

# Module Handbook Master's Study Program Technology to Market (M.Eng.)



University of Applied Sciences Emden/Leer  
Faculty Technology  
Department Mechanical Engineering

This module handbook is a non-binding draft. Subject to change.

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## Overview

<b>Faculty</b>	Technology
<b>Division</b>	Mechanical Engineering
<b>Degree</b>	Master of Engineering (M.Eng.)
<b>Standard period of study</b>	3 Semester full time (FT); 5 Semester part time (PT)
<b>Total Workload</b>	90 ECTS

## Introduction

The further education Master's degree program Technology to Market (M.Eng.) is designed for graduates of engineering or natural science Bachelor's programs who wish to further expand their existing expertise. Building on solid foundations in fields such as mechanical engineering, electrical engineering, computer science, natural sciences, or related technical disciplines, the program provides advanced knowledge on how technological developments can be successfully transformed into market-ready products, services, and business models.

The goal of the program is to prepare students for demanding roles in innovation, development, and technology management. To achieve this, the curriculum integrates technological expertise with economic understanding and essential professional skills.

The study program is structured into three core pillars:

1. Technical Modules – These deepen and broaden the students' engineering and scientific knowledge, with a focus on modern technologies, development processes, and practical problem-solving strategies.
2. Professionalization Modules – These modules strengthen cross-disciplinary competencies such as project management, academic and scientific work, technical communication, and the ability to coordinate complex interdisciplinary processes.
3. Business Modules – These form an important and integral pillar of the Master's program. They provide fundamental and advanced knowledge in business administration, innovation management, business model development, and market analysis. It is particularly emphasized that economic competencies are essential for successfully positioning technological potentials on the market.

The modules are designed so that students without prior economic knowledge can also study them successfully, while still meeting the academic standards and level of a Master's degree.

The Technology to Market Master's program thus equips students to manage technological innovations throughout the entire value chain – from the initial idea to development and market launch – and to take on responsible positions at the intersection of technology and business.

The introductory modules in the Business Administration/Management column (Business Modules) are conducted at Master's level. Students in the program have acquired at least one year of professional experience after completing their bachelor's degree. In addition to the social and professional competencies, personal competencies of the students are also important, which give the profile of the Technology to Market program the master's level.

In lectures and seminars, students can directly apply and reflect on the skills and knowledge they have acquired to practical professional situations, problems and issues. Students gain practical experience in teams (Project report) as well as independently and learn to work on tasks in the fields of management, law and business administration and to solve problems under qualified guidance. The students' previous knowledge of the professional environment and the additional insights into economic, administrative, legal and social contexts of the professional field gained as a result can be incorporated into their studies and promote their personal and professional development.

The international profile of the students is closely related to the modules of the Master's program in Technology to Market. The students' previous knowledge enables them to grasp the contents of the master's program and thus to follow the learning objectives.

# Module overview

## Technology to Market

Master Modul		
Master Thesis with Colloquium	28 ECTS	
Introduction to Scientific Working	2 ECTS	30 ECTS

Technical Module		Professionalization		Business Module		
<ul style="list-style-type: none"> <li>● Engineering</li> </ul>	<ul style="list-style-type: none"> <li>○ Technical Module</li> </ul>	<ul style="list-style-type: none"> <li>● Design Thinking</li> </ul>	<ul style="list-style-type: none"> <li>○ Professionalization Module</li> </ul>	<ul style="list-style-type: none"> <li>● Quality Management</li> </ul>	<ul style="list-style-type: none"> <li>○ Business Module</li> </ul>	2./1. Sem.
5 ECTS	5 ECTS	5 ECTS	5 ECTS	5 ECTS	5 ECTS	30 ECTS
<ul style="list-style-type: none"> <li>● Sustainability in Engineering</li> </ul>	<ul style="list-style-type: none"> <li>○ Technical Module</li> </ul>	<ul style="list-style-type: none"> <li>● Leadership &amp; Negotiation</li> </ul>	<ul style="list-style-type: none"> <li>○ Professionalization Module</li> </ul>	<ul style="list-style-type: none"> <li>● Project Business Plan</li> </ul>	<ul style="list-style-type: none"> <li>○ Business Module</li> </ul>	1./2. Sem.
5 ECTS	5 ECTS	5 ECTS	5 ECTS	5 ECTS	5 ECTS	30 ECTS

○ Mandatory elective module

Legende:

● Mandatory module

○ Mandatory elective module

○ Technical Module	○ Professionalization	○ Business Module
Business Analytics Power Plant Engineering Computer Sciences Technical Project Current Topic T	Advanced Project Management Sustainable Innovation Management Introduction to Data Sciences Communication + Culture	Controlling International Commercial Law Marketing ERP-Systems Project B Current Topic B

# General Definitions

Every module of Technology to Market follows the principles below:

- English is the obligatory language of all modules and courses.
- One module has a time span of one semester and a successfully completed semester is rewarded with 30 ECTS.
- Every successfully completed module rewards students with 5 ECTS.
- The program has a modular structure, comprising mandatory and elective modules. These modules enable an interdisciplinary study in the fields of key qualifications, economics and technology.
- Generally, the order of modules is arbitrary and some of the elective courses are upon necessity. For particular courses the requirements of the module handbook are applicable. Thus, students are able to attend the offered courses each semester.
- By taking elective modules, individual specialization and deepening is possible. The scope of the mandatory modules is 30 credit points (ECTS). The modules from the compulsory elective area amount to 30 credit points (ECTS). In addition, there is the Master's thesis with colloquium amounting to 28 credit points (ECTS) in addition to the compulsory lecture Introduction to Scientific Working with 2 credit points (ECTS) amounting to a total of 30 credit points (ECTS). One credit point corresponds to 30 hours of work for the student.
- Courses not being part of the general curriculum of the study program Technology to Market are available upon request. A participation above 60% leads to a selection of the course as an elective module.
- The modules from the first and second semesters do not build on each other in terms of content, so that it is possible to start studying in the summer or winter semester. In the summer semester the modules of the first semester are offered, in the winter semester the modules of the second semester. Students who begin their studies in the summer semester first hear the courses from the first semester. In the following semester, they hear the courses from the second semester. For students who begin their studies in the winter semester, the order is reversed.

