course schedule | Subject to change

Prerequisites:

Basic knowledge of the topics of costing and construction prices, service descriptions, construction contract law, pro-ject management according to German Construction Contract Procedures ("VOB"), and project management are rec-ommended. Participants with in-complete previous knowledge receive individual support.

Qualification objectives:

The course participants learn the basics of claim management as an interdisciplinary team task (construction man-agement, 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 sub-contractors. Skills and knowledge are also imparted for this point of view. Typical tasks in the area of claim manage-ment 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 judi-cial 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
	Study literature is provided on a semester-by-semester basis.
Course material:	Lecture notes online in ILIAS, handouts
Studiability for other degree programs:	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 manage-ment, and real estate management.

Module BI-12 – Construction Management	
Lehrveranstaltung	**BI-12.2 Success Factors of Project Management**

Module responsible:	Prof. Hornuff

Study section:	-	**Credit Points**	3 LP
Curriculum semester:	3	**Semester hours per week:**	2 SWS
Module duration:	one Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	-
Tur:	each Semester	**Type of examination:**	Student research project together with BI-12.1
Language of instruction:	German		Claim Management

The breakdown of the total workload can be found in the course schedule | Subject to change

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
	Study literature is provided on a semester-by-semester basis.
Course material:	Lecture notes online in ILIAS, handouts
Studiability for other degree programs:	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.

Module BI-TH – Thesis	
Lehrveranstaltung	**BI-TH Masterthesis**

Module responsible:	jeweils betreuende/r ProfessorIn

Study section:	-	**Credit Points**	17 LP
Curriculum semester:	3	**Semester hours per week:**	-
Module duration:	one Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	-
Tur:	each Semester	**Type of examination:**	Thesis
Language of instruction:	German / English		

The breakdown of the total workload can be found in the course schedule | Subject to change

Prerequisites:

The degree program is completed once all module and partial module exams, including the master's thesis, have been passed. Any student who has passed at least eight modules may register for the master's thesis. The completion period is four months. An extension of the completion period is possible only in exceptional cases, upon request, and for a maximum of two months. The request must be submitted in writing. The supervising professor decides on the request. The reason must be substantiated. In the event of illness, a medical certificate may be required.

Qualification objectives:

The master's thesis is intended to demonstrate the student's ability to independently and academically address a topic—both in terms of its specific subject-matter details and its interdisciplinary contexts—within a specified timeframe, drawing on the subject-specific knowledge and methodological skills acquired in previous semesters. The latter involves the examination and critical evaluation of relevant academic literature and an engagement with the methods applied in practice.

Course contents:

The thesis represents an in-depth exploration of one or more course modules and often builds upon the students' professional experience. The topic is assigned in close consultation between the student and the advisor. This may be a professor from the student's own faculty or another faculty—and, if necessary, in collaboration with a lecturer. During the preparation of the thesis, which often involves company-specific issues and is written in collaboration with companies from a wide range of industries, the advisor is available to support the student. The structure and organization of the thesis, as well as subject-specific technical and factual issues that arise during the preparation of a more extensive academic written work, are discussed on an ongoing basis.

The thesis typically concludes with a final review meeting between the supervising professor and the student. The format and content of the final review meeting are determined by the supervising professor.

Teaching and study methods:	custom
Course material:	custom
Studiability for other degree programs:	This module is designed as a capstone project for the degree program and can only be taken as a follow-up course in exceptional cases.

Focus Energy Management

Module EW-01 – International Energy Policy	
Lehrveranstaltung	**EW-01.1 International Energy Policy Analysis**

Module responsible:	Prof. Ulreich

Study section:	-	**Credit Points**	3 LP
Curriculum semester:	1	**Semester hours per week:**	2 SWS
Module duration:	one Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	-
Tur:	each Semester	**Type of examination:**	Student research project
Language of instruction:	German		

The breakdown of the total workload can be found in the course schedule | Subject to change

Prerequisites:

-

Qualification objectives:

The students know the theories of market and state failure as well as evaluation criteria to evaluate alternative strate-gies 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 ap-proaches 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
	Study literature is provided on a semester-by-semester basis.
Course material:	Script, worksheets distributed (some in English)
Studiability for other degree programs:	The module is basically suitable for business administration as well as energy and environmental engineering courses.

