

Module Catalogue

Part-time combined study programme:
Management for Engineering and Natural Sciences
(MBA)

Please note: The German version of this document is the legally binding version. The English translation provided here is for information purposes only.

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Contents

1.1	Annual Financial Statement Analysis	3
1.2	Management Skills	5
1.3	Business Law	7
1.4	Project Management.....	9
2.1	Controlling and Cost Management	11
2.2	Strategy & Innovation Management.....	13
2.3	Economics – International Economics	15
2.4	Business Intelligence	17
3.1	Investment and Financing Models	19
3.2	Marketing & Sales	21
3.3	Operations Management	23
3.4	Digital Process Management.....	25
4.1	Business Simulation.....	27
4.2	International Management (English)	29
4.3	Compulsory Elective Seminars: Marketing & Sales.....	32
4.4	Compulsory elective seminar: Operations Management	35
4.5	Project: Analysis and Strategy.....	37
5.	Master Thesis and Colloquium.....	39

1.1 Annual Financial Statement Analysis

Workload	Credits	Study semester	Frequency	Sem.	Duration	Type	Q-level
150 h	6	1st sem.	Annual	Summer	1 sem.	Compulsory	MBA
Course type			Participation requirements			Planned group size	Language
Self-study & classroom exercises			None			25	German

Forms of teaching and learning (self-study/contact hours)

Self-study: (134 h)

- (1) Guided knowledge transfer
 - a. Knowledge transfer and practice through assignments (lecture and exercise)
 - b. Supplementary courses, e.g. via universities' e-learning systems (including additional scripts, exercise material, multimedia courses)
- (2) Independent knowledge consolidation
 - a. Reading of literature listed in assignments
 - b. Case studies and discussion in study groups
 - c. Application and consolidation in professional life

Contact hours: (16 h)

Classroom exercise

- a. Exercises and case studies
- b. Clarification of students' questions arising from the self-study phase

Learning outcomes/competences

On successful completion of the module, students have the following knowledge and skills:

- Understand and evaluate the principles and relationships of corporate double-entry bookkeeping
- Discuss accounting techniques while taking into account the applicable legal provisions and apply the principles of accounting
- Develop postings for real issues and keep accounts for the most important functional areas in companies
- Prepare annual financial statements, depending on the legal form, in accordance with commercial law and international accounting principles
- Select, develop and assess evaluations and derive their significance for the analysis of annual financial statements
- Analyse, interpret and evaluate annual financial statements and derive recommendations for management
- Identify and examine accounting policy options
- Develop strategic perspectives in various fields of application

All learning outcomes are based, amongst other things, on the practiced handling of the relevant valid legal standards for accounting, mainly commercial law (HGB), and in selected cases the International Financial Reporting Standards (IFRS).

Contents

Introduction to Business Accounting

- Tasks and structure of business accounting
- Basic accounting terms
- Legal regulations and organisation
- Structure + reports

Basic principles of accounting techniques

- Central elements of external accounting
- Business transactions that do and do not affect profit or loss
- Overview of financial accounting for procurement, production, sales and personnel
- Use of IT systems and digitisation

Preparation of annual financial statements and evaluation

- Evaluation according to commercial law
- Statement of comprehensive income
- International Financial Reporting Standards (IFRS)
- Definition
- Legal form-dependent list of further analyses
- Principles of financial statement analysis
- Techniques and concepts of annual financial statement policy
- Financial, economic and strategic analysis

Newer perspectives (capital market and value orientation, social and environmental aspects)

Form of assessment

Written examination (or oral examination)

Examination duration: 90 min

Condition for the award of credits

Module examination pass

Weight of grade in the final grade

6/120 (The module grade, weighted with its ECTS points, is included in the final grade.)

Application of the module (in the following study programmes)

Part-time combined study programme: Master Management for Engineering and Natural Sciences (MBA)

Module coordinator

Prof. Dr. Andreas Uphaus

Other information

- (1) Classroom lecturers (see current list of lecturers at the relevant location)
- (2) Teaching materials (assignments, see the current list of authors on the relevant assignment)

1.2 Management Skills

Workload	Credits	Study semester	Frequency	Sem.	Duration	Type	Q-level
150 h	6	1st sem.	Annual	Summer	1 sem.	Compulsory	MBA
Course type			Participation requirements			Planned group size	Language
Self-study & seminar			None			15	German

Forms of teaching and learning (self-study/contact hours)

Self-study: (102 h)

- (1) Guided knowledge transfer,
 - (1) Knowledge transfer and practice through assignments (lecture and exercises in the assignment, learning objectives, revision questions)
 - (2) Supplementary courses, e.g. additional scripts, exercise material, multimedia courses
- (2) Independent knowledge consolidation,
 - a. Reading of literature listed in assignments
 - b. Case studies/exercises and discussion in study groups
 - c. Application and consolidation in professional life

Contact hours: (48 h) (6 block days during the semester)

Case studies with video recording and reflection phases. Participants experience leadership situations and the effect they themselves have on the group. They perform managerial tasks and apply the principles of communication.

Clarification of students' questions arising from the self-study phase

Learning outcomes/competences

The following learning outcomes are achieved following completion of the module

- Students perform a situational analysis of the social and methodological aspects of management tasks in a company.
- Students orient themselves in the various dimensions of management tasks and differentiate their functions in the areas of leadership, communication, presentation, planning, analysis and reflection.
- Students define the necessary analysis and design tasks within a range of management functions.
- Students able to differentiate between suitable leadership concepts and theories based on the situational requirements.
- Students assess the action process in self-reflection and reflection from others and identify development potential.
- They are able to give speeches and presentations tailored to the target group, as well as give and receive feedback.
- Students know how communication/motivation works and are able to apply it appropriately.
- They are able to assess and apply personal work techniques in a targeted manner.

Contents

During the module, students become acquainted with the following content, contexts and topics:

- Models for leadership, communication, presentation, planning, analysis and reflection; leadership styles, models and theories
- Rules, phases and techniques for leadership, communication, presentation
- Planning, analysis or reflection
- Requirements, influencing factors and success criteria for the design of the social and methodological aspects of management tasks
- Disruptions and difficulties in performing managerial tasks
- Typical situations of management tasks
- Giving and receiving feedback
- Speaking and giving speeches
- Visualisation as a central element of presentations
- Negotiation techniques with international partners
- Management of employees in international corporations (diversity management)
- Raising awareness of cultural differences

Form of assessment

Term paper and lecture/presentation on term paper

Condition for the award of credits

Module examination pass

Weight of grade in the final grade

6/120 (The module grade, weighted with its ECTS points, is included in the final grade.)