# Abbreviations

## Abbreviations and forms of examination

(DV)	creation and documentation of computer programs
(K) (#)	written exam (processing time in time hours)
(M)	oral examination
(P)	project report
(R)	presentation
(H)	report
(PO)	portfolio exam
(SWS)	semester hours per week
(S)	Master thesis with Colloquium

According to the General Part of the Master Examination Regulations (Part A)

## 2. Mandatory Modules

## 2.1 Sustainability in Engineering *(Summer semester)*

<b>Lecturer in charge:</b>	Dr. Jumoke Oladejo
<b>Form:</b>	Seminar-style lectures with workshops and seminars
<b>Type:</b>	Mandatory module
<b>Contact-Time (h):</b>	60
<b>Self-Study-Time (h):</b>	90
<b>Exam:</b>	Portfolio exam (PO)
<b>ECTS:</b>	5
<b>Prerequisite for participation:</b>	-
<b>Applicability of the module:</b>	MTTM, MTM

### **Competences**

This module introduces students to the fundamental principles, frameworks, tools, and decision-making approaches of sustainability in engineering. It explores global challenges such as climate change, material scarcity, and social responsibility, while equipping students with practical skills for life cycle analysis, EcoAudit, sustainability indicators and foresight analysis. Students will learn to critically evaluate sustainability strategies, and policy frameworks, apply quantitative and qualitative tools, and communicate their findings in academic and professional contexts.

### **Content**

- Define and critically compare key concepts of sustainability.
- Describe global frameworks (SDGs, EU Green Deal, ISO standards) and their relevance to engineering practice.
- Understand the technical basis of environmental assessment tools (EcoAudit, LCA, indicators).
- Recognise material supply chain risks and circular economy strategies.
- Critically evaluate sustainability measures, identifying trade-offs and limitations between environmental, economic, and social dimensions of sustainability.
- Integrate sustainability concepts into their own engineering discipline.
- Integrate sustainability goals into project planning, risk assessment, and digital transformation strategies.
- Communicate sustainability analyses effectively in written and oral form to technical and managerial audiences.

### **Literature**

- Ashby, M.F. *Materials and Sustainable Development*. 2nd Edition. Butterworth-Heinemann, 2023.
- United Nations. *The Sustainable Development Goals*. 2015.
- European Commission. *European Green Deal*. 2020.
- ISO 14040/14044 standards on Life Cycle Assessment.
- UNEP Life Cycle Initiative, GRI Reporting Standards (online resources).

### **Course**

<b>Lecturer</b>	<b>Title</b>	<b>SWS</b>
Dr. Jumoke Oladejo	Sustainability in Engineering	4

## 2.2 Leadership & Negotiation *(Summer semester)*

<b>Lecturer in charge:</b>	Dr. Lorenzo Gios
<b>Form:</b>	seminar is based on the assessment-center principle
<b>Type:</b>	Mandatory module
<b>Contact-Time (h):</b>	60
<b>Self-Study-Time (h):</b>	90
<b>Exam:</b>	Report (H)
<b>ECTS:</b>	5
<b>Prerequisite for participation:</b>	-
<b>Applicability of the module:</b>	MTTM, MBI, MTM

### **Competences**

The module provides students with a solid understanding of key concepts of leadership, negotiation and communication. Upon completion of the module, participants should be able to classify key leadership models and theoretical approaches, assess their strengths and limitations, and reflect on their application in organizational contexts. In addition, they will acquire in-depth knowledge of basic and advanced communication principles and understand their significance for professional communication and decision-making processes. Students should be enabled to systematically analyze challenges in leadership and negotiation situations and derive theory-based solutions. The module thus contributes to the development of a comprehensive and scientifically sound understanding of how to design effective leadership and negotiation processes.

### **Content**

Students develop technical, methodological, and social-communicative skills that enable them to handle leadership and negotiation situations professionally and reflectively. They acquire the ability to apply leadership models and negotiation techniques to specific issues, prepare negotiations in a structured manner, and select appropriate strategies and tactics in a targeted manner. Methodologically, they are enabled to use analytical tools to evaluate leadership situations, systematically design decision-making processes, and constructively overcome communicative challenges. In the area of social and personal skills, students strengthen their communication skills, conflict resolution skills, and empathy, as well as their ability to reflect on their own leadership and negotiation behavior. Overall, they acquire the competence to act responsibly, cooperatively, and solution-oriented in organizational contexts.

### **Literature**

- Fisher, R., Ury, W., & Patton, B. (2011). *Getting to Yes: Negotiating Agreement Without Giving In*. Penguin
- Kotter, J. (2012). *Leading Change*. Harvard Business Review Press.
- Northouse, P. G. (2022). *Leadership: Theory and Practice*. Sage.
- Wess R., Ross. W. (1996) *Make It So: Leadership Lessons from Star Trek: The Next Generation*; Gallery Books
- Yukl, G. (2013). *Leadership in Organizations*. Pearson.
- Hoopes, L. L., & Kelly, M. (2004). *Managing change with personal resilience: 21 keys for bouncing back & staying on top in turbulent organizations*. MK Books.
- Covey, S. M., & Merrill, R. R. (2006). *The speed of trust: The one thing that changes everything*. Simon and Schuster.
- Stone, D., Patton, B., & Heen, S. (2023). *Difficult conversations: How to discuss what matters most*. Penguin.
- Conner, D. R. (2006). *Managing at the speed of change: How resilient managers succeed and prosper where others fail*. Random House.
- Raines, C. (2002). *Managing millennials. Connecting Generations: The Sourcebook*, 16.
- Bannys, F. (2012). *Interkulturelles Management: Konzepte und Werkzeuge für die Praxis*. John Wiley & Sons.

### **Course**

<b>Lecturer</b>	<b>Title</b>	<b>SWS</b>
Dr. Lorenzo Gios	Leadership & Negotiation	4

## 2.3 Quality Management *(Winter semester)*

<b>Lecturer in charge:</b>	Prof. Dr. Monika Blattmeier
<b>Form:</b>	lecture presentations and papers (acquired by the students according to given conditions)
<b>Type:</b>	Mandatory module
<b>Contact-Time (h):</b>	60
<b>Self-Study-Time (h):</b>	90
<b>Exam:</b>	Report (H)
<b>ECTS:</b>	5
<b>Prerequisite for participation:</b>	-
<b>Applicability of the module:</b>	MTTM, MBI, MBIDA, MTM

### **Competences**

Understanding the importance of Quality Management and estimating the potential of QM-oriented approaches. Understanding of QM philosophies and QM dominated thinking and becoming acquainted with QM methods and QM tools. Practice in team-oriented methods as well as deepening of comprehensive thinking. Furthermore, stabilization of structured, documented work approaches plus strengthening of customer-oriented work approach.

