

# Excerpts

of

# Module Descriptions

for the consecutive Master's degree program in

# Industrial Engineering and Management

Master of Science (M.Sc.)  
Fb 3: Business and Law

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For further information, please refer to the German version.

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## Module Descriptions

### Module 1: Introduction to Business Administration

ECTS Credits (CP) / Workload (h)	5 / 150
Module examination	Written examination (120 min.)
Learning outcomes and skills	<p>The starting point for this module is the technical and methodological competencies already gained in the first technical degree program.</p> <p>Technical competencies: Course participants can apply conceptual and methodical knowledge from the field of business studies, especially in relation to engineering and scientific preliminary studies, and derive concrete recommendations for action for decision makers in companies.</p> <p>The students can act professionally, methodically and socially appropriate in a company and apply concepts for technical and economic solutions to practical problems and projects in various industries. They are able to adapt to the special requirements of a new area of responsibility or a project in order to make appropriate and responsible decisions. They are able to analyze and interpret decision factors and prepare them for target groups by means of business management instruments and methods.</p> <p>Students can think in technical, economic, ecological and social contexts. In addition, they are prepared to support management on technical and economic issues. They acquire extensive, broad and subject-related knowledge.</p> <p>Students are able to apply their methodological skills to the analysis, planning and solution of technical and economic problems. They can include social and ecological factors in their decision-making processes. On the basis of the methodological competence they have developed, students can make well-founded business decisions as well as justify and discuss them at a technically appropriate level.</p>
Module language	German
Module availability	Winter semester

### Module 2: Empirical and Quantitative Methods

ECTS Credits (CP) / Workload (h)	5 / 150
Module examination	Written examination (120 min.)
Learning outcomes and skills	<p>The students are familiar with quantitative and qualitative methods of business administration and social sciences and can apply them practically. They are knowledgeable about the modelling of business problems and their solutions, and can analyze and structure them.</p>
Module language	German
Module availability	Winter semester

### Module 3: Strategic Management

ECTS Credits (CP) / Workload (h)	5 / 150
Module examination	Written examination (120 min.)
Learning outcomes and skills	<p>The students gain knowledge and conceptual and methodological skills regarding:</p> <ul style="list-style-type: none"> <li>• Strategic management and they are able to apply these to practical management problems and business case studies,</li> <li>• The strategic analysis and assessment of competition on national and international markets in which companies make and implement strategic decisions,</li> <li>• Companies' strategic planning,</li> <li>• The operational planning and the associated implementation problems, and can</li> </ul>

	<p>discuss them,</p> <p>The students also have the specialist skills:</p> <ul style="list-style-type: none"> <li>• To independently process questions regarding strategic management and strategic analysis,</li> <li>• To independently conduct strategic planning tasks in a company.</li> </ul> <p>The students also have the following competencies:</p> <ul style="list-style-type: none"> <li>• To think, decide and act independently in national and international management situations,</li> <li>• To utilize techniques for analysis and information gathering in management and to lead working groups in a company,</li> <li>• To apply networked thinking to interdisciplinary questions related to the strategic management of companies.</li> </ul>
Module language	German
Module availability	Winter semester

#### Module 4: Private Commercial Law

ECTS Credits (CP) / Workload (h)	5 / 150
Module examination	Written examination (120 min.)
Learning outcomes and skills	<p>The students master basic methods of private commercial law to gain legal understanding of commercial practice cases. They are able to work out corresponding tasks and cases, to investigate specific facts relevant to business law and to develop solutions to problems.</p> <p>They can describe relevant questions based on selected cases independently or as part of a team.</p> <p>The students have problem solving skills and the ability to express themselves precisely.</p>
Module language	German
Module availability	Winter semester

