

Programme and Course Description

Design Leadership

Master of Science (M. Sc.)

Study regulation: WS 22/23

as per: 12-02-2024

Content

1 Overview	4
2 Introduction.....	5
2.1 Objectives.....	6
2.2 Admission requirements.....	7
2.3 Target group.....	8
2.4 Structure of the programme	9
2.5 Prerequisites for advancement.....	10
2.6 Concept and advisory board	11
3 Qualification profile	12
3.1 Mission statement	13
3.2 Study objectives	15
3.2.1 Subject-specific competences of the study programme	15
3.2.2 Interdisciplinary competences of the study programme.....	15
3.2.3 Examination concept of the study programme	16
3.2.4 Application of the study programme.....	16
3.2.5 Contribution of individual modules to objectives of the programme	17
3.3 Possible professional fields	18
4 Dual Study	19
5 Description of Modules	20
5.1 Compulsory Modules	21
Project Interdisciplinary Innovation.....	22
Project Design Creation.....	24
Advanced Management Theory and Methods.....	26
Creativity Methods in Business	28
Project Applied Design Leadership.....	30
Project Design Prototyping.....	32
Design Leadership Methods	34
Design Culture Theory and Methods.....	36
Scientific Research Seminar	38
Master Thesis	40
5.2 Individual Electives.....	42

Advanced Theories and Methods of Sustainability Management in a Globalized Economy....	43
Cost Benchmarking and Data Driven Product Optimization	45
Entrepreneurship & Innovation Management.....	47
Gründercoaching /Entrepreneurship	49
Internationales Projekt.....	51
Strategic Foresight and Trend Analysis	52
Technology Commercialization & Intellectual Property Management.....	54

1 Overview

Name of the programme	Master in Design Leadership
Study type & degree	Consecutive Master of Science (full time)
First start date	WS 22/23
Standard period of study	3 semesters (90 ECTS, 48 SWS)
Study location	THI-Campus Ingolstadt, D
Language of instruction	English
Cooperation	None
Admission requirement	Bachelor degree
Capacity	25 students p.a.
Programme director	Prof. Dr. Bernhard Rothbucher E-Mail: bernhard.rothbucher@thi.de Phone: +49 (0) 841 / 9348-0

2 Introduction

The text describes the current state of the programme modules in the Master's degree "Design Leadership" according to the "Study Regulation" / "Studien- und Prüfungsordnung" of 13/12/2021.

Especially the "Programme and Course Description" gives the objectives and content of the individual compulsory modules and the breakdown of SWS (semester hours per week) per module and semester.

In case of doubt, the higher-ranking "Study Regulation" / "Studien- und Prüfungsordnung" has priority.

2.1 Objectives

The Master Design Leadership is about how to use the mindset, tools, techniques, and methods of design and designers to shape the practice of leadership. The programme is fully taught in English and welcomes both German and international students.

The aim of the "Design Leadership" Master's programme is to impart creative, technological, and business skills, in particular interdisciplinary knowledge at the interface of design, technology and business. On the basis of scientific knowledge and methods, university graduates are trained in management and Expert tasks of regional and international companies and organizations are prepared. In addition to technical and methodical knowledge, the course also provides impetus for the development of social skills. The students are thus able to shape their actions in the context of social processes critically, reflectively and with a sense of responsibility. It also promotes independent scientific work with a focus on applied research as the basis for decisions in companies.

As part of the "Design Leadership" Master's degree, students should get to know the most important design methods, innovation methods, the development of holistic business models and the methods of applied research. The knowledge acquired in the "Design Leadership" master's degree enables graduates to take on qualified specialist and managerial tasks in the field of product development and enable their participation in complex projects or their management. The transfer of knowledge and skills takes place mainly through project work and seminars on theory and methodological principles to deepen the learning content. Particular attention is paid to the topics of sustainability, digitization, intercultural communication, entrepreneurship, and intrapreneurship. The Master's course also gives students the opportunity to do a subsequent doctorate or work in research.

2.2 Admission requirements

- Proof of successful completion of a degree at a German university with at least 210 ECTS credit points or an equivalent scope of study in the field of design science, engineering or related fields or an equivalent successful domestic or foreign degree;
- All foreign applicants must submit their bachelor's degree to uni-assist, which verifies their eligibility and converts their grades to the German grade system. Uni-Assist will issue a so-called preliminary inspection documentation (VPD) which you have to upload to the application portal (similar to their other documents);
- Proof of English proficiency level B2 or higher.

The binding regulations for this curriculum can be found in:

- "Studien- und Prüfungsordnung (SPO)" of Master's degree "Design Leadership" as of 13/12/2021.
- "Rahmenprüfungsordnung" (RaPO)
- „Allgemeine Prüfungsordnung“ (APO) of Technische Hochschule Ingolstadt
- „Immatrikulationsatzung“ of Technische Hochschule Ingolstadt

The sequence of studies is influenced by the regulations of "Studien- und Prüfungsordnung".