Application of the module (in the following study programmes)

Part-time combined study programme: Master Management for Engineering and Natural Sciences (MBA)

Module coordinator

Prof. Dr. Striewe

Other information

- (1) Classroom lecturers (see current list of lecturers at the relevant location)
- (2) Teaching materials (assignments, see the current list of authors on the relevant assignment)

1.3 Business Law

Workload	Credits	Study semester	Frequency	Sem.	Duration	Type	Q-level
150 h	6	1st sem.	Annual	Summer	1 sem.	Compulsory	MBA
Course type			Participation requirements			Planned group size	Language
Self-study & classroom exercises			None			25	German

Forms of teaching and learning (self-study/contact hours)

Self-study: (134 h)

- a. Guided knowledge transfer
 - b. Knowledge transfer and practice through assignments (lecture and exercises in the assignment, learning objectives, revision questions)
 - c. Supplementary courses, e.g. additional scripts, exercise material, multimedia courses
- (1) Independent knowledge consolidation
- a. Reading of literature listed in assignments
 - b. Case studies/exercises and discussion in study groups
 - c. Application and consolidation in professional life

Contact hours: (16 h)

- a. Exercises and case studies
- b. Clarification of students' questions arising from the self-study phase

Learning outcomes/competences

On successful completion of the module, students have the following knowledge and skills:

- Students are able to classify the principles of business law (including commercial, contract and employment law) and take them into account in business decisions.
- Students develop an understanding of the legal way of thinking and working and the German legal system.
- Students are able to analyse and evaluate business law issues from a legal perspective.
- Students know the importance of the legal bases for the establishment of general terms and conditions and are able to apply them.

Students are able to include relevant legal bases for the international purchase process in the drafting of a contract.

Contents

During the module, students are acquainted with the following content, contexts and topics:

- Principles of contract law
- Principles of commercial law
- Different national standards
- Principles of corporate liability
- Principles of employment law

Form of assessment

Written examination (or oral examination)
Duration of written examination: 90 min

Condition for the award of credits

Module examination pass

Weight of grade in the final grade

6/120 (The module grade, weighted with its ECTS points, is included in the final grade.)

Application of the module (in the following study programmes)

Part-time combined study programme: Master Management for Engineering and Natural Sciences (MBA)

Module coordinator

Prof. Dr. Striewe

Other information

- (1) Classroom lecturers (see current list of lecturers at the relevant location)
- (2) Teaching materials (assignments, see the current list of authors on the relevant assignment)

1.4 Project Management

Workload	Credits	Study semester	Frequency	Sem.	Duration	Type	Q-level
150 h	6	1st sem.	Annual	Summer	1 sem.	Compulsory	MBA
Course type			Participation requirements			Planned group size	Language
Self-study & classroom exercises			None			25	German

Forms of teaching and learning (self-study/contact hours)

Self-study: (134 h)

- (1) Guided knowledge transfer
 - a. Knowledge transfer and practice through assignments (lecture and exercises in the assignment, learning objectives, revision questions)
 - b. Supplementary courses, e.g. additional scripts, exercise material, multimedia courses
- (2) Independent knowledge consolidation
 - a. Reading of literature listed in assignments
 - b. Case studies/exercises and discussion in study groups
 - c. Application and consolidation in professional life

Contact hours: (16 h)

- a. Exercises and case studies
- b. Clarification of students' questions arising from the self-study phase

Learning outcomes/competences

On successful completion of the module, students have the following knowledge and skills:

- Students are able to evaluate and apply project management methods and instruments.
- Students are able to design, apply and implement basic project management plans (project organisation, project structure and schedule).
- Students are able to systematically structure the development of projects.
- Students are able to manage projects according to central criteria (time, costs and quality), from project initiation to project completion.
- Students are able to differentiate between suitable methods (e.g. agile or hybrid) and select the suitable project management alternative for projects.
- Students are able to apply digitised methods of project management.
- Students know the problems of multi-project management and are able to assess and apply multi-project management control systems.

Contents

Starting with the basics of a project, the following sub-areas are dealt with:

- Project management phases and processes
- Project plans (project structure and schedule)
- Resource management
- Central products and documents in project management
- Project controlling
- Team formation and change management in projects
- Configuration and change management
- Risk management in projects
- Agile project management (especially SCRUM) as well as hybrid project management
- Multi-project management

Form of assessment

Written examination (or oral examination)

Written examination duration: 90 min

Condition for the award of credits

Module examination pass

Weight of grade in the final grade

6/120 (The module grade, weighted with its ECTS points, is included in the final grade.)

Application of the module (in the following study programmes)

Part-time combined study programme: Master Management for Engineering and Natural Sciences (MBA)

Module coordinator

Prof. Dr. Striewe

Other information

- (1) Classroom lecturers (see current list of lecturers at the relevant location)
- (2) Teaching materials (assignments, see the current list of authors on the relevant assignment)

2.1 Controlling and Cost Management

Workload	Credits	Study semester	Frequency	Sem.	Duration	Type	Q-level
200 h	8	2nd sem.	Annual	Winter	1 sem.	Compulsory	MBA
Course type			Participation requirements			Planned group size	Language
Self-study & classroom exercises			None			25	German

Teaching and learning methods (self-study/contact hours)

Self-study: (172 h)

- (1) Guided knowledge transfer
 - a. Knowledge transfer and practice through assignments (lecture and exercise)
 - b. Supplementary courses, e.g. via universities' e-learning systems (including additional scripts, exercise material, multimedia courses)
- (2) Independent knowledge consolidation
 - a. Reading of literature listed in assignments
 - b. Case studies and discussion in study groups
 - c. Application and consolidation in professional life

Contact hours: (28 h)

Classroom exercise,

- a. Exercises and case studies
- b. Clarification of students' questions arising from the self-study phase

Learning outcomes/competences

On successful completion of the module, students have the following knowledge and skills:

- Explain the purpose and organisation of controlling and cost management
- Understand, design, and evaluate operating income accounting, taking into account various cost accounting systems
- Perform cost analyses and evaluate results
- Develop and implement strategic, tactical and operational planning models
- Support management decisions with recommendations for action based on controlling models
- Integrate value systems and behavioural approaches in control mechanisms and critically reflect on results
- Ascertain and assess risks and draw conclusions
- Identify and collect relevant controlling data, as well as apply analysis models, interpret results and derive measures

Contents

1. **Principles:** Basic terms, content, tasks, organisation and roles, new challenges
2. **Cost accounting/internal accounting:** Information supply, cost types and location accounting, costing, planned cost accounting, contribution margin accounting, target costing, activity-based costing.
3. **Further tools for information supply:** KPIs and KPI systems, balanced scorecards, reporting, (international) transfer prices
4. **Planning and control:** Operational planning (budgeting) and tactical/strategic planning
5. **Value-oriented controlling:** Value-oriented basic concepts, value-oriented KPIs, economic value added, behavioural management accounting
6. **Risk controlling:** Operational risks, market risks, credit risks
7. **Digitisation in management accounting:** *Big data* in controlling, new(er) analytical procedures/data analysis process

Form of assessment

Written examination (or oral examination)
Written examination duration: 90 min

Condition for the award of credits

Module examination pass

Weight of grade in the final grade

6/120 (The module grade, weighted with its ECTS points, is included in the final grade.)