#### Module 5: Strategic and Operational Marketing

ECTS Credits (CP) / Workload (h)	5 / 150
Module examination	Written examination (120 min.)
Learning outcomes and skills	<p>The students have in-depth knowledge of strategic and operative marketing operations. They master the following contents:</p> <ul style="list-style-type: none"> <li>• Processes, actors and framework conditions in marketing</li> <li>• Purchasing behavior, market research,</li> <li>• Basics of the marketing mix,</li> <li>• Market segmentation and positioning,</li> <li>• Basics of consumer goods marketing,</li> <li>• Basics of industrial goods marketing,</li> <li>• Marketing for specific business types,</li> <li>• Customer management in consumer goods markets and industrial goods markets.</li> </ul> <p>The students are familiar with the different categories of objectives in the company and in particular the different categories of marketing objectives. They are aware of the different strategy levels in the company and their relationships to each other. They are familiar with the basic instruments and analysis tools of strategic and operative marketing and they can apply them practically and justify the results.</p> <p>The students are familiar with strategies and concepts for systematic customer</p>

	processing, distribution policy and sales control. They are able to analyze practical problems in sales management, to develop solutions and to represent them convincingly. The students are able to work out and justify different approaches to a problem.
Module language	German
Module availability	Winter semester

### Module 6: Accounting

ECTS Credits (CP) / Workload (h)	5 / 150
Module examination	Written examination (120 min.)
<ul style="list-style-type: none"> <li>Learning outcomes and skills</li> </ul>	<p>Students are able to:</p> <ul style="list-style-type: none"> <li>Book business transactions, apply accounting and valuation rules and prepare annual financial statements,</li> <li>Read annual financial statements and determine key figures.</li> <li>Prepare decisions in companies with the help of cost elements, cost centers and cost object accounting,</li> <li>Analyze target and actual variances on the basis of full and partial cost calculations.</li> <li>Work out and present complex facts,</li> <li>Transfer the acquired knowledge to individual cases.</li> </ul>
Module language	German
Module availability	Winter semester

### Module 7: Practical Case Project

ECTS Credits (CP) / Workload (h)	5 / 150
Module examination	Group project including a term paper (12 weeks for submission) and a presentation (min. 15 min./person, max. 180 min. for the whole presentation)
Learning outcomes and skills	<p>The students have the technical knowledge to conduct a process analysis in a company as well as to understand the analysis and improvement of processes in a team as a management task that helps to continuously improve the strategic goals of the company. They are able to ascertain, document and analyze logistical processes within the framework of a team project. They master the appropriate analytical approach to improving business processes and can derive this by weighing an entrepreneurial decision and/or strategy and justifying it rationally.</p> <p>The students can apply relevant functions of project and process management in terms of content based on complex supply chain questions and present them taking into account the connection with other company departments. As a member of a team, the student's ability to transfer knowledge and method competence in this specialist area are additionally strengthened.</p> <p>The students apply project management to practical questions. They gain technical and methodological competencies related to project definition, project organization and process organization. This is followed by project planning with time planning and feasibility studies. Project control is used as a starting point for in-depth considerations about the analysis of technical and economic systems.</p> <p>The students will be able to better deal with the project and process-dependent aspects of their later daily work as well as the resulting effects on their personal situation, the enterprise and the society. The students practice and improve their ability to cooperate, communicate and deal with conflicts in a team of their peers in a practical situation. The individual students additionally develop their own identity as part of a team, align themselves with the team's targets, handle their personal management accordingly and develop an ethical awareness.</p>

Module language	German
Module availability	Summer semester

### Module 8: Logistics Management I

ECTS Credits (CP) / Workload (h)	5 / 150
Module examination	Written examination (120 min.)
Learning outcomes and skills	<p>The students can describe and justify procurement strategies, procurement logistics concepts and the basics of production-synchronous procurement. They are able to apply methods for determining requirements.</p> <p>The students expand and deepen their knowledge in the areas of production management and logistics, in particular by focusing on production and logistics functions in production and disposal.</p> <p>Students can describe and apply methods of production planning and control as well as quality management.</p> <p>They broaden their understanding of the subject area by preparing excursions as part of their individual learning and by delving into case studies with the cooperating business partners visited.</p>
Module language	German
Module availability	Summer semester