Module EW-01 – International Energy Policy	
Lehrveranstaltung	**EW-01.2 Environmental and Resource Economics**

Module responsible:	Prof. Ulreich

Study section:	-	**Credit Points**	2 LP
Curriculum semester:	1	**Semester hours per week:**	2 SWS
Module duration:	one Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	90 Min.
Tur:	each Semester	**Type of examination:**	Exam
Language of instruction:	German		

The breakdown of the total workload can be found in the course schedule | Subject to change

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 interven-tions and competently discuss partial analytical models for the analysis of environmental and resource economic is-sues and be able to formulate policy recommen-dations.

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 (sustain-able harvest path, bio-economic equilibrium, common pool problem

Teaching and study methods:	Lecture with integrated calculation examples and specialist discussions on current environ-mental policy events
	Study literature is provided on a semester-by-semester basis.
Course material:	Script online in ILIAS
Studiability for other degree programs:	The module is basically suitable for business administration as well as energy and environmental engineering courses.

Module EW-02 – Energy Markets and Energy Products	
Lehrveranstaltung	**EW-02.1 Global Commodity Markets and Structured Energy Derivates**

Module responsible:	Prof. Schaber

Study section:	-	**Credit Points**	2 LP
Curriculum semester:	1	**Semester hours per week:**	2 SWS
Module duration:	one Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	60 Min.
Tur:	each Semester	**Type of examination:**	Exam
Language of instruction:	English		

The breakdown of the total workload can be found in the course schedule | Subject to change

Prerequisites:

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

Qualification objectives:

Participants acquire a detailed understanding on how energy and commodities futures and options markets work. Students are able to 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 price and spread risks utilizing derivative products. Students also understand the pricing dynamics of energy term 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:	Course, exercises, case studies
	Study literature is provided on a semester-by-semester basis.
Course material:	Script, case studies
Studiability for other degree programs:	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.

Module EW-02 – Energy Markets and Energy Products	
Lehrveranstaltung	**EW-02.2 Short-term and Flexibility Markets for Electricity and Gas**

Module responsible:	Prof. Schaber

Study section:	-	**Credit Points**	3 LP
Curriculum semester:	1	**Semester hours per week:**	2 SWS
Module duration:	one Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	25 Min.
Tur:	each Semester	**Type of examination:**	Oral examination
Language of instruction:	English		

The breakdown of the total workload can be found in the course schedule | Subject to change

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 on 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 und volume swaps

Teaching and study methods:	Course, Study literature is provided on a semester-by-semester basis.
Course material:	Lecture notes available online in Ilias, with supplementary handouts as needed
Studiability for other degree programs:	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.

Module EW-03 – European and National Energy Law	
Lehrveranstaltung	**EW-03.1 Cace Studies on Energy Law**

Module responsible:	Prof. Dannecker

Study section:	-	**Credit Points**	5 LP
Curriculum semester:	1	**Semester hours per week:**	4 SWS
Module duration:	one Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	-
Tur:	each Semester	**Type of examination:**	Student research project
Language of instruction:	German		

The breakdown of the total workload can be found in the course schedule | Subject to change

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
	Study literature is provided on a semester-by-semester basis.
Course material:	Script online in ILIAS, if necessary, additional handouts
Studiability for other degree programs:	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 indus-try and background knowledge of the energy industry are required.