### **Content**

- Introduction
- Development and History of QM
- QM philosophies
- ISO 9000 and extended Approaches
- QM Tools and Methods in R&D and Production
- Problem solving Tools
- Improvement Methods
- Management Tools

### **Literature**

- Sommerhoff, B.: QM im Wandel: Personenzentriertes Innovations- und Qualitätsmanagement -München: Hanser, 2021
- Tarvin, P.: Leadership & Management of Machining - München: Hanser, 2016
- Gryna, F.M.: Juran's quality planning & analysis Boston (MA): McGraw-Hill, 2007
- Masing, W.: Handbuch des Qualitätsmanagements - 6. Auflage München: Hanser, 2014
- Linß, G.: Qualitätsmanagement für Ingenieure - München: Fachbuchverlag Leipzig in Hanser, 2011
- Pfeifer, T.: Quality management: strategies, methods, techniques - München: Hanser, 2002
- Hering, E.: Qualitätsmanagement für Ingenieure -5. Auflage- Berlin: Springer, 2003
- Juran, J.M.: Juran's Quality Handbook - 6th edition - New York (NY): McGraw-Hill, 2010
- DIN EN ISO 9000:2015 and related standards
- SA8000; SCC, OHSAS 18001
- actual developments and subjects: Internet

### **Course**

<b>Lecturer</b>	<b>Title</b>	<b>SWS</b>
Prof. Dr. Monika Blattmeier	Quality Management	4

## 2.4 Engineering *(Winter semester)*

<b>Lecturer in charge:</b>	n.n.
<b>Form:</b>	lecture, group work
<b>Type:</b>	Mandatory module
<b>Contact-Time (h):</b>	60
<b>Self-Study-Time (h):</b>	90
<b>Exam:</b>	Report (H)
<b>ECTS:</b>	5
<b>Prerequisite for participation:</b>	-
<b>Applicability of the module:</b>	MTTM

### **Competences**

Students will be able to identify, analyze, and integrate the key boundary conditions of product development into engineering decisions. They can translate sustainability requirements into actionable design criteria (life-cycle thinking, eco-design, LCA, circularity), understand and manage intellectual property (patents, utility models, trademarks, copyrights) including freedom-to-operate, perform materials selection under technical, economic, environmental, and regulatory constraints, and interpret applicable regulations, standards, and laws to ensure compliance (e.g., CE marking, conformity assessment). They can make trade-offs transparently, assess and document risks, and communicate decisions and compliance evidence across disciplines and stakeholders.

### **Content**

Sustainability in engineering (eco-design principles, life-cycle assessment, circular economy, carbon footprint, supply chain considerations); intellectual property fundamentals (prior art search, freedom-to-operate, IP strategy); materials selection methods (e.g., Ashby charts, performance indices), data sources, restricted substances, recyclability, critical materials, cost; regulatory landscape (structure of standards and legislation, key directives and standards such as ISO/IEC, REACH, RoHS), conformity assessment and risk management, product and occupational safety; case studies and exercises on integrating boundary conditions into design decisions and preparing compliant technical documentation.

### **Literature**

- Van Doorselaer, Karine; Koopmans, Rudolf J. (2021): Ecodesign: A Life Cycle Approach for a Sustainable Future. 1. Aufl. Carl Hanser Verlag GmbH & Co. KG. ISBN 978-1-56990-895-2. (269 S.)
- Orth, Peter; Bruder, Jürgen; Rink, Manfred (2022): Kunststoffe im Kreislauf: Vom Recycling zur Rohstoffwende. ISBN 978-3-658-37813-4 (Print), ISBN 978-3-658-37814-1 (eBook). DOI: <https://doi.org/10.1007/978-3-658-37814-1>.
- Ashby, Michael F. (2005): Materials Selection in Mechanical Design. 3. Aufl. Elsevier/Butterworth-Heinemann.
- DIN EN ISO 14040 (2006): Umweltmanagement – Ökobilanz – Grundsätze und Rahmenbedingungen (ISO 14040:2006). Berlin: Beuth Verlag.
- DIN EN ISO 14044 (2006): Umweltmanagement – Ökobilanz – Anforderungen und Anleitungen (ISO 14044:2006). Berlin: Beuth Verlag.
- Hauschild, M. Z.; Rosenbaum, R. K.; Olsen, S. I. (Hrsg.) (2018): Life Cycle Assessment: Theory and Practice. Springer. ISBN 978-3-319-56474-6. DOI: <https://doi.org/10.1007/978-3-319-56475-3>
- Gibson, Ian; Rosen, David; Stucker, Brent; Khorasani, Mahyar (2020): Additive Manufacturing Technologies. ISBN 978-3-030-56126-0 (Hardcover), ISBN 978-3-030-56127-7 (eBook). (Softcover: ISBN 978-3-030-56129-1, 2021).
- Graedel, T. E.; Allenby, Braden R. (1995): Industrial Ecology. Prentice Hall. ISBN 978-0130467133 (ISBN-10: 0130467138).
- Ullman, David (2010): The Mechanical Design Process. 4. Aufl. McGraw-Hill Education. ISBN 978-0072975741 (ISBN-10: 0072975741).

### **Course**

<b>Lecturer</b>	<b>Title</b>	<b>SWS</b>
n.n.	Engineering	4

## 2.5 Design Thinking *(Winter semester)*

<b>Lecturer in charge:</b>	n.n.
<b>Form:</b>	lecture, group work
<b>Type:</b>	Mandatory module
<b>Contact-Time (h):</b>	60
<b>Self-Study-Time (h):</b>	90
<b>Exam:</b>	Report (H)
<b>ECTS:</b>	5
<b>Prerequisite for participation:</b>	-
<b>Applicability of the module:</b>	MTTM

### **Competences**

- learn about the design thinking method.
- understand the methodological process of design thinking and its fundamentals.
- experience the important perspective of users.
- can contextualise design thinking with other project methods.
- learn to optimise spaces for creative thinking and working.
- can apply creativity methods.
- learn to think and act innovatively and methodically.
- learn diversity and agility in an interdisciplinary innovative project.
- deal with real-life problems.
- recognise the problems involved in creating prototypical solutions using a wide variety of tools in incremental work phases.
- are able to apply interdisciplinary knowledge, involve the problem owner/customer in the project in an agile manner and present work results.
- have the competence to carry out projects independently in teamwork.
- are able to analyse the context of the problem and discuss it in collaboration with companies in heterogeneous teams.