### Module 9: Logistics Management II

ECTS Credits (CP) / Workload (h)	5 / 150
Module examination	Group project including a term paper (8 weeks for submission) and a presentation (min. 15 min./person, max. 180 min. for the whole presentation)
Learning outcomes and skills	<p>The students can explain the interrelationships in distribution logistics planning, in particular transport planning, and give an overview of key figures in the field of distribution logistics.</p> <p>The students understand the categories of companies and their specific logistics requirements (network structures, flow principles) and can describe the logistical structures and their components. The participants have an understanding of trends and strategies in the production industry as well as their effects on (inter-)national logistics and are able to explain them.</p> <p>The students are familiar with global transport networks and their participants from a holistic and intermodal perspective and can apply this information to practical questions. Students can apply the acquired methods and analysis techniques of logistics management to (simple or complex) business management issues (case studies). They are able to justify processes and results and to present and communicate facts comprehensively. They can also back their findings up theoretically to experts (presentation) and organize and plan interdisciplinary activities in a structured, goal-oriented way (excursion planning).</p> <p>The students strengthen their social competence while working on both smaller and larger case studies. Students improve their ability to cooperate, communicate and deal with conflict.</p>
Module language	German
Module availability	Summer semester

**Module 10: International Law and Labor Law**

ECTS Credits (CP) / Workload (h)	5 / 150
Module examination	Oral examination (min. 15, max. 30 min.)
Learning outcomes and skills	<p>The students are able to recognize the international dimension of economic activities and are able to reflect on specific labor and international legal issues and develop their own problem-oriented solutions.</p> <p>The students gain technical, methodological, social and personal competence through discussions and group work.</p>
Module language	German
Module availability	Summer semester

**Module 11: Human Resources Management**

ECTS Credits (CP) / Workload (h)	5 / 150
Module examination	Written examination (120 min.)
Learning outcomes and skills	<p>The students can contextualize human resources management in the framework of corporate management. They are familiar with the basics, goals and key aspects of a modern approach to human resources. They are able to substantiate the content of the functions of personnel management and know possibilities for guiding employee performance and behavior.</p> <p>The students are able to reflect on their own ideas and procedures and to compare them critically.</p>
Module language	German
Module availability	Summer semester

**Module 12: Corporate Management and Controlling**

ECTS Credits (CP) / Workload (h)	5 / 150
Module examination	Written examination (120 min.)
Learning outcomes and skills	<p>Students can explain controlling as a function and how to organize it in companies. Using the balanced scorecard, students learn how to specify strategic goals, their cause-and-effect relationships and how to measure them with key figures. They can use other specific controlling instruments such as multidimensional contribution accounting and process cost accounting to support decision making and guide behavior. Students learn how the tools can be applied in companies through case studies.</p> <p>The students are able to present complex facts in a structured, specific way appropriate for particular audiences and to apply the acquired knowledge to individual cases.</p>
Module language	German
Module availability	Summer semester

**Module 13: Change Management and Conflict Management**

ECTS Credits (CP) / Workload (h)	5 / 150
Module examination	Project (8 weeks for submission) with a presentation (min. 15 min., max. 30 min.)
Learning outcomes and skills	<p>Students are able to:</p> <ul style="list-style-type: none"> <li>Understand the relevance of change compared to stability,</li> </ul>

	<ul style="list-style-type: none"> <li>• Acknowledge the connection between management and change,</li> <li>• Describe the different types of change and understand their impact on practical work,</li> <li>• Identify and apply different types of change in everyday business,</li> <li>• Recognize the necessity of change in everyday operations,</li> <li>• Apply change management processes and concepts,</li> <li>• Identify possible barriers to change,</li> <li>• Understand the phenomenon of conflicts as well as its causes and effects,</li> <li>• Deal with different types of conflicts utilizing conflict management tools.</li> </ul> <p>Students are sensitized to recognize the possibilities and challenges that an organizational change process brings with it and to point out possible solutions. They are able to identify change concepts and apply them to practical questions or case studies and systematically evaluate the findings. They can work successfully in a team and apply the conflict and change concepts learned to teamwork to cooperate more effectively.</p>
Module language	German
Module availability	Winter semester