Module EW-04 – Corporate Governance	
Lehrveranstaltung	**EW-04.1 Organisational Behaviour und Leadership ***

Module responsible:	Prof. Weilepp

Study section:	-	**Credit Points**	2 LP
Curriculum semester:	1	**Semester hours per week:**	2 SWS
Module duration:	one Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	-
Tur:	each Semester	**Type of examination:**	Portfolio Review
Language of instruction:	English		

The breakdown of the total workload can be found in the course schedule | Subject to change

Prerequisites:

No formal prerequisites , but basic knowledge of the both undergraduate courses “Organisation und Management“ as well as “Personalwesen“ Bachelor Degree Business Administration.

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
- Function of Management
- Approaches to Leadership and Management
- Power and Authority
- Individual behavior at work
- Personality
- Perception
- Leading Teams and Groups
- Leadership and Motivation
- Organisational Culture
- Organisational 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
	Study literature is provided on a semester-by-semester basis.
Course material:	Slides will be electronically in ILIAS
Studiability for other degree programs:	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.

Module EW-04 – Corporate Governance	
Lehrveranstaltung	**EW-04.2 Strategic Management ***

Module responsible:	Prof. Weilepp

Study section:	-	**Credit Points**	4 LP
Curriculum semester:	1	**Semester hours per week:**	4 SWS
Module duration:	one Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	-
Tur:	each Semester	**Type of examination:**	Portfolio Review
Language of instruction:	German		

The breakdown of the total workload can be found in the course schedule | Subject to change

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 man-agement as well as knowledge and skills in handling the instruments of strategic corporate management. Both com-petitive 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 sci-ence approaches and be able to differentiate the behavioral science-inspired approaches of management from tradi-tional 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,

Teaching and study methods:	Lecture, case study work, simulation game
	Study literature is provided on a semester-by-semester basis.
Course material:	Script and templates; Manual for the Blue Ocean Strategy Simulation Business Game
Studiability for other degree programs:	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.

Module EW-05 – International Energy Projects and Contracting	
Lehrveranstaltung	**EW-05.1 Management of International Energy Projects**

Module responsible:	Prof. Rath

Study section:	-	**Credit Points**	3 LP
Curriculum semester:	1	**Semester hours per week:**	2 SWS
Module duration:	two Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	120 Min.
Tur:	each Semester	**Type of examination:**	Exam together with EW-05.2 Claim Management in Energy Projects
Language of instruction:	English		

The breakdown of the total workload can be found in the course schedule | Subject to change

Prerequisites:

Basic knowledge of "Fundamentals of the energy industry" (e.g. Module XI “Grundlagen der Energiewirtschaft” – Ba-chelor Degree Energy Management, Hochschule Biberach), of "Market participants of the energy industry" (e.g. Modu-le XIII “Marktteilnehmer der Energiewirtschaft” – Bachelor Degree Energy Management, Hochschule Biberach), of “Project Management” (e.g. Module XV “Pro-jektentwicklung und -management“ – Bachelor Degree Energy Manage-ment, Hochschule Biberach) and "Business Administration (e.g. Module IV “Betriebswirtschaft“ – Bachelor Degree Energy Management, Hochschule Biberach).

Qualification objectives:

Students become familiar with the global requirements of the energy market and with national and cultural differences of involved 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 per-sonal and team related attitudes for a successful project 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 "com-mitment" 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 pro-jects smoothly.
Project specific standards or methodological approaches comprise the multipurpose structuring of the project, an effective progress monitoring and decision making process 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 roleplays with the application of relevant methods for international project management.

Course contents:

- basics about 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:	Vorlesung, Praxisbeispiele, Übungen, Gruppenarbeiten Study literature is provided on a semester-by-semester basis.
Course material:	Skript online im ILIAS, ggf. ergänzende Handouts
Studiability for other degree programs:	The subject itself does not require too many prerequisites and hence can be chosen by all students in-terested in organ-izational and cultural aspects of large multinational (energy) projects. Student groups which could be interested might be studying civil engineering, energy engineering or project manage-ment.