### **Content**

- **Why?** One major advantage of design thinking is the composition of interdisciplinary teams. Each member of a project team contributes their own expertise and is equally valued as an expert by the other team members. Design thinking is also highly user-centred. This is because the iterative approach ensures that the user is always involved in all important development steps. The result of a product or service development can thus have a lasting positive impact on user satisfaction.
- **What?** Design thinking is a systematic approach to complex problems in all areas of life.
- **How?** Design thinking requires constant feedback between the developer of a solution and its target group. Design thinkers ask the end user questions and closely examine their processes and behaviours. Solutions and ideas are made visible and communicable as early as possible in the form of prototypes so that potential users can test them and provide feedback long before completion or market launch. In this way, design thinking produces practical results. A special feature is the combination of interdisciplinary expertise, which enables participants to develop particularly creative solutions. The methodical approach allows learned skills to be tested and implemented directly on real-world challenges.

### **Course**

<b>Lecturer</b>	<b>Title</b>	<b>SWS</b>
n. n.	Design Thinking	4

## 2.6 Project Business Plan *(Summer semester)*

<b>Lecturer in charge:</b>	Prof. Dr. Olaf Passenheim
<b>Form:</b>	lecture, group work
<b>Type:</b>	Mandatory module
<b>Contact-Time (h):</b>	60
<b>Self-Study-Time (h):</b>	90
<b>Exam:</b>	Report (H)
<b>ECTS:</b>	5
<b>Prerequisite for participation:</b>	-
<b>Applicability of the module:</b>	MBIDA

### **Competences**

Students shall be enabled to understand, develop and evaluate the core elements of a business plan. They acquire an in-depth understanding of the structure and logic of a systematic planning approach and learn to design business models by considering market, customer and competitive factors.

Furthermore, the module aims to strengthen students' ability to design financial plans, analyze the economic viability of a business model, and methodically identify risks throughout the phases of business creation and development, as well as to derive appropriate risk mitigation measures.

Students are able to communicate complex information clearly, collaborate constructively in interdisciplinary teams, and make data-driven decisions. Overall, they develop a practice-oriented and analytically sound understanding of how a business plan can be successfully planned and implemented from a strategic, economic and operational perspective.

### **Content**

- independently develop a complete business plan
- critically analyze and evaluate business plans
- present business plans in an audience-oriented manner (e.g., for investors or management)
- systematically design and structure business models
- analyze market, competitive and customer data in a rigorous manner
- assess the economic viability of a business model based on financial plans
- methodically identify risks in business creation and business development
- derive appropriate measures for risk mitigation
- make data-driven decisions
- collaborate goal-oriented in interdisciplinary teams

### **Literature**

- Barringer, B. R., & Ireland, R. D. (2023): *Entrepreneurship: Successfully Launching New Ventures*
- Osterwalder, A., & Pigneur, Y. (2010). *Business model generation: A handbook for visionaries, game changers, and challengers*. Wiley.
- Passenheim, O. (2013). *Project Management*.
- Blank, S., & Dorf, B. (2020): *The Startup Owner's Manual*

### **Course**

<b>Lecturer</b>	<b>Title</b>	<b>SWS</b>
Prof. Dr. Olaf Passenheim	Projects Business Plan	4

## 2.7 Master Thesis with Colloquium & Introduction to Scientific Working

<b>Lecturer in charge:</b>	Professor / Lecturer of the study program
<b>Form:</b>	To a large extent independent development of a problem and supervision.
<b>Type:</b>	Mandatory module
<b>Contact-Time (h):</b>	90
<b>Self-Study-Time (h):</b>	810
<b>Exam:</b>	scientific report, Master thesis with Colloquium (S)
<b>ECTS:</b>	30

### **Competences**

The students are able to work on a given problem. They are able to explore the current scientific literature independently and draw conclusions.

In doing so, they apply their acquired knowledge and develop goal-oriented solutions within the framework of their Master's thesis. They have in-depth knowledge in the field of project management and can apply this knowledge adequately in scientific projects.

### **Content**

Current topics within the field of product development including

- technical deepening or one of the deepening within the department of technical engineering
- Independent acquisition of a subject with the help of technical literature and other sources
- Layout of verbal presentations and written scientific papers with the potential for scientific publication.

### **Literature**

- Guide to Writing a Seminar Paper; Göx, Robert
- Special literature concerning the topic

### **Course**

<b>Lecturer</b>	<b>Title</b>	<b>SWS</b>
Prof. Dr. Kathrin Ottink	Introduction to Scientific Working	2
Professor / Lecturer of the study program	Master Thesis and Colloquium	28

### 3. Mandatory Elective Modules

## 3.1 Power Plant Engineering *(Winter semester)*

<b>Lecturer in charge:</b>	Prof. Dr. Christoph Jakiel
<b>Form:</b>	Seminar form lecture, exercises
<b>Type:</b>	Elective module
<b>Contact-Time (h):</b>	60
<b>Self-Study-Time (h):</b>	90
<b>Exam:</b>	Written exam (K2)
<b>ECTS:</b>	5
<b>Prerequisite for participation:</b>	-
<b>Applicability of the module:</b>	MTTM, MTM

### **Competences**

Students will be able to describe and analyze the various steps in the conversion of primary energy to electrical energy (and other final forms of energy). This includes understanding the classification of energy and the principles of energy conversion.

Further, they are able to select the appropriate conversion process or technical device (machine, power plant, etc.) depending on the source of energy available and the form of energy required. This includes knowledge of the main types of power plants and other energy conversion machines, as well as their core components.

For exemplary conversion processes, the students can also create calculation or simulation models and calculate performance and other characteristics, and on this basis analyze the processes in terms of efficiency and other technical, economic and ecological parameters and carry out basic optimizations.

### **Content**

- Energy: terms and classification, primary forms and sources of energy.
- Principles of energy conversion, key figures and efficiency
- Cycle processes for energy conversion (basics)
- Heat engines and heat pump processes: Function, efficiency and performance figures, main components, optimization options.
- Examples of conventional and regenerative thermal power plants and heat pumps

### **Literature**

- Michaelides, Efstathios E.: Alternative energy sources, Springer, 2012.
- Sarkar, Dipak K.: Thermal Power Plant – Design and Operation, Elsevier, 2021.
- Turns, Stephen R.: Thermodynamics – Concepts and Applications, Cambridge University Press, 2006.