#### Module 14: IT-Supported Process Management with ERP Systems

ECTS Credits (CP) / Workload (h)	5 / 150
Module examination	Project (12 weeks for submission) with a presentation (min. 15 min., max. 30 min.) Graded on a pass/fail basis
Learning outcomes and skills	<p>The students master methods of designing decision and business processes as well as mapping these in ERP systems, specifically, SAP. They can implement business processes from case studies from the areas of accounting (e.g. controlling and/or finance) and logistics (e.g. sales, materials management, production planning) and possibly human resources directly on the computer.</p> <p>Students are able to reflect on and critically compare their own ideas and procedures. They are particularly competent in methods, especially in analysis and synthesis, and can adequately apply the knowledge and information they have acquired both in practical computer work and in their reflection on this work. They are able to identify problems and errors in the implementation of decision-making and business processes independently, analyze them systematically and, if necessary, correct them. Students can formulate the results of their analysis precisely and transparently and discuss them with their peers.</p>
Module language	German
Module availability	Winter semester

#### Module 15: Supply Chain Management

ECTS Credits (CP) / Workload (h)	5 / 150
Module examination	Written examination (120 min.)
Learning outcomes and skills	<p>The students have the ability to analyze and optimize continuous, efficient and flexible processes involving customers, suppliers, producers and service providers; the prospective industrial engineers strengthen their professional competencies in process optimization in the logistics chain. The students gain a point of view that encompasses an entire business and are therefore suited for work in companies that are faced with technical and economic problems in a logistical chain. They can present and explain process management based on the flow principle and related methods in logistics as well as explain and define the principle of supply chain management or the SCM level and describe essential elements of a logistics chain and its (information) requirements (suppliers and service providers).</p>



	<ul style="list-style-type: none"> <li>• Presentation of the flow principle and process management in logistics: what processes must look like and which tools are available. Explanation of the general process model.</li> <li>• Definition of supply chain management and SCM levels. Involved partners and benefit approach of SCM: Bull-whip effect, stock building, from push to pull principle, trends in SCM.</li> <li>• The logistics chain: presentation of the essential elements of a logistics chain and their (information) requirements (suppliers and service providers). When does SCM make sense? What is the goal?</li> <li>• Catalysts of SCM. What is needed to implement SCM. Which methods does SCM use? Optimization approaches and controlling.</li> <li>• Presentation of trends in SCM, supply chain collaboration, presentation of success stories.</li> <li>• Inhibiting factors of SCM: psychology of networks, IT interfaces.</li> <li>• The next step: integration of service providers (4PL), further reduction of vertical integration, IT platforms.</li> <li>• Connection of further processes to the SCM processes or presentation of the benefits of the connection of such processes.</li> <li>• Advanced Planning Systems: application and case studies.</li> </ul>
Module language	German
Module availability	Winter semester

## Module 16: Business Management and Compliance

ECTS Credits (CP) / Workload (h)	5 / 150
Module examination	Written examination (120 min.)
Learning outcomes and skills	<p>The students master the tasks of a manager and are able to motivate employees, promote talents, communicate in a goal-oriented manner and develop employee potential. They master leadership techniques and the rules of successful leadership. They develop leadership skills both in technical and disciplinary terms. The students master the handling of complexity and the necessary analysis tools for the particular management environment. They can lead laterally as well as in a generational context. The students master the basics of mentoring and coaching and can realistically evaluate themselves as leaders.</p> <p>The students are able to recognize organizational design alternatives, evaluate organizational structures and processes against their alternatives, understand and evaluate leadership concepts, appreciate new developments of the organization and make organizational design decisions.</p> <p>The students can identify liability risks for legal entities, shareholders, managers and supervisory bodies. They can distinguish between internal and external liability as well as between liability in civil law, criminal law and public law. They master the basics of compliance and corporate governance. The students are able to establish a compliance structure and use compliance instruments. They are able to understand the immanence of risk associated with business decisions and to record and classify risks. They are able to set up a risk management system.</p> <p>The students are able to reflect on and critically compare their own ideas and approaches. They have the ability to analyze complex situations.</p>
Module language	German
Module availability	Winter semester