Module EW-05 – International Energy Projects and Contracting	
Lehrveranstaltung	**EW-05.2 Claim Management in Energy Projects**

Module responsible:	Prof. Rath

Study section:	-	**Credit Points**	2 LP
Curriculum semester:	2	**Semester hours per week:**	2 SWS
Module duration:	two Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	120 Min.
Tur:	each Semester	**Type of examination:**	Exam together with EW-05.1 Management of International Energy Prjects
Language of instruction:	English		

The breakdown of the total workload can be found in the course schedule | Subject to change

Prerequisites:

”Management of International Energy Projects“ (Module V), Basic knowledge of "Fundamentals of the energy industry" (e.g. Module XI “Grundlagen der Energiewirtschaft” – Bachelor Degree Energy Management, Hochschule Biberach), of "Market participants of the energy industry" (e.g. Module XIII “Marktteilnehmer der Energiewirtschaft” – Bachelor Degree Energy Management, Hochschule Biberach), of “Project Management” (e.g. Module XV “Projektentwicklung und -management“ – Bachelor Degree Energy Management, Hochschule Biberach) and "Business Administration (e.g. Module IV “Betriebswirtschaft“ – Bachelor Degree Energy Management, Hochschule Biberach).

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 mar-gins are limited while in parallel project risks are significant. Variations to the originally planned project scope are nor-mal and often lead to dispute between contract parties and hence claim requests. Consequently a rigorous project management combined with an effective claim management are paramount for a successful and profitable project. The latter applies for 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 an effective risk monitoring in general.
Concrete means like the analysis of the critical path of the time 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 roleplays 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 of international Energy projects
- Process based Claim Management of international Energy projects across different project phase

Teaching and study methods:	Lectures, practical examples, exercises, group work Study literature is provided on a semester-by-semester basis.
Course material:	Script available online on ILIAS, with supplementary handouts as needed
Studiability for other degree programs:	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 which could be interested might be studying civil engineering, energy engineering or project management.

Module EW-06 – Risk and Asset Management	
Lehrveranstaltung	**EW-06.1 Risk Management**

Module responsible:	Prof. Ulreich

Study section:	-	**Credit Points**	3 LP
Curriculum semester:	1	**Semester hours per week:**	2 SWS
Module duration:	two Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	-
Tur:	each Semester	**Type of examination:**	Student research project
Language of instruction:	German / Englisch		

The breakdown of the total workload can be found in the course schedule | Subject to change

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 be 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 modelling of risk factors
- Simulation
- Energy risk management (buy side/sell side)
- Credit and operational risk

Teaching and study methods:	Course, exercises, case studies
	Study literature is provided on a semester-by-semester basis.
Course material:	Script, case studies
Studiability for other degree programs:	The module is suitable for students with bachelor's degrees in economics, mathematics, natural sci-ences, and engi-neering. Good knowledge of energy-related topics is required.

Module EW-06 – Risk and Asset Management	
Lehrveranstaltung	**EW-06.2 Asset and Portfolio Management ***

Module responsible:	Prof. Ulreich

Study section:	-	**Credit Points**	5 LP
Curriculum semester:	2	**Semester hours per week:**	4 SWS
Module duration:	two Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	-
Tur:	each Semester	**Type of examination:**	Portfolio Review
Language of instruction:	German		

The breakdown of the total workload can be found in the course schedule | Subject to change

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 prob-ability theory (random variables, expected value, variance, normal distribution). Such knowledge is taught, for example, in the corresponding courses of the Bachelor's degree program 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 eco-nomic 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 portfo-lios, capital asset pricing model)
- Special aspects of behavioural finance theory and the associated risk profiles of clients and ethics-oriented dis-cussion 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, re-porting obligations, concepts such as CPPI, option and duration strategies)

Teaching and study methods:	Lecture, self-study, real-life simulation with dialogue situations, presentations
	Study literature is provided on a semester-by-semester basis.
Course material:	All documents (videos, texts, exercises, ...) are provided by the course team
Studiability for other degree programs:	The module is suitable for students with bachelor’s degrees in economics, mathematics, natural sciences, and engi-neering. Good knowledge of energy-related topics is required.