Application of the module (in the following study programmes)

Part-time combined study programme: Master Management for Engineering and Natural Sciences (MBA)

Module coordinator

Prof. Dr. Andreas Uphaus

Other information

- (1) Classroom lecturers (see current list of lecturers at the relevant location)
- (2) Teaching materials (assignments, see the current list of authors on the relevant assignment)

2.2 Strategy & Innovation Management

Workload	Credits	Study semester	Frequency	Sem.	Duration	Type	Q-level
150 h	6	2nd sem.	Annual	Winter	1 sem.	Compulsory	MBA
Course type		Participation requirements			Planned group size	Language	
Self-study & seminar		None			25	German	

Forms of teaching and learning (self-study/contact hours)

Self-study: (134 h)

- (1) Guided knowledge transfer
 - a. Knowledge transfer and practice through assignments (lecture and exercises in the assignment, learning objectives, revision questions)
 - b. Supplementary courses, e.g. additional scripts, exercise material, multimedia courses
- (2) Independent knowledge consolidation
 - a. Reading of literature listed in assignments
 - b. Case studies/exercises and discussion in study groups
 - c. Application and consolidation in professional life

Contact hours: (16 h)

- a. Exercises and case studies
- b. Clarification of students' questions arising from the self-study phase

Learning outcomes/competences

On successful completion of the module, students have the following knowledge and skills:

- They are proficient in analysis and know the possible uses of strategic instruments.
- They are able to examine and evaluate strategic decisions in local, national and global markets.
- They are able to define different concepts of strategy and innovation management.
- They are able to formulate alternative strategies and systematically select the appropriate alternative strategy.
- They are able to differentiate between incremental and radical innovation projects.
- They are able to apply a three-stage assessment of innovation ideas.

They are able to develop concepts for a (partial) corporate strategy based on an external and internal analysis.

Contents

This module includes the following aspects from the field of strategy and innovation management:

- Basic concepts, context and design of management
- Models for strategic corporate management (e.g. stakeholder analysis)
- Market field strategies and portfolio planning as a core component of strategy design
- Strategic importance of the formal and informal organisation
- Sources of innovation
- Types of innovation
- Evaluation models of innovation ideas
- Organisational structures for innovations

Management of the product development process

Form of assessment

Written examination (or oral examination)

Written examination duration: 90 min

Condition for the award of credits

Module examination pass

Weight of grade in the final grade

6/120 (The module grade, weighted with its ECTS points, is included in the final grade.)

Application of the module (in the following study programmes)

Part-time combined study programme: Master Management for Engineering and Natural Sciences (MBA)

Module coordinator

Prof. Dr. Striewe

Other information

- (1) Classroom lecturers (see current list of lecturers at the relevant location)
- (2) Teaching materials (assignments, see the current list of authors on the relevant assignment)

2.3 Economics – International Economics

Workload	Credits	Study semester	Frequency	Sem.	Duration	Type	Q-level
150 h	6	2nd sem.	Annual	Winter	1 sem.	Compulsory	MBA
Course type			Participation requirements			Planned group size	Language
Self-study & classroom exercises			None			25	German

Forms of teaching and learning (self-study/contact hours)

Self-study: (134 h)

- (1) Guided knowledge transfer
 - a. Knowledge transfer and practice through assignments (lecture and exercises in the assignment, learning objectives, revision questions)
 - b. Supplementary courses, e.g. additional scripts, exercise material, multimedia courses
- (2) Independent knowledge consolidation
 - a. Reading of literature listed in assignments
 - b. Case studies/exercises and discussion in study groups
 - c. Application and consolidation in professional life

Contact hours: (16 h)

- a. Exercises and case studies
- b. Clarification of students' questions arising from the self-study phase

Learning outcomes/competences

On successful completion of the module, students have the following knowledge and skills:

- Students are able to differentiate and assess the basic microeconomic and macroeconomic theories.
- Students are able to analyse and evaluate the interdependencies and consequences of economic framework conditions on companies.
- Students understand the causes of unemployment, economic developments, and inflation and interest rate developments in a macroeconomic context.
- Students are able to analyse and describe the effects of economic policy on the various business functions (business cycle/financial policy, demand; interest rate level, financing, labour market policy = operational HR policy etc.).
- Students can take into account the effects of economic policy on cross-border goods, capital and factor flows in corporate decisions and assess their importance.
- They are able to assess theories of exchange rate developments and other international interdependencies and apply them to the situation.

Contents

During the module, students become acquainted with the following content, contexts and topics:

- Household demand
- Market/pricing/market forms
- Principles of national accounts
- Economic theories (Keynesianism/monetarism)
- Economic goals and conflicting goals
- Economic policy instruments (monetary policy, financial policy, currency policy, foreign trade policy)
- Strategic corporate planning on the basis of international aspects (effect of foreign countries on interest rates, employment, price levels. Economy; environment)
- Pricing policy of international goods (procurement/sales; exchange rate hedging; international interest rate differentials)
- Corporate social responsibility, location and environment analyses
- Exchange rate theories, influence of hard and soft factors on the exchange rate

Form of assessment

Written examination (or oral examination)

Written examination duration: 90 min

Condition for the award of credits

Module examination pass

Weight of grade in the final grade

6/120 (The module grade, weighted with its ECTS points, is included in the final grade.)

Application of the module (in the following study programmes)

Part-time combined study programme: Master Management for Engineering and Natural Sciences (MBA)

Module coordinator

Prof. Dr. Striewe

Other information

- (1) Classroom lecturers (see current list of lecturers at the relevant location)
- (2) Teaching materials (assignments, see the current list of authors on the relevant assignment)

2.4 Business Intelligence

Workload	Credits	Study semester	Frequency	Sem.	Duration	Type	Q-level
150 h	6	2nd sem.	Annual	Winter	1 sem.	Compulsory	MBA
Course type			Participation requirements			Planned group size	Language
Self-study & classroom			None			25	German

Teaching and learning methods (self-study/contact hours)

Self-study: (134 h)

- a) Guided knowledge transfer
 - a. Knowledge transfer and practice through assignments (lecture and exercise)
 - b. Supplementary courses, e.g. via universities' e-learning systems (including additional scripts, exercise material, multimedia courses)
- b) Independent knowledge consolidation
 - a. Reading of literature listed in assignments
 - b. Case studies and discussion in study groups
 - c. Application and consolidation in professional life

Contact hours: (16 h)

- a) Classroom exercise, 16 hours, plus 1 examination day at the end (block day/depending on group size)
- b) Exercises and case studies
- c) Clarification of students' questions arising from the self-study phase
- d) Presentation of the written term paper and technical defence as part of a group discussion on the day of the examination

Learning outcomes/competences

On successful completion of the module, students have the following knowledge and skills: They are able to:

- explain the principles and current topics for the use of business intelligence (BI) solutions and assess possible application scenarios.
- compare different approaches for business intelligence solutions and evaluate them according to technical and business criteria.
- develop recommendations for action for the conceptualisation, introduction and operation of BI solutions.
- analyse and evaluate existing BI solution architectures and applications and develop proposals for the use of new technologies and trends in the BI environment.