### **Course**

<b>Lecturer</b>	<b>Title</b>	<b>SWS</b>
Prof. Dr. Christoph Jakiel	Power Plant Engineering	4

## 3.2 Computer Sciences *(Winter semester)*

<b>Lecturer in charge:</b>	Prof. Dr. Rüdiger Götting
<b>Form:</b>	Seminar form lecture, exercises
<b>Type:</b>	Mandatory elective module
<b>Contact-Time (h):</b>	60
<b>Self-Study-Time (h):</b>	90
<b>Exam:</b>	preparation and documentation of a Computer Program (DV)
<b>ECTS:</b>	5
<b>Prerequisite for participation:</b>	-
<b>Applicability of the module:</b>	MTTM, MTM

### **Competences**

By completing this course, students are able to implement complex project using standard libraries. Moreover, the students understand standard paradigms in creating GUIs and implementing multi-thread applications. They comprehend object-oriented paradigms and make use of standard methods in object-oriented software-systems. The students are able to develop an application using an ide.

### **Content**

The course contents are summarized by four topics:

- Advanced concepts of a higher language
- Frameworks
- design patterns
- software development using an ide

### **Literature**

- J. T. Streib, T. Soma: Guide to Java; Springer Verlag, 2014
- Lars Vogel: Eclipse IDE: Eclipse IDE based on Eclipse 4.2 and 4.3. vogella series.; 2013
- Lecture notes

### **Course**

<b>Lecturer</b>	<b>Title</b>	<b>SWS</b>
Prof. Dr. Rüdiger Götting	Computer Sciences	4

## 3.3 Advanced Project Management *(Winter semester)*

<b>Lecturer in charge:</b>	Prof. Dr. Andreas Haja
<b>Form:</b>	lecture, group discussion, case studies
<b>Type:</b>	Mandatory elective module
<b>Contact-Time (h):</b>	60
<b>Self-Study-Time (h):</b>	90
<b>Exam:</b>	Written exam (K2)
<b>ECTS:</b>	5
<b>Prerequisite for participation:</b>	-
<b>Applicability of the module:</b>	MTTM, MBI, MBIDA, MTM

### **Competences**

The students are able to plan and execute a technical project. They know the difference between classic and agile project management and are able to form a SCRUM team and independently allocate roles within it. The students are able to establish communication interfaces to other teams and to plan and execute a complex work process. Furthermore, they are able to present the project status and work results in a structured manner.

### **Content**

Over the course of the semester, the students carry out an elaborate business game in the context of which an autonomous small robot is constructed in a team of approx. 6 students. The team is structured according to agile principles and the students learn how to apply the SCRUM method in practice. Furthermore, communication methods are practiced by requiring each team to cooperate with a partner team to solve a common task. In addition, skills for structuring projects, time and resource planning are taught. The lecture will conclude with a hands-on demonstration of the constructed small robots. During the lecture, the theoretical content will be taught, status reports of the teams will be discussed, and individual team coaching will be provided.

Keywords:

- Agile project management, SCRUM, time and resource planning, communicating project status, inter-team communication.

### **Literature**

- A Guide to the Project Management Body of Knowledge (PMBOK® Guide) Sixth Edition and Agile Practice Guide

### **Course**

<b>Lecturer</b>	<b>Title</b>	<b>SWS</b>
Prof. Dr. Andreas Haja	Advanced Project Management	4

## 3.4 Sustainable Innovation Management *(Winter semester)*

<b>Lecturer in charge:</b>	Prof. Dr.- Ing. Armando W. Colombo
<b>Form:</b>	Lecture
<b>Type:</b>	Elective module
<b>Contact-Time (h):</b>	60
<b>Self-Study-Time (h):</b>	90
<b>Exam:</b>	Report (H)
<b>ECTS:</b>	5
<b>Prerequisite for participation:</b>	-
<b>Applicability of the module:</b>	MTTM, MBI, MBIDA, MTM

### Competences

Students will be able to explain the importance of innovation processes and work with international standards for innovation management. They are further able to understand or apply the typical innovation tools such as Technology Readiness Level (TRL), Hype Cycle, Innovation Radar Platform, Strategic Research and Innovation Agendas (SRIAs), Sustainable Development Goals (United Nations), and IP Management Systems.

Students are proficient in using creativity techniques and standardized methods and tools to generate, execute and manage innovation activities.

Students have gained experience in teamwork and presentation techniques during practical phases. The high proportion of self-learning is didactically underpinned by homework.

### Content

An organization's ability to innovate is recognized as a key factor for sustained growth, economic viability, increased well-being and the development of society. In this sense, the innovation capabilities of an organization include the ability to understand and respond to changing conditions of its context, to pursue new opportunities and to leverage the knowledge and creativity of people within the organization in collaboration with external interested parties. This module is intended to transfer the background knowledge to students by establishing a coherent, consistent and common framework to: (a) understand the main terms, definitions, concepts and principles of innovation management; (b) learn how an innovation management system and other innovation management standards should be used, with focus on the ISO 56000, ISO 56002 and the Oslo Manual on Innovation; (c) facilitate communication and create awareness on how innovation activities should be planned and executed; (d) learn tools and methods to support innovation management (e.g. Hype Cycle, TRL and SRL, Innovation Radar Questionnaire (definitions and applications), Strategic Research & Innovation Roadmaps and Agendas (SRIAs), Sustainable Development Goals of the UN, IP-Protection and Patenting Processes). In this context, the curriculum of the module provides the fundamental concepts and innovation management principles, describing why organizations should engage in innovation activities.

Innovation is one of the drivers of business success. The aim of this module is to provide practical knowledge about modern innovation techniques in the field of engineering. In this sense, this module provides knowledge about:

- The phases in innovation projects
- Link between Sustainable Innovation Management, International Strategic Research and Innovation Agendas (Roadmaps), and the UN Sustainable Development Goals.
- Excellence, impact and implementation of innovation activities
- Innovation management: methods and tools
- Intellectual property management: patents and intellectual property protection

### Literature

- Harvard Business Review: HBR's 10 Must Reads on Innovation; Harvard Business Review Press, 2013
- Dodgson, M. / Gann, D.: The Oxford Handbook of Innovation Management; Oxford University Press, 2014
- The Measurement of Scientific, Technological and Innovation Activities. The OSLO Manual 4th Edition. European Union, Print Catalogue number: KS-01-18-852-EN-C, ISBN 978-92-79-92581-8.
- The Innovation Radar Platform. <https://innovation-radar.ec.europa.eu/> ((Access on December 22nd, 2025))
- International Standard ISO 56000, ISO 56002. Innovation Management (Fundamentals and Vocabulary). 2022.
- Vereinte Nationen. Ziele für nachhaltige Entwicklung. <https://www.bundesregierung.de/breg-de/aktuelles/nachhaltigkeitsziele-erklaert-232174> (Access on December 22nd, 2025)  
Günther Schuh, Christian Dölle: Sustainable Innovation - Nachhaltig Werte schaffen, Springer Verlag, 2021