Module EW-07 – Energy Economics Seminar	
Lehrveranstaltung	**EW-07.1 Energy Economics Seminar 1**

Module responsible:	Prof. Ulreich

Study section:	-	**Credit Points**	3 LP
Curriculum semester:	1	**Semester hours per week:**	2 SWS
Module duration:	two Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	-
Tur:	each Semester	**Type of examination:**	Student research project
Language of instruction:	German		

The breakdown of the total workload can be found in the course schedule | Subject to change

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
	Study literature is provided on a semester-by-semester basis.
Course material:	Script, presentations, specialist journals (et, StadtWerk, EM, etc.)
Studiability for other degree programs:	The module is basically suitable for business administration as well as energy and environmental engineering courses.

Module EW-07 – Energy Economics Seminar	
Lehrveranstaltung	**EW-07.2 Energy Economics Seminar 2**

Module responsible:	Prof. Ulreich

Study section:	-	**Credit Points**	3 LP
Curriculum semester:	2	**Semester hours per week:**	2 SWS
Module duration:	two Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	-
Tur:	each Semester	**Type of examination:**	Student research project
Language of instruction:	German		

The breakdown of the total workload can be found in the course schedule | Subject to change

Prerequisites:

The prerequisites are profound prior knowledge of business and energy management at the level of a previous bache-lor'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 nec-essary 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
	Study literature is provided on a semester-by-semester basis.
Course material:	Script, presentations, specialist journals (et, SadtWerk, EM, etc.), Internet research
Studiability for other degree programs:	Das Modul ist grundsätzlich für betriebswirtschaftliche sowie energie- und umwelttechnische Studiengänge geeignet.

Module EW-08 – Management-Skills	
Lehrveranstaltung	**EW-08.1 Customer and Investor Relationship ***

Module responsible:	Prof. Heyser

Study section:	-	**Credit Points**	2 LP
Curriculum semester:	2	**Semester hours per week:**	2 SWS
Module duration:	two Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	15 Min.
Tur:	each Semester	**Type of examination:**	Oral examination
Language of instruction:	English		

The breakdown of the total workload can be found in the course schedule | Subject to change

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 Study literature is provided on a semester-by-semester basis.
Course material:	Script, literature, personal contributions
Studiability for other degree programs:	The module develops communication skills in B2B processes on an abstract, practical, and intercultural level and pre-pares 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.

Module EW-08 – Management-Skills	
Lehrveranstaltung	**EW-08.2 Englisch – Negotiation ***

Module responsible:	Prof. Heyser

Study section:	-	**Credit Points**	4 LP
Curriculum semester:	2	**Semester hours per week:**	4 SWS
Module duration:	one Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	15 Min.
Tur:	each Semester	**Type of examination:**	Oral examination
Language of instruction:	English		

The breakdown of the total workload can be found in the course schedule | Subject to change

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 inde-pendently. 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
	Study literature is provided on a semester-by-semester basis.
Course material:	Lecture manuscript online in ILIAS
Studiability for other degree programs:	The module develops communication skills in B2B processes on an abstract, practical, and intercultural level and pre-pares 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.

Module EW-09 – Interdisciplinary Project Work	
Lehrveranstaltung	**EW-09.1 Interdisciplinary Project Work ***

Module responsible:	Prof. Beyerle

Study section:	-	**Credit Points**	6 LP
Curriculum semester:	2	**Semester hours per week:**	4 SWS
Module duration:	one Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	-
Tur:	each Semester	**Type of examination:**	Project work
Language of instruction:	German		

The breakdown of the total workload can be found in the course schedule | Subject to change

Prerequisites:

The "Business Management" module provides the foundation for successful project work. Knowledge of the "Academic Writing and Presentation Skills" module from the Bachelor's program in Business Administration is required and is not covered in this course.