Contents

During the module, students are acquainted with the following content, contexts and topics:

- Introduction and motivation for business intelligence and big data
- IT infrastructure of BI solutions
- Data and business process modelling as a basis for data analysis and business process optimisation
- Principles of analytical information systems
- Business intelligence methods and instruments (e.g. data warehousing, data marts, OLAP (Online Analytical Processing), data mining, AI, dashboards, ETL (extract, transform, load) processes, etc.)
- Business intelligence developments and application examples
- Data analysis and machine learning methods

Form of assessment

Term paper and lecture/presentation on term paper/leading a group discussion on the day of the examination.

Condition for the award of credits

Module examination pass

Weight of grade in the final grade

6/120 (The module grade, weighted with its ECTS points, is included in the final grade.)

Application of the module (in the following study programmes)

Part-time combined study programme: Master Management for Engineering and Natural Sciences (MBA)

Module coordinator

Prof. Dr. Peter Hartel

Other information

- (1) Classroom lecturers (see current list of lecturers at the relevant location)
- (2) Teaching materials (assignments, see the current list of authors on the relevant assignment)

3.1 Investment and Financing Models

Workload	Credits	Study semester	Frequency	Sem.	Duration	Type	Q-level
150 h	6	3rd sem.	Annual	Summer	1 sem.	Compulsory	MBA
Course type			Participation requirements			Planned group size	Language
Self-study & classroom exercises			None			25	German

Teaching and learning methods (self-study/contact hours)

Self-study: (130 h)

- (1) Guided knowledge transfer
 - a. Knowledge transfer and practice through assignments (lecture and exercise)
 - b. Supplementary courses, e.g. via universities' e-learning systems (including additional scripts, exercise material, multimedia courses)
- (2) Independent knowledge consolidation
 - a. Reading of literature listed in assignments
 - b. Case studies and discussion in study groups
 - c. Application and consolidation in professional life

Contact hours: (20 h)

Classroom exercise

- a. Exercises and case studies
- b. Clarification of students' questions arising from the self-study phase

Learning outcomes/competences

On successful completion of the module, students have the following knowledge and skills:

- Map the organisation and framework of financial management and classify issues
- Explain the principles of financial mathematics and carry out specific calculations
- Assess complex investment alternatives using suitable methods
- Organise and perform international financial planning, identify capital requirements
- Identify, evaluate and implement financing alternatives
- Plan and implement financial data analysis and assess the results
- Determine financial risks and develop solutions with the help of suitable financial instruments
- Recognise opportunities, possibilities and challenges of digitisation in financial processes and products and derive optimisation measures
- Assess the overall financial situation and design control options to ensure liquidity, profitability and financial security

Contents

- Principles + organisation of financial management, ethics
- Principles of financial mathematics: including interest calculation and aspects of linear algebra
- Investment management
 - o Static investment calculation
 - o Dynamic investment calculation
 - o Qualitative assessments, behavioural and risk aspects
 - o Project investment calculation with case study
- Financial Management
 - o Financial network organisation, FinTechs + digital finance
 - o International financial planning
 - o Financing instruments: especially stocks + bonds
 - o Supply chain finance
 - o Financial strategic risk management: interest rates, currencies, commodities
 - o Working capital management
- Finance and investment controlling, big data in finance

Form of assessment

Written examination (or oral examination)
Written examination duration: 90 min

Condition for the award of credits

Module examination pass

Weight of grade in the final grade

6/120 (The module grade, weighted with its ECTS points, is included in the final grade.)

Application of the module (in the following study programmes)

Part-time combined study programme: Master Management for Engineering and Natural Sciences (MBA)

Module coordinator

Prof. Dr. Andreas Uphaus

Other information

- (1) Classroom lecturers (see current list of lecturers at the relevant location)
- (2) Teaching materials (assignments, see the current list of authors on the relevant assignment)

3.2 Marketing & Sales

Workload	Credits	Study semester	Frequency	Sem.	Duration	Type	Q-level
150 h	6	3rd sem.	Annual	Summer	1 sem.	Compulsory	MBA
Course type			Participation requirements			Planned group size	Language
Self-study & classroom exercises			None			25	German

Teaching and learning methods (self-study/contact hours)

Self-study: (126 h)

- (1) Guided knowledge transfer
 - a. Knowledge transfer and practice through assignments (lecture and exercises in the assignment, learning objectives, revision questions)
 - b. Supplementary courses, e.g. additional scripts, exercise material, multimedia courses
- (2) Independent knowledge consolidation
 - a. Reading of literature listed in assignments
 - b. Case studies/exercises and discussion in study groups
 - c. Application and consolidation in professional life

Contact hours: (24 h)

- a. Exercises and case studies
- b. Clarification of students' questions arising from the self-study phase

Learning outcomes/competences

On successful completion of the module, students have the following knowledge and skills:

- Create a marketing plan and carry out the necessary analyses (e.g. SWOT)
- Derivation of marketing strategies from individual company goals and market situations to promote the long-term, successful development of the company
- Ability to create meaningful variations on the various strategies
- Know methods for strategy development and are able compare and deploy them in a meaningful way
- Know and apply the operative marketing techniques with their relevant goals, subsidiary tasks and model theoretical knowledge
- Recognition and deployment of connections, synergies and interdependencies between the individual techniques
- Application of techniques in terms of strategic direction
- Understanding of decision-making structures in private and industrial purchasing behaviour and use for a targeted deployment of the marketing mix
- Targeted deployment of the marketing strategy, as well as the adequate marketing mix, in the national and international environment as an overall conceptual approach

Contents

During the module, students are acquainted with the following content, contexts and topics:

Strategic marketing

- Introduction
- Need for marketing strategies
- Tasks and scope of marketing strategies
- Market field strategies
- Market stimulation
- Market segmentation
- Market area strategies
- Strategy combinations
- Strategy variations
- Implementation of different international product life cycles in marketing strategies (waterfall/sprinkler theory)
- Buyer behaviour
- International buyer behaviour in the B2C and B2B sectors

Operational marketing

- Product policy
- Product innovations
- Price and conditions policy
- Communication policy
- Distribution policy/international distribution channel policy

Form of assessment

Written examination (or oral examination)
Written examination duration: 90 min

Condition for the award of credits

Module examination pass

Weight of grade in the final grade

6/120 (The module grade, weighted with its ECTS points, is included in the final grade.)