### Course

Lecturer	Title	SWS
Prof. Dr.-Eng. Armando W. Colombo	Sustainable Innovation Management	4

## 3.5 Introduction to Data Sciences *(Summer semester)*

<b>Lecturer in charge:</b>	Prof. Dr. Joachim Schwarz
<b>Form:</b>	Lectures combined with exercises
<b>Type:</b>	Mandatory elective module
<b>Contact-Time (h):</b>	60
<b>Self-Study-Time (h):</b>	90
<b>Exam:</b>	Report (H)
<b>ECTS:</b>	5
<b>Prerequisite for participation:</b>	-
<b>Applicability of the module:</b>	MTTM, MBI, MBIDA, MTM

### **Competences**

Data Science is an interdisciplinary subject that brings together the fields of computer science, statistics and the respective application area. After this course, students understand how all three areas are equally considered. Students know the essential components of data analysis and their tasks. They are familiar with and can illustrate and apply the basic algorithms and methods. Thus, they develop a deeper understanding of the interrelationships and learn how essential tools and algorithms of data analysis can be applied in business settings.

### **Content**

The course includes an introduction to R and its ecosystem. The basics of descriptive and inferential statistics, including an introduction in probability theory and the normal distribution, are developed and applied in Data Science. Furthermore, different algorithms and procedures from the field of data science and their application areas are presented. In detail this course contains:

- Data Science basics including an introduction to R
- Univariate and bivariate descriptive statistics
- Probability theory and the normal distribution
- Inferential statistics basics: Point estimation, confidence intervals and hypothesis testing
- Data preprocessing and data cleaning
- Linear regression
- Methods for classification, e.g. logistic regression, neural networks, decision trees
- Methods for segmentation, e.g. cluster analysis
- Methods for dimension reduction, e.g. principal component analysis
- Text mining (optional).

### **Literature**

- Backhaus, K.; Erichson, B.; Plinke, W.; Weiber, R.: *Multivariate Analysis*, Berlin.
- Field, A.; Miles, J.; Field, Z.: *Discovering Statistics Using R*, London.
- Gujarati, D. N.; Porter, D. C.: *Basic Econometrics*, Boston, MA.
- Hosmer, D. W.; Lemeshow, S.: *Applied Logistic Regression*, New York.
- James, G.; Witten, D.; Hastie, T.; Tibshirani, R.: *An Introduction to Statistical Learning with Applications in R*, New York, NY.
- Kutner, M. H.; Nachtsheim, C. J.; Neter, J.; Li, W.: *Applied Linear Statistical Models*, Boston.
- Kwartler, T.: *Text Mining in Practice with R*, Oxford.
- Menard, S.: *Logistic Regression: From Introductory to Advanced Concepts and Applications*, Thousand Oaks.
- Silge, J.; Robinson, D.: *Text Mining with R - A Tidy Approach*, Boston, MA.

Further literature will be announced in the first lecture

### **Course**

<b>Lecturer</b>	<b>Title</b>	<b>SWS</b>
Prof. Dr. Joachim Schwarz	Introduction to Data Sciences	4

## 3.6 Communication & Culture *(Summer semester)*

<b>Lecturer in charge:</b>	Prof. Maria Krüger-Basener / Dr. Lorenzo Gios
<b>Form:</b>	Lecture and Seminar in combination
<b>Type:</b>	Mandatory elective module
<b>Contact-Time (h):</b>	60
<b>Self-Study-Time (h):</b>	90
<b>Exam:</b>	Report (H)
<b>ECTS:</b>	5
<b>Prerequisite for participation:</b>	-
<b>Applicability of the module:</b>	MTTM, MBIDA, MTM

### **Competences**

Students know theories on cultures and intercultural communication and understand the historical genesis of communication differences. The students perceive cultural differences in communication for concrete situations and can reflect, adapt and optimize their own personal behaviour.

Students are capable to cope with cultural diversity in given communication settings with focus on business related situations.

### **Content**

- Cultural Information: Germany in Comparison to selected students' countries of origin: Values and norms in business and in everyday life
- Basics of interpersonal communication
- Development of international communication in the course of time
- Models and theories on international communication, also within international enterprises
- Communication in international teams
- International communication systems and virtual team work

### **Literature**

- Glover, Jerry; Friedman, Harris L. (2015): Transcultural competence. Navigating cultural differences in the global community. First Edition
- Hall, Edward T.; Hall, Mildred Reed (1990): Understanding cultural differences. Yarmouth, Me.: Intercultural Press.
- Hofstede, Geert H.; Hofstede, Gert Jan; Minkov, Michael (2010): Cultures and organizations. Software of the mind: intercultural cooperation and its importance for survival. 3rd ed. New York: McGraw-Hill.
- Jandt, Fred Edmund (2013): An introduction to intercultural communication. Identities in a global community. 7th ed. Thousand Oaks, Calif.: Sage Publications.
- Moran, Robert T.; Abramson, Neil R.; Moran, Sarah V. (2014): Managing cultural differences. 9. ed. London, New York: Routledge.
- Samovar, Larry A.; Porter, Richard E.; McDaniel, Edwin R. (Hg.) (2014): Intercultural communication. A reader. 14th edition. Wadsworth.
- St. Amant, Kirk; Kelsey, Sigrid (2012): Computer-mediated communication across cultures. International interactions in online environments. Hershey, PA: Information Science Reference.

### **Course**

<b>Lecturer</b>	<b>Title</b>	<b>SWS</b>
Prof. Maria Krüger-Basener Dr. Lorenzo Gios	Communication & Culture	4

## 3.7 Controlling *(Winter semester)*

<b>Lecturer in charge:</b>	Prof. Dr. Carsten Wilken
<b>Form:</b>	seminar form lecture, exercises
<b>Type:</b>	Mandatory elective module
<b>Contact-Time (h):</b>	60
<b>Self-Study-Time (h):</b>	90
<b>Exam:</b>	Written exam (K2)
<b>ECTS:</b>	5
<b>Prerequisite for participation:</b>	-
<b>Applicability of the module:</b>	MTTM, MBI, MBIDA, MTM

### **Competences**

The Controlling module enables students to develop and evaluate corporate management control systems. In particular, students are able to explain, assess, and optimize the effects of system design on decision-making and control processes in companies and organizations. Furthermore, students are able to prepare planning and decision-support calculations, analyze variances, and derive recommendations for action.