**Module 17: Entrepreneurship und Business Development**

ECTS Credits (CP) / Workload (h)	5 / 150
Module examination	Written examination (120 min.)
Learning outcomes and skills	<p>The students master the basics of entrepreneurship, the special field of risk-bearing entrepreneurship as well as the basics of innovation and business development. In addition, they have specialized knowledge and are familiar with procedures for planning and supporting the founding and the innovation processes. They can present the strengths and weaknesses of start-up and innovation projects in medium-sized and larger companies utilizing technical and methodological competences and can assess their opportunities and risks.</p> <p>The students have the ability to:</p> <ul style="list-style-type: none"> <li>• Reflect on entrepreneurial competences,</li> <li>• Methodically develop the skills necessary for start-up management,</li> <li>• Apply their knowledge of the choice of business type and financing form,</li> <li>• Reflect on and build business development competencies,</li> <li>• Assess the institutional, legal and financing conditions of start-ups,</li> <li>• Apply knowledge and skills regarding the management of innovation processes,</li> <li>• Develop practical business development skills in medium-sized and larger companies as well as practical innovation skills in medium-sized and larger companies.</li> </ul> <p>They can:</p> <ul style="list-style-type: none"> <li>• Assess success and risk factors of innovations,</li> <li>• Check business models,</li> <li>• Create business plans,</li> <li>• Research, evaluate and, if necessary, apply for funding.</li> </ul> <p>The students work on these subject areas with a focus on problem solving and sometimes case solving, thus strengthening their interdisciplinary skills. A special emphasis is placed on the development of creative solutions to entrepreneurship, innovation and business development problems.</p> <p>In addition, the students gain the following competencies:</p> <ul style="list-style-type: none"> <li>• Independent thinking and decision-making in entrepreneurship, innovation and business development activities,</li> <li>• Techniques of analysis and information gathering in entrepreneurship, innovation and business development activities and the ability to lead innovation-oriented working groups in a company,</li> <li>• Networked thinking on interdisciplinary issues in entrepreneurship, innovation and business development activities</li> </ul>
Module language	German
Module availability	Winter semester

**Module 18: Corporate Finance**

ECTS Credits (CP) / Workload (h)	5 / 150
Module examination	Written examination (120 min.)
Learning outcomes and skills	<p>Investment:</p> <p>The students master the basic methods for the evaluation of investment projects by means of key mathematical financial figures both theoretically and in their possibilities for practical application.</p> <p>They are able to apply the methods using spreadsheet programs and other tools, and to assess complex investment alternatives, comparing them and evaluating their advantageousness.</p> <p>The students master the basic approaches for using theoretical decision-making models</p>

	<p>to assess problems of uncertainty. They are able to apply them and solve practical investment problems.</p> <p>Financing:</p> <p>The students are able to describe the tasks and basic instruments of financial management and to distinguish them from each other.</p> <p>The students are able to analyze the different instruments of corporate finance and evaluate the economic impact of their application.</p> <p>The students are familiar with the different forms of financing, financial instruments and financial markets. They can explain how they work and their relevance for business practice.</p> <p>The students are able to economically evaluate measures of financing policy and to answer questions about corporate financing. The students are able to work out and present complex issues and to apply the acquired knowledge to individual cases.</p>
Module language	German
Module availability	Winter semester

### Module 19: Master-Thesis with Colloquium

ECTS Credits (CP) / Workload (h)	30 / 900
Module examination	Master-Thesis (submission period 24 weeks) with colloquium (min. 30, max. 45 min.)
Learning outcomes and skills	<p>The Master-Thesis is a supervised final thesis which demonstrates the student's ability to independently apply scientific methods within a specified period of time.</p> <p>Students generate solutions to problems in new and unknown subject areas based on in-depth and/or specialized knowledge, especially in the field of industrial engineering. The topic can be interdisciplinary or focus on a topic from the practical case project.</p> <p>The students find their own research topics, choose suitable ways to put them into practice and justify them. The results reflect them in a critical light and indicate which questions are still to be answered.</p> <p>The Master-Thesis must be submitted in writing.</p>
Module language	German
Module availability	Winter and summer semester