Application of the module (in the following study programmes)

Part-time combined study programme: Master Management for Engineering and Natural Sciences (MBA)

Module coordinator

Prof. Dr. R. Schlottmann

Other information

- (1) Classroom lecturers (see current list of lecturers at the relevant location)
- (2) Teaching materials (assignments, see the current list of authors on the relevant assignment)

3.3 Operations Management

Workload	Credits	Study semester	Frequency	Sem.	Duration	Type	Q-level
150 h	6	3rd sem.	Annual	Summer	1 sem.	Compulsory	MBA
Course type			Participation requirements			Planned group size	Language
Self-study & classroom exercises			None			25	German

Teaching and learning methods (self-study/contact hours)

Self-study: (126 h)

- (1) Guided knowledge transfer
 - a. Knowledge transfer and practice through assignments (lecture and exercise)
 - b. Supplementary courses, e.g. scripts, exercise material, multimedia courses
- (2) Independent knowledge transfer
 - a. Case studies and real examples from professional life
 - b. Reading of literature listed in assignments

Contact hours: (24 h)

- (1) Lecture and classroom exercise
 - a. Lecture, case studies from real practice, exercises
 - b. Clarification of students' questions arising from the self-study phase

Learning outcomes/competences

The students should understand the business principles and interrelationships of production management.

On the basis of data management, they should understand the core and cross-divisional functions of production planning and control systems (PPC systems) depending on the relevant company typology and be able to classify them in context. Students should be able to apply business methods, models and processes in production management.

Students acquire knowledge of international procurement markets, international planning and control methods, and international corporations.

On successful completion of the module, students have the following knowledge and skills:

- Students are familiar with the business context of production management and are able to assess and optimise them
- Students are able to formulate and control the target parameters of production management on a company-specific basis
- Students are able to apply business methods, models and processes in production management on a company-specific basis
- Students are familiar with the product creation process and production process development and are able to develop them further in view of changing requirements on a company-specific basis
- Students are familiar with the changed requirements for the product creation process and production process development as a result of globalisation

- Students are familiar with the core and cross-divisional functions of production planning and control systems and are able to implement their use in the company
- Students are able to analyse and optimise existing product development processes and production processes and advocate the optimisation measures in critical internal discussions

Contents

During the module, students are acquainted with the following content, contexts and topics:

- Strategic production management:
Impact of the product life cycle on the product creation process (planning, development, production) and production process development (workflow planning, workplace planning, work equipment planning). Controlling of target values for product and process development
- Tactical production management:
Optimal use of resources and materials in the context of series and single part production. Work planning, capacity planning and scheduling
- Operational production management:
Function and structure of ERP/PPC systems, material planning, capacity and schedule planning, order releases, order monitoring, production management and controlling, production logistics
- PPC data management, including: master and structural data, movement data, production programme planning, production requirements planning, in-house production planning and control, order coordination, PPC management accounting.
- Exercise: consolidation of lecture content through discussion, case studies and exercises using SAP GBI (GLOBAL BIKES INC).

Form of assessment

Written examination (or oral examination)
Written examination duration: 90 min

Condition for the award of credits

Module examination pass

Weight of grade in the final grade

6/120 (The module grade, weighted with its ECTS points, is included in the final grade.)

Application of the module (in the following study programmes)

Part-time combined study programme: Master Management for Engineering and Natural Sciences (MBA)

Module coordinator

Prof. Dr.-Ing. Michael Schroer

Other information

- (1) Classroom lecturers (see current list of lecturers at the relevant location)
- (2) Teaching materials (assignments, see the current list of authors on the relevant assignment)

3.4 Digital Process Management

Workload	Credits	Study semester	Frequency	Sem.	Duration	Type	Q-level
150 h	6	3rd sem.	Annual	Summer	1 sem.	Compulsory	MBA
Course type			Participation requirements			Planned group size	Language
Self-study & classroom exercises			None			25	German

Teaching and learning methods (self-study/contact hours)

Self-study: (134 h)

- (1) Guided knowledge transfer
 - a. Knowledge transfer and practice through assignments (lecture and exercise)
 - b. Supplementary courses, e.g. via universities' e-learning systems (including additional scripts, exercise material, multimedia courses)
- (2) Independent knowledge consolidation
 - a. Reading of literature listed in assignments
 - b. Case studies and discussion in study groups
 - c. Application and consolidation in professional life

Contact hours: (16 h)

Classroom exercise, 16 hours and 1 examination day at the end (block day)

- a. Exercises and case studies
- b. Clarification of students' questions arising from the self-study phase
- c. Presentation of the written term paper and technical defence as part of a group discussion on the day of the examination

Learning outcomes/competences

On successful completion of the module, students have the following knowledge and skills:

- Map process management and classify it within the company organisation
- Determine and evaluate potentials and risks of process changes
- Describe and analyse processes based on suitable models
- Design and implement process optimisations with special consideration of digitisation aspects
- Be proficient in digitisation methods and their experimental use
- Examine, assess and select disruptive alternatives and platform solutions
- Implement agile development and implementation methods

Contents

- Company organisation, company goals and process goals
- Hierarchical process maps and enterprise architecture management
- Framework conditions of process management: organisation, components and restrictions
- Processes: definition, modularisation, interface management
- Process planning and modelling with methods and standards such as: Business Process Model and Notation (BPMN), Event-Driven Process Chains (EPK), Unified Modelling Language (UML), Enterprise Architecture Model (EAM), Quality Management (QM) and certification DIN EN ISO 9000 ff . Value Stream Mapping
- Process optimisation
 - o Digitisation of existing processes with digital workflows and support systems
 - o Introduction of new process architectures
 - o Disruptive digital process changes: digital business process reengineering In- and outsourcing, platform support
 - o Selection of solutions and providers
 - o Agile change management
- Process controlling and potential analysis
- Process investments and success measurement

Form of assessment

Term paper and lecture/presentation on term paper/leading a group discussion on the day of the examination.

Condition for the award of credits

Module examination pass

Weight of grade in the final grade

6/120 (The module grade, weighted with its ECTS points, is included in the final grade.)