In addition, the module includes the ability to prepare and present content in a target-group-oriented manner, to deliver presentations convincingly, and to generate resulting reports in accordance with recognized standards.

For this purpose, students learn the methodologies and instruments of managerial accounting as applied in Anglo-Saxon countries and are able to identify and assess the differences compared to the approaches used in Germany.

### **Content**

- Nature of Costs
- Organizational Architecture
- Budgeting
- Cost Allocation
- Systems of Cost Accounting (Absorption Costing, Variable Costing, Standard Costing)
- Variance Analysis

### **Literature**

- Zimmerman, J.: Accounting for Decision Making and Control; McGraw Hill
- Further current, topic-related literature will be announced during the course

### **Course**

<b>Lecturer</b>	<b>Title</b>	<b>SWS</b>
Prof. Dr. Carsten Wilken	Controlling	4

## 3.8 International Commercial Law *(Winter semester)*

<b>Lecturer in charge:</b>	Dr. Bernd Bessau
<b>Form:</b>	lecture in seminar form
<b>Type:</b>	Mandatory elective module
<b>Contact-Time (h):</b>	36
<b>Self-Study-Time (h):</b>	114
<b>Exam:</b>	Report (H)
<b>ECTS:</b>	5
<b>Prerequisite for participation:</b>	-
<b>Applicability of the module:</b>	MTTM, MTM

### **Competences**

Students master the basics of legal thinking and discuss them using selected practical examples. They can reflect on the legal background of their own professional activities as engineers and managers as a prerequisite for successful cooperation with legal experts. They can also improve their communication skills.

Students will have an overview of general legal foundations, contract law, international contracts and insights into different legal systems. In order to support the high degree of self-learning didactically, the students have to work on a seminar paper on a field of law in the course of the course and present it in a presentation. There is a broad catalogue of topics for this purpose - e.g. insolvency law in a particular country, European insolvency law - similarly then for company law etc. This requires independent work on the chosen topic. As each student presents his or her topic, all participants will get a broad overview of International Commercial Law and there will be a series of comparisons of different legal systems.

### **Content**

- Foundations of law (fundamental rights and freedoms, rule of law)
- Sources of law (agreement, statute, custom)
- Selected legal topics (due diligence, liability, standardization, proportionality, precaution, security, penalties)
- Hierarchy and interaction of national, European and international law
- Commercial law (EC/EU, WTO)
- Law of technology, technical installations
- Energy and sustainable development

### **Literature**

- Case studies
- Lecture notes

### **Course**

<b>Lecturer</b>	<b>Title</b>	<b>SWS</b>
Dr. Bernd Bessau	International Commercial Law	2

## 3.9 Marketing *(Summer semester)*

<b>Lecturer in charge:</b>	Dr. Diederich Bakker
<b>Form:</b>	Lecture, exercise class
<b>Type:</b>	Mandatory elective module
<b>Contact-Time (h):</b>	60
<b>Self-Study-Time (h):</b>	90
<b>Exam:</b>	Report (H)
<b>ECTS:</b>	5
<b>Prerequisite for participation:</b>	-
<b>Applicability of the module:</b>	MTTM, MBI, MBIDA, MTM

### **Competences**

The students have a critical understanding of the most important theories, principles and methods of modern marketing and are able to identify, assess and solve issues with relevance to Marketing in unknown and complex contexts. To this end, they know how to use basic marketing tools such as the Ansoff matrix or the BCG product portfolio model. The underlying knowledge reflects the state-of-the-art in literature and research, and delves into selected fields of expertise. The students are able to critically discuss Marketing issues and to expand their knowledge base independently.

### **Content**

The course is designed to be taught for students who usually have a technical and scientific bachelor's degree. For this reason, in addition to the teaching of general concepts, there is a consistent focus on business customer and industrial goods markets. The course will be held in English.

At the beginning, the role of marketing within a company is clarified as well as the importance of focusing all company activities on customers. Subsequently, purchasing behavior in the B2B (Business-to-Business) sector is explicitly considered. Principles and methods of market research are also discussed, with particular reference to modern methods of data collection and analysis. The basics of strategic marketing planning are conveyed as the guiding principles of the company's activities. This leads to a detailed examination of the elements of the marketing mix", i. e. the product, price, distribution and communication policy, each with selected special features for dealing with industrial markets.

Product policy is based on the concept of the product life cycle and also deals with innovation and product modification processes as well as the management of brands and product ranges. Pricing policy focuses on cost-, demand-, and competition-oriented pricing methods as well as price management over time. In communication policy, the entire set of classical and modern communication instruments is considered, while in distribution policy all alternatives of direct and indirect distribution channels are dealt with. The concept of the customer journey integrates both.

All contents are being illustrated by using up-to-date examples from both consumer and industrial goods markets. Exercises and short case studies allow for an application of learned contents to real life scenarios. At the end of the semester, a use-case supported introduction to a CRM system takes place in order to let the students experience structures and possibilities of such standard software in the company.

### **Literature**

- Jobber, David: Principles and Practice of Marketing. McGrawHill, latest edition.

### **Course**

<b>Lecturer</b>	<b>Title</b>	<b>SWS</b>
Dr. Diederich Bakker	Marketing	4

## 3.10 ERP-Systems (*Winter semester*)

<b>Lecturer in charge:</b>	Antje Susanne Koch
<b>Form:</b>	Lecture, exercise class, case studies
<b>Type:</b>	Mandatory elective module
<b>Contact-Time (h):</b>	60
<b>Self-Study-Time (h):</b>	90
<b>Exam:</b>	Report (H) and written exam (K1)
<b>ECTS:</b>	5
<b>Prerequisite for participation:</b>	-
<b>Applicability of the module:</b>	MTTM, MBI, MBIDA, MTM

### **Competences**

Students are able to understand, follow up and apply basic functions of ERP-systems. Different concepts and approaches for technical and conceptual architecture of these systems will be identified and evaluated for their practical employment. Students can be specifying business requirements for typical businesses and their fulfillment by different systems.

### **Content**

The following topics are provided in this module:

- ERP foundation
- Architecture of ERP systems
- Introduction of business processes within ERP systems, applying production and material management as example
- In-depth case study of business processes in ERP systems using the example of finance and controlling
- Project management/-planning for ERP systems implementation.