Qualification objectives:

"Interdisciplinary project work" deals with selected practice-relevant topics from the construction, real estate, and ener-gy 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 neces-sary 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
	Study literature is provided on a semester-by-semester basis.
Course material:	Lecture materials online in ILIAS
Studiability for other degree programs:	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)

Module EW-10 – Financing	
Lehrveranstaltung	**EW-10.1 Investment Appraisal and Quantitative Methods ***

Module responsible:	Prof. Lassen

Study section:	-	**Credit Points**	3 LP
Curriculum semester:	2	**Semester hours per week:**	2 SWS
Module duration:	two Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	60 Min.
Tur:	each Semester	**Type of examination:**	Exam
Language of instruction:	German		

The breakdown of the total workload can be found in the course schedule | Subject to change

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 degree pro-gramme 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
	Study literature is provided on a semester-by-semester basis.
Course material:	All documents (videos, texts, exercises, ...) are provided by the course team
Studiability for other degree programs:	This module has demanding requirements from general business administration for financing invest-ments. 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.

Module EW-10 – Financing	
Lehrveranstaltung	**EW-10.2 Financing of Energy Projects and Ventures**

Module responsible:	Prof. Lassen

Study section:	-	**Credit Points**	5 LP
Curriculum semester:	3	**Semester hours per week:**	4 SWS
Module duration:	two Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	-
Tur:	each Semester	**Type of examination:**	Student research project
Language of instruction:	English		

The breakdown of the total workload can be found in the course schedule | Subject to change

Prerequisites:

Students have a basic understanding about 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 pro-jects 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 capitalist.

Course contents:

Financing of Energy Projects:

- Foundations of financing of energy projects
- Project finance and financial modelling
- 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
	Study literature is provided on a semester-by-semester basis.
Course material:	Script and templates; Manual for the Blue Ocean Strategy Simulation Business Game
Studiability for other degree programs:	This module has demanding requirements from general business administration for financing invest-ments. 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.

Module EW-11 – Digitalization of the Energy Industry	
Lehrveranstaltung	**EW-11.1 Information and Communication Systems ***

Module responsible:	Prof. Grandel

Study section:	-	**Credit Points**	2 LP
Curriculum semester:	2	**Semester hours per week:**	2 SWS
Module duration:	two Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	60 Min.
Tur:	each Semester	**Type of examination:**	Exam
Language of instruction:	German		

The breakdown of the total workload can be found in the course schedule | Subject to change

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 im-portance 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 bene-fits 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 work-ing through the case studies independently
	Study literature is provided on a semester-by-semester basis.
Course material:	Script and handouts online in ILIAS
Studiability for other degree programs:	The course is generally compatible with other courses, provided that the necessary requirements are met.

Module EW-11 – Digitalization of the Energy Industry	
Lehrveranstaltung	**EW-11.2 IT Development in the Energy Market, Big Data, IoT**

Module responsible:	Prof. Grandel

Study section:	-	**Credit Points**	3 LP
Curriculum semester:	2	**Semester hours per week:**	2 SWS
Module duration:	two Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	-
Tur:	each Semester	**Type of examination:**	Student research project together with EW-11.3 Digitalisation Trends in the Energy Industry
Language of instruction:	English		

The breakdown of the total workload can be found in the course schedule | Subject to change

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 lec-turer 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 Study literature is provided on a semester-by-semester basis.
Course material:	Script and handouts online in ILIAS, current market studies, analyses, and specialist articles are made available in good time.
Studiability for other degree programs:	The course is generally compatible with other courses, provided that the necessary requirements are met.

Module EW-11 – Digitalization of the Energy Industry	
Lehrveranstaltung	**EW-11.3 Digitalisaton Trends in the Energy Industry**

Module responsible:	Prof. Grandel

Study section:	-	**Credit Points**	2 LP
Curriculum semester:	3	**Semester hours per week:**	2 SWS
Module duration:	two Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	-
Tur:	each Semester	**Type of examination:**	Student research project together with EW-11.2 IT Deployment in the Energy Industry
Language of instruction:	English		

The breakdown of the total workload can be found in the course schedule | Subject to change

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 ap-propriate 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 digitaliza-tion 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
	Study literature is provided on a semester-by-semester basis.
Course material:	Script and handouts online in ILIAS, market studies, analyses, and specialist articles are made available in good time
Studiability for other degree programs:	The course is generally compatible with other courses, provided that the necessary requirements are met.