Application of the module (in the following study programmes)

Part-time combined study programme: Master Management for Engineering and Natural Sciences (MBA)

Module coordinator

Prof. Dr. Andreas Uphaus

Other information

- (1) Classroom lecturers (see current list of lecturers at the relevant location)
- (2) Teaching materials (assignments, see the current list of authors on the relevant assignment)

4.1 Business Simulation

Workload	Credits	Study semester	Frequency	Sem.	Duration	Type	Q-level
100 h	4	4th sem.	Annual	Winter	1 sem.	Compulsory	MBA
Course type			Participation requirements			Planned group size	Language
Self-study & classroom exercises			None			25	German

Teaching and learning methods (self-study/contact hours)

Self-study: (80 h)

- (1) Guided knowledge transfer
 - a. Knowledge transfer and practice through assignments (lecture and exercise)
 - b. Supplementary courses, e.g. via universities' e-learning systems (including additional scripts, exercise material, multimedia courses)
- (2) Independent knowledge consolidation
 - a. Analysis, preparation of decisions and discussion in learning groups
 - b. Application and consolidation in professional life

Contact hours: (20 h)

Classroom exercise

- a. Simulation execution and teamwork for decision-making and evaluation
- b. Clarification of students' questions arising from the self-study phase

Learning outcomes/competences

On successful completion of the module, students have the following knowledge and skills:

- Are proficient in the holistic experiencing and recognition of business contexts
- Apply business planning with regard to human resources, utilisation, investments and finances in the overall corporate context and evaluate them with a view to success
- Define and pursue strategies, goals and concrete measures to secure the competitiveness of a company in a dynamic environment
- Interpret business figures and convert them into practical decisions
- Are proficient in the handling of complex decisions under conditions of uncertainty
- Work together in a team and work on and evaluate common problems and questions in the context of the expansion of a company
- Organise decision-making in the team in a time-efficient manner
- Are proficient in cross-divisional thinking and acting
- Solve problems in a structured way

Contents

Implementation of an IT-supported business game with comprehensive decision-making questions at company management level on topics such as product and market development, environment analyses, competition monitoring, employee management, production control, financing, investment and accounting.

For this purpose, students work in groups to develop sound decisions in the aforementioned subject areas, which are then processed and analysed in the simulation. Furthermore, the management-relevant aspects of leadership, delegation, division of labour, joint assumption of responsibility in classroom course components and in remote/virtual cooperation are implemented.

Form of assessment

Written examination (or oral examination)

Examination duration: 90 min

Condition for the award of credits

Module examination pass

Weight of grade in the final grade

4/120 (The module grade, weighted with its ECTS points, is included in the final grade.)

Application of the module (in the following study programmes)

Part-time combined study programme: Master Management for Engineering and Natural Sciences (MBA)

Module coordinator

Prof. Dr. Andreas Uphaus

Other information

- (1) Classroom lecturers (see current list of lecturers at the relevant location)
- (2) Teaching materials (assignments, see the current list of authors on the relevant assignment)

4.2 International Management (English)

Workload	Credits	Semester	Frequency	Sem.	Duration	Status	Q-level
150 h	6	4th sem.	Annual	Winter	1 sem.	Core	MBA
Seminar type			Participation requirements			Group size	Language
Self-study and tutorial			No formal requirements			25	English

Teaching methods and learning styles (self-study/contact hours)

Self-study: (134 h)

- (1) Seminar and tutorial
 - a. Seminar and tutorial based on lecture notes (lecture notes and tasks in written form, learning outcome, revision sessions)
 - b. Supplementary material and help, for example via the universities' e-learning systems (additional notes, exercises, multimedia learning material, current statistics)
- (2) Self-study enhancement sessions
 - a. Studying the suggested literature in the lecture notes
 - b. Case studies/exercises in the notes and discussions in the learning teams
 - c. Applying and enhancing the acquired knowledge on the job

Contact hours: (16 h)

- (1) On-site practical sessions,
 - a. Tasks and case studies
 - b. Clarifying student questions coming up in the self-study phases

Learning outcome/competences

Having passed the module students have the following knowledge and skills:

1. Students understand the environment, processes, and effects of international business and analyse the various economic functions regarding cross-border flows of goods and factors. Students acquire and implement knowledge that is necessary to sell and produce abroad.
2. They are able to distinguish various generic models of internationalisation and develop advantages for their companies.
3. They are able to do extensive country analyses using international ratios/indices and derive consequences for market management/development, value chain management and timing strategies.
4. They are able to apply the criteria for managing foreign markets depending on the sector or company size and strategy, and develop a consequential market management/development strategy.
5. They know the main tools of an international risk analysis and are able to compare and develop strategies of risk avoidance, risk shift, and risk mitigation appropriately. Moreover, they apply the main tools of risk reduction.
6. They can assess the importance of cultural influences on corporate organisation and strategy and utilise this perspective for their company.

7. They can evaluate the influences of cultural differences on e.g. advertising and HRM and develop goal-oriented proposals.
8. They know the most important tasks of international HRM and can develop tailor-made staffing strategies.

Content

The content of this module is defined by the areas of international market entry, international marketing and production, organisation of international companies as well as significant factors such as cultural differences of customers, employees, suppliers etc. With regard to export procedures and techniques the focus lies on contract design with and without consideration of terms and conditions, payment conditions using letter of credit or documentary collection, and hedging foreign exchange risks to name but a few. International marketing not only refers to the respective sales-related tools. The fundamental knowledge for the creation of a foreign branch or a joint venture are dealt with as much as the analysis of how to find distribution partners abroad.

Further topics are:

- International business and marketing strategies
- Risk control in international business transactions / international trade
- Forms of international activities (export, franchising, subsidiaries)
- Organisation of international companies
- World trade structures and international frameworks
- International institutions
- Country analyses/selection of international locations
- Intercultural management and international HRM

Multidisciplinarity/links:

Re-financing opportunities are dealt with in the module Investment and Finance Models; hedging strategies on the basis of statistical regression analysis in the module Project Analysis & Strategy; international aspects of purchasing in the module Marketing & Sales and in the seminar Marketing & Sales. The issues of supply chain management are dealt with in the module Operations Management.