### **Literature**

- Drumm, C.; Scheuermann, B.; Weidner, S. (2022) Einstieg in SAP S/4HANA: Am Beispiel Global Bike. Ideal für Studium, Einstieg und Weiterbildung (SAP PRESS)
- Gronau, N. (2021) RP-Systeme: Architektur, Management und Funktionen des Enterprise Resource Planning

### **Course**

<b>Lecturer</b>	<b>Title</b>	<b>SWS</b>
Antje Susanne Koch	ERP-Systems	4

## 3.11 Business Analytics *(Summer semester)*

<b>Lecturer in charge:</b>	Prof. Dr. Elmar Wings
<b>Form:</b>	Seminaristic lessons, Serious gaming, Teamwork
<b>Type:</b>	Mandatory elective module
<b>Contact-Time (h):</b>	60
<b>Self-Study-Time (h):</b>	90
<b>Exam:</b>	Presentation (R)
<b>ECTS:</b>	5
<b>Prerequisite for participation:</b>	-
<b>Applicability of the module:</b>	MTTM, MBI, MBIDA

### **Competences**

Students gain the understanding and competence of how available internal and external company data can be analyzed in such a way that concrete entrepreneurial problems can be considered in an evidence-based manner and then solved. Business analytics is considered applied data science in business administration. Process-related questions, organizational internal interrelationships, etc. can be analyzed with the help of this discipline. The students learn four central phases "framing", "allocating", "analytics" and "preparation" and the respective methods to be able to process the phases. In their own case study, the students apply the theoretical knowledge and are guided to train intensively how they can also deal with ethical challenges of the discipline in the corporate context.

### **Content**

- 4 BA phases (according to Seiter) "Framing", "Allocating", "Analytics", "Preparation", incl. associated methods
- Project and team management (e.g. agility, communication)
- Visualization of results
- Storytelling of results
- Linking data analytics with the mission, vision, strategy and goals of companies
- Dealing with Big Data (VVVV)
- The increased use of analytical models for the automated control of entire operational processes
- Transferring decisions from people to systems: (1) Purely digital processes, (2) Semi physically digitized processes, (3) Fully digitally controlled physical processes.
- Challenge by aspects of Disruption / within the Professional Field of Data Scientist
- Critical discussion and reflection - opportunities, limits, data and privacy protection (DSGVO & differences to selected national jurisdictions)

### **Literature**

- Seiter, Mischa: Business Analytics. Wie Sie Daten für die Steuerung von Unternehmen nutzen (2019)
- Weber, Felix: Künstliche Intelligenz für Business Analytics. Algorithmen, Plattformen und Anwendungsszenarien (2020)
- Martini, Mario: Blackbox Algorithmus – Grundfragen einer Regulierung Künstlicher Intelligenz (2019)
- Oppl, Stefan; Stary, Christian: Designing Digital WorkConcepts and Methods for Human-centered Digitization (2019)

### **Course**

<b>Lecturer</b>	<b>Title</b>	<b>SWS</b>
Prof. Dr. Elmar Wings	Business Analytics	4

### 3.12 Project B: Business Project in Business Analytics *(Summer semester)*

<b>Lecturer in charge:</b>	Lecturer of the study program
<b>Form:</b>	Solving of a problem independently under the guidance of a supervisor, presentation and discussion of the results, preparation of a project report
<b>Type:</b>	Mandatory elective module
<b>Contact-Time (h):</b>	30
<b>Self-Study-Time (h):</b>	120
<b>Exam:</b>	Project report (P)
<b>ECTS:</b>	5
<b>Applicability of the module:</b>	MTTM, MBI, MBIDA

#### **Competences**

Students are able to independently solve a comprehensive problem in the field of product development in a scientifically sound manner using the knowledge and techniques acquired.

#### **Content**

The topic/problem can be proposed by the examinee but has to be approved by the examiner/supervisor.  
Questions from the field of product development.

#### **Literature**

- Project dependent literature
- Questions from the field of product development

#### **Course**

<b>Lecturer</b>	<b>Title</b>	<b>SWS</b>
Lecturer of the study program	Project B	2

### 3.13 Technical Project *(Winter-, Summer semester)*

<b>Lecturer in charge:</b>	Lecturer of the study program
<b>Form:</b>	Solving of a problem independently under the guidance of a supervisor, presentation and discussion of the results, preparation of a project report
<b>Type:</b>	Mandatory elective module
<b>Contact-Time (h):</b>	30
<b>Self-Study-Time (h):</b>	120
<b>Exam:</b>	Project report (P)
<b>ECTS:</b>	5
<b>Applicability of the module:</b>	MBI, MBIDA

#### **Competences**

Students are able to independently solve a comprehensive problem in the field of product development in a scientifically sound manner using the knowledge and techniques acquired.

#### **Content**

- Questions from the field of product development.
- Literature
- Literature depending on the project

#### **Literature**

- Project dependent literature

#### **Course**

<b>Lecturer</b>	<b>Title</b>	<b>SWS</b>
Lecturer of the study program	Project T	2

### 3.14 Current Topic T, B *(Winter-, Summer semester)*

<b>Lecturer in charge:</b>	Lecturer of the study program
<b>Form:</b>	Solving of a problem independently under the guidance of a supervisor, presentation and discussion of the results
<b>Type:</b>	Mandatory elective module
<b>Contact-Time (h):</b>	30
<b>Self-Study-Time (h):</b>	120
<b>Exam:</b>	Project report (P)
<b>ECTS:</b>	5
<b>Applicability of the module:</b>	MTTM, MBI, MBIDA, MTM

#### **Competences**

Students are able to independently solve a comprehensive problem from the field of product development in a scientifically sound manner using the knowledge and techniques they have learned.

The students demonstrate that they are able to deal with the scientific literature on a specific issue in depth and can prepare it in a targeted and structured manner.

Students demonstrate that they have presentation and communication skills that enable them to present topics they have developed themselves in a clear and structured manner and to discuss their applicability to practice.

#### **Content**

Students work on a scientific-application-oriented problem. In lectures by the lecturers, the most important theories as well as current research results on a specific topic from the fields of technology, professionalization or business are presented. By reading scientific literature (self-study), students deepen their knowledge of theories and methods in the field and learn how to use scientific literature. At the end of the course, students will be able to establish a relationship between the research question and scientific theories and research results.

#### **Literature**

Slides, case studies, scientific literature.

#### **Course**

<b>Lecturer</b>	<b>Title</b>	<b>SWS</b>
Lecturer of the study program	Current Topic	2