Module EW-12 – Business Model Development for the Energy Industry	
Lehrveranstaltung	**EW-12.1 Methods of Business Model Development**

Module responsible:	Prof. Grandel

Study section:	-	**Credit Points**	3 LP
Curriculum semester:	3	**Semester hours per week:**	2 SWS
Module duration:	one Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	-
Tur:	each Semester	**Type of examination:**	Student research project together with EW-12.2 Digital Business Models
Language of instruction:	English		

The breakdown of the total workload can be found in the course schedule | Subject to change

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 busi-ness 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
	Study literature is provided on a semester-by-semester basis.
Course material:	Script and handouts online in ILIAS, current market studies, analyses, and specialist articles are made available in good time
Studiability for other degree programs:	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 entrepre-neurship and energy management, as conveyed, for example, in the Bachelor's Degree in Business Ad-ministration (Energy Management).

Module EW-12 – Business Model Development for the Energy Industry	
Lehrveranstaltung	**EW-12.2 Digital Business Models**

Module responsible:	Prof. Grandel

Study section:	-	**Credit Points**	3 LP
Curriculum semester:	3	**Semester hours per week:**	2 SWS
Module duration:	one Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	-
Tur:	each Semester	**Type of examination:**	Student research project together with EW-12.1 Methods of Business Model Development
Language of instruction:	English		

The breakdown of the total workload can be found in the course schedule | Subject to change

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 busi-ness 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
	Study literature is provided on a semester-by-semester basis.
Course material:	Script and handouts online in ILIAS
Studiability for other degree programs:	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).

Module EW-TH – Thesis	
Lehrveranstaltung	**EW-TH Masterthesis**

Module responsible:	jeweils betreuende/r ProfessorIn

Study section:	-	**Credit Points**	17 LP
Curriculum semester:	3	**Semester hours per week:**	-
Module duration:	one Semester	**Examination prerequisite:**	-
Status:	Required course	**Examination duration:**	-
Tur:	each Semester	**Type of examination:**	Thesis
Language of instruction:	German / Englisch		

The breakdown of the total workload can be found in the course schedule | Subject to change

Prerequisites:

The degree program is completed once all module and partial module exams, including the master's thesis, have been passed. Any student who has passed at least eight modules may register for the master's thesis. The completion period is four months. An extension of the completion period is possible only in exceptional cases, upon request, and for a maximum of two months. The request must be submitted in writing. The supervising professor decides on the request. The reason must be substantiated. In the event of illness, a medical certificate may be required.

Qualification objectives:

The master's thesis is intended to demonstrate the student's ability to independently and academically address a topic—both in terms of its specific subject-matter details and its interdisciplinary contexts—within a specified timeframe, drawing on the subject-specific knowledge and methodological skills acquired in previous semesters. The latter involves the examination and critical evaluation of relevant academic literature and an engagement with the methods applied in practice.

Course contents:

The thesis represents an in-depth exploration of one or more course modules and often builds upon the students' professional experience. The topic is assigned in close consultation between the student and the advisor. This may be a professor from the student's own faculty or another faculty—and, if necessary, in collaboration with a lecturer. During the preparation of the thesis, which often involves company-specific issues and is written in collaboration with companies from a wide range of industries, the advisor is available to support the student. The structure and organization of the thesis, as well as subject-specific technical and factual issues that arise during the preparation of a more extensive academic written work, are discussed on an ongoing basis.

The thesis typically concludes with a final review meeting between the supervising professor and the student. The format and content of the final review meeting are determined by the supervising professor.

Teaching and study methods:	custom
Course material:	custom
Studiability for other degree programs:	This module is designed as a capstone project for the degree program and can only be taken as a follow-up course in exceptional cases.