Assessment

Written examination: 120 min. (or oral examination)

Requirement for obtaining credit points

Passing the module

Contribution of grade to final grade

6/120 (the module grade is weighted according to its ECTS value in the total grade)

This module is part of the following courses of studies:

Part-time combined study programme: Management for Engineering and Natural Sciences (MBA)

Module coordinator

Prof. Dr. Ralf Schlottmann

Further information

- (1) Teaching staff (cf. current list of teaching staff in the various locations)
- (2) Learning materials (seminar notes, cf. Current authors list in the publications)

4.3 Compulsory Elective Seminars: Marketing & Sales

Workload	Credits	Study semester	Frequency	Sem.	Duration	Type	Q-level
150 h	6	4th sem.	Annual	Winter	1 sem.	Compulsory elective	MBA
Course type			Participation requirements			Planned group size	Language
Self-study & classroom exercises			None			25	German

Teaching and learning methods (self-study/contact hours)

Self-study: (134 h)

- (1) Guided knowledge development and transfer
 - a. Knowledge transfer and practice through assignments (lecture and exercise)
 - b. Supplementary courses, e.g. via universities' e-learning systems (including additional scripts, exercise material, multimedia courses)
 - c. In-depth literature study for the preparation of the individual term paper)
 - d. Preparation of term paper
- (2) Independent knowledge consolidation
 - a. Reading of literature given in the scripts
 - b. Case studies and discussion in study groups
 - c. Application and consolidation in professional life

Contact hours: (16 h)

Classroom exercise, **16 hours (2 block days during the semester, 1 examination day at the end (= 3rd block day/depending on group size))**

- a. Exercises and case studies
- b. Clarification of students' questions arising from the self-study phase
- c. Presentation of the written term paper and technical defence as part of a group discussion on the day of the examination

Learning outcomes/competences

Students can choose from different main topics. Different topics can be chosen in the future depending on changes in the market (new research directions). The main topics can also differ at the four participating universities.

Two seminar topics are presented here as examples (Hagen/Bochum); the other universities will have different content and will only offer one seminar.

Students should apply the contents of the module "Elective Seminar Marketing & Sales" in a practice-oriented way to a specific problem of their employer (another company) and develop a solution independently and scientifically. For this purpose, a term paper on a current topic from this area should be written by a group of 2–3 students if possible. Students should learn to present their term paper to the other participants in a comprehensive and convincing way using suitable media. The subsequent discussion serves to consolidate the topic and is intended to put the students making the presentation in the position of moderators at the same time. Students apply various methods of moderation technique.

On successful completion of the module, students have the following knowledge and skills:

Sales management seminar (example for Hagen/Bochum):

- (1) Draw up a sales plan and perform the necessary analyses (e.g. competitor analysis).
- (2) Select the right sales channels and partners for different types of business
- (3) Select a suitable contractual distribution system according to the objective (e.g. authorised dealer, exclusive distribution)
- (4) Describe and use the common approaches for optimising sales talks and negotiations (e.g. Harvard concept of negotiation, DISC model (Dominance (D), Influence (I), Steadiness (S), and Conscientiousness (C)))
- (5) Deploy the methods of customer identification and customer evaluation procedures at the micro and macro level
- (6) Describe and evaluate the building blocks of customer relationship management (e.g. customer lifecycle management) and apply it to your company
- (7) Deploy various techniques to stimulate sales
- (8) Explain how an efficient and effective sales organisation is set up (e.g. key account management, division of sales areas)
- (9) Deploy different incentive systems for field service management depending on the situation
- (10) Describe the most important techniques of sales management and sales controlling and apply them to your company

Seminar: Online Marketing (example for Hagen/Bochum):

- (1) Understanding of the specifics and boundary conditions of online marketing
- (2) Expertise in planning an online marketing campaign for a company
- (3) Knowledge of the current available online marketing tools and their importance (corporate website, search engine marketing, online advertising and PR, affiliate marketing, social media marketing, mobile marketing, viral marketing, etc.), comparative evaluation of these tools
- (4) Ability to select suitable online marketing tools depending on the relevant objective
- (5) Application of the relevant key performance indicators to monitor the success of the use of tools

Contents

During the module, students are acquainted with the following content, contexts and topics:

- **For the next few years, for example, the following main topics are planned in Bochum / Hagen:** Sales Management and Online Marketing.
- Essential contents of the main topic of **Sales Management:**
 - o Marketing and Sales: Definition, conflicts and interaction
 - o Sales as an element of communication policy in the marketing mix
 - o Marketing logistics; sales channels, channel conflicts
 - o Sales organisations/levels/processes (remuneration/motivation systems)
 - o Customer evaluation process
 - o Working with the customer: focus on customer satisfaction
 - o Customer Relationship Management (CRM)
 - o Sales controlling
 - o Aspects of international sales (customers, suppliers)
- Essential contents of the main topic **Online Marketing:**
 - o Business principles of online marketing
 - o Framework conditions of online marketing
 - o Concepts of online marketing (planning an online marketing campaign depending on the objective)
 - o Possible deployments of current technological trends (artificial intelligence, augmented/virtual reality)
 - o Online marketing tools (corporate website, search engine marketing, online advertising and PR, affiliate marketing, social media marketing, mobile marketing, viral marketing, etc.)
 - o Monitoring the success of online marketing

Form of assessment

Term paper and **lecture/presentation on term paper/leading a group discussion on the day of the examination.** (Compulsory attendance on the entire day of the examination)

Condition for the award of credits

Module examination pass

Weight of grade in the final grade

6/120 (The module grade, weighted with its ECTS points, is included in the final grade.)

Application of the module (in the following study programmes)

Part-time combined study programme: Master Management for Engineering and Natural Sciences (MBA)

Module coordinator

Prof. Dr. R. Schlottmann

Other information

- (1) Classroom lecturers (see current list of lecturers at the relevant location)
- (2) Teaching materials (assignments, see the current list of authors on the relevant assignment)

4.4 Compulsory elective seminar: Operations Management

Workload	Credits	Study semester	Frequency	Sem.	Duration	Type	Q-level
150 h	6	4th sem.	Annual	Winter	1 sem.	Compulsory elective	MBA
Course type			Participation requirements			Planned group size	Language
Self-study & classroom exercises			None			25	German

Teaching and learning methods (self-study/contact hours)

Self-study: (134 h)

- (1) Guided knowledge transfer,
 - a. Knowledge transfer and practice through assignments (lecture and exercise)
 - b. Supplementary courses, e.g. scripts, exercise material, multimedia courses
- (2) Independent knowledge transfer,
 - a. Case studies and real examples from professional life
 - b. In-depth literature study for the preparation of the individual term paper)
 - c. Preparation of term paper

Contact hours: (16 h)

- (1) Lecture, classroom exercise and group work
 - a. Lecture, case studies from real practice, exercises
 - b. Demonstration using SAP, Module PP (Production Planning)
 - c. Clarification of students' questions arising from the self-study phase

Learning outcomes/competences

On successful completion of the module, students have the following knowledge and skills:

- Students know the business principles and contexts of integrated production planning using the example of the SAP PP (Production Planning) module and can apply them in a practice-oriented manner.
- Students are able to assess and apply the associated functions.
- Students know modern concepts of production management, such as Lean Manufacturing and House of Lean, and are able to design these on a company-specific basis.
- Students are able to support further development towards Industry 4.0 and evaluate the new technologies and processes that are important for the relevant company.

Contents

During the module, students are acquainted with the following content, contexts and topics:

- Internship: Process-oriented explanations of the integrated functionality of the PP module. For this purpose, practical in-depth knowledge of the SAP system is processed using case studies from the PP module.
- Production planning using SAP is demonstrated using practical examples. Practical implementation of the knowledge learned takes place based on the Production Management module.
- Building on the “Operations Management” module, the “modern concepts of production management” are taught under the heading “Lean Manufacturing”.
- Industry 4.0 topics.

Form of assessment

Term paper

Condition for the award of credits

Module examination pass

Weight of grade in the final grade

6/120 (The module grade, weighted with its ECTS points, is included in the final grade.)

Application of the module (in the following study programmes)

Part-time combined study programme: Master Management for Engineering and Natural Sciences (MBA)

Module coordinator

Prof. Dr-Ing. Michael Schroer

Other information

- (1) Classroom lecturers (see current list of lecturers at the relevant location)
- (2) Teaching materials (assignments, see the current list of authors on the relevant assignment)

4.5 Project: Analysis and Strategy

Workload	Credits	Study semester	Frequency	Sem.	Duration	Type	Q-level
150 h	6	4th sem.	Annual	Winter	1 sem.	Compulsory	MBA
Course type			Participation requirements			Planned group size	Language
Self-study & classroom exercises			None			25	German

Forms of teaching and learning (self-study/contact hours)

Self-study: (134 h)

- (1) Guided knowledge development and transfer
 - a. Knowledge transfer and practice through assignments (lecture and exercise)
 - b. Supplementary courses, e.g. via universities' e-learning systems (including additional scripts, exercise material, multimedia courses)
 - c. In-depth literature study for the preparation of the individual term paper)
 - d. Preparation of term paper
- (2) Independent knowledge consolidation
 - a. Reading of literature given in the scripts
 - b. Case studies and discussion in study groups
 - c. Application and consolidation in professional life

Contact hours: (16 h)

Classroom exercise, **24 hours (2 block days during the semester, 1 examination day at the end (= 3rd block day/depending on group size))**

- a. Exercises and case studies
- b. Clarification of students' questions arising from the self-study phase
- c. Presentation of the written term paper and technical defence as part of a group discussion on the day of the examination

Learning outcomes/competences

By successfully completing the module, students have the following competences:

- Students are able to assess the appropriate use of management concepts.
- Students are proficient in the structuring of management concepts with regard to their problem-solving ability for the purposes of strategy, organisation/processes/quality, controlling/financing and leadership/personnel.
- Students are able to evaluate the integrative perspectives of the application of management concepts for the strategic and operative control of the entire company and its sub-areas.
- Students are able to apply both primary and secondary statistical methods.
- Students are able to work on questions (case studies) in a team and present them to the seminar attendees, as well as face a critical discussion.
- Students should acquire the statistical principles for application in business decision-making situations and

be able to independently select and apply the appropriate statistical models to resolve operational problems.

- They are able to develop concepts for a (partial) corporate strategy based on an external and internal analysis.

Contents

In the age of globalisation, the analysis, development and evaluation of corporate strategies and the selected management systems can no longer be viewed from a purely national perspective. The aspects: where are production activities to be located, which market entry strategies and which international mergers and cooperation agreements are to be pursued, and which international HR policy is subject to an overarching approach in this module? The "Project: Analysis and Strategy" model focuses on the following aspects of operational strategy theory:

- Possible uses of different strategic techniques
- Analysis and significance of secondary statistical findings for the development of strategies in the context of a real project
- Collection of data
- Questionnaire development and evaluation (univariate, bi- and multivariate analyses, mean value calculations, distribution)
- Analysis and preparation of statistics
- Operational use of primary statistical methods
- Basic features of inclusive statistics
- Application of the basic features of descriptive and analytical statistics to business and quality-testing issues
- Recognition of relationships between descriptive and analytical statistics (e.g. frequency distribution and density function)
- Understanding estimation and testing procedures

Form of assessment

Term paper and lecture/presentation on term paper/leading a group discussion on the day of the examination.

Condition for the award of credits

Module examination pass

Weight of grade in the final grade

6/120 (The module grade, weighted with its ECTS points, is included in the final grade.)

Application of the module (in the following study programmes)

Part-time combined study programme: Master Management for Engineering and Natural Sciences (MBA)

Module coordinator

Prof. Dr. Frank Striewe

Other information

- (1) Classroom lecturers (see current list of lecturers at the relevant location)
- (2) Teaching materials (assignments, see the current list of authors on the relevant assignment)

5. Master Thesis and Colloquium

Workload	Credits	Study semester	Frequency	Sem.	Duration	Type	Q-level
600 h	24	5th sem.	On a continuing basis	Summer	1 sem.	Compulsory	MBA
Course type			Participation requirements			Planned group size	Language
Master thesis (21 CP) & Colloquium (3 CP)			74 CP				German (English possible)

Forms of teaching and learning (self-study/contact hours)

Self-study: (540 h)

- c. Within a given period, the student independently develops a practice-oriented scientific question from his or her specialist field using tried and tested scientific and practical methods.
- d. Independent work on topic areas. The topic of the master thesis is formulated by the company setting the topic, in consultation with the examiner, or is issued directly as a research-oriented, theoretical paper. The topic area should have a scientific character. The paper will be assessed by two reviewers and given a grade. All reviewers are professors from one of the participating universities. The paper can be written in German or English. The length of the master thesis should be around 60-80 pages. The time spent working on it is usually four months.

Contact hours: (40 h)

- a. Consultations with the supervising examiners, or
- b. Visits by reviewers to the companies,
- c. Defence of the results in the colloquium.

Learning outcomes/competences

Students apply the knowledge they have acquired so far in a practice-oriented project in a company or work on a scientific topic concerning a complex problem. In doing so, they show that they can also come to a conclusion on complex questions. In the context of the final colloquium, the results of the work in an interdisciplinary context, as well as their importance for practice, must be presented orally and defended before the examination board.

In the final colloquium, the students demonstrate their competences,

- explain and present the results of the master thesis convincingly in a lecture
- place the thesis in a networked context and defend it against critical objections
- recognise other problems related to the topic of the work and identify networked solutions
- apply the scientific knowledge gained during working on the thesis to the facts of their current/future professional activity

Contents

Complex issues from business administration, management, and corporate leadership with high demands on technical and methodological competence.

Form of assessment

Written elaboration and oral defence; for formal requirements cf. Examination Regulations

Conditions for the award of credits

Pass in master thesis, pass in colloquium

Weight of grade in the final grade

24/120 (The module grade, weighted with its ECTS points, is included in the final grade.)

Application of the module (in the following study programmes)

Part-time combined study programme: Management for Engineering and Natural Sciences (MBA)

Module coordinator

Full-time lecturers in the part-time combined Master's degree study programme: Management for Engineering and Natural Sciences (MBA)