2.3 Target group

The programme addresses to:

- Graduates of design courses with ambitions to become self-employed.
- Graduates of design courses with ambitions in SMEs and/or corporations who want to take on responsibility in the field of innovation.
- Graduates of technical and economic courses with an interest in design leadership.
- Prospective students that prefer a master's programme fully taught in English, like to gain intercultural experience and go for an international career at home and abroad.

2.4 Structure of the programme

The programme lasts three semesters. The first semester contains two theoretical courses in combination with two practical project studies to enhance the learning progress. The second semester has the same structure but additional electives. The master's thesis is placed in the third semester.

The following table shows the curriculum:

1. Semester

- 1. Project 1 Interdisciplinary Innovation
- 2. Project 2 Design Creation
- 3. Advanced Management Theory and Methods
- 4. Creativity Methods in Business

2. Semester

- 5. Project Applied Design Leadership
- 6. Project Design Prototyping
- 7. Design Leadership Methods
- 8. Design Culture Theory and Methods
- 9. Individual Elective

3. Semester

- 10. Scientific Research Seminar
- 11. Master's Thesis (Thesis and Colloquium)

2.5 Prerequisites for advancement

To get the title of Master thesis requires that at least 30 ECTS be achieved in the sequence of study (compare "Studien- und Prüfungsordnung" as of 13/12/2021).

2.6 Concept and advisory board

Prof. Dr. Bernhard Rothbucher and the team of the Faculty of Engineering and Management developed the curriculum concept based on research and demand from industry. The course was developed, among other things, based on many discussions with specialists and managers from the field of design and innovation. In this way, practical requirements could be considered in a special way. This ensures that the graduates can support the companies with their challenges accordingly. Graduates can identify process improvement potential in management, core, and support processes, to define goals and standards and to plan, coordinate and cost-effectively implement innovation projects across disciplines.

An advisory board was formed with experts from industry and academia. Several iterations of the concept paper were conducted to offer a state-of-the-art Master in the given field.

3 Qualification profile

The course is conducted in English throughout and offers (international) projects every semester, so that the cross-cutting issue of internationality is of particular importance. Furthermore, by integrating the circular economy, digital design process and business canvas into the projects, other key objectives are considered.

Four clusters offer a maximum of interdisciplinarity:

- Cluster design
- Cluster leadership
- Cluster economy
- Cluster integrative

The students are prepared for the challenges in companies or institutions of different sectors and sizes with a mix of professional and social skills. For example, graduates can work in design agencies or innovation departments of large companies, especially at the interfaces between design, technology and business (e.g.: design technology convergence).

The graduates can compile complex tasks within cross-functional and international teams, speak English fluently, work target-oriented and are able to present results. With their methodological knowledge and project experience, the graduates are particularly qualified to become self-employed or to accompany start-ups on their way to the market.

3.1 Mission statement

The master Design Leadership programme integrates the mission statement in the following ways:

We prepare our students for the challenges of the future:

- The master's programme creates future competence.
- It creates a spirit of innovation and teaches entrepreneurial thinking.
- It is an interdisciplinary programme, which enables students to develop future-oriented solutions for interdisciplinary challenges.
- It qualifies students to help shape social changes such as the digital transformation and technological change. It sensitizes students to the sustainable use of the environment and resources, to socially responsible behaviour and to social commitment.

We enable our students to develop solutions to problems based on scientific knowledge:

- The master's programme includes a lot of project work. This enables students to acquire applicable problem-solving skills.
- The lecturers transfer their practical experience and teach academic knowledge. They are professionally competent, are constantly developing in their areas of expertise and contribute their research experience (four research professorships) to teaching.
- Students acquire professional, methodical, social and self-competences.

We open outstanding regional and international perspectives for our students:

- The master's programme is fully taught in English, addresses international students and creates intercultural competences.
- In this way, the programme contributes to a cosmopolitan, international campus.
- Our numerous cooperations with companies in the region enable our students to start their careers in the best possible way, both regionally and internationally.

We teach and learn through personal exchange:

- Because this is a master's programme, small groups and seminar-based forms of teaching are set to enable individual exchange with the students.
- The teaching concept offers digitalized courses (e.g., inverted classroom) in combination with many practical project studies to enhance the learning progress.
- The lecturers try out new ways of innovative and experimental teaching.

We help all students discover and realize their individual potential:

- The Master's programme includes a lot of project work. In joint project work, our students gain social skills such as the ability to cooperate and deal with conflict, and leadership skills.

- The Master's programme is international and intercultural. Hence, the programme promotes performance in an appreciative cooperation. We meet each other with tolerance and openness and understand diversity as an opportunity to learn from each other and develop further.

Matrix Core Values and Modules:

- *Internationalization*

The Design Culture module is explicitly dedicated to dealing in and with other cultures. This teaches the basics of intercultural communication and implements them through projects and exchange in networks.

- *Entrepreneurship*

The entrepreneurial aspects are an integral part of every project task and the master's thesis. The theoretical and methodological foundations for this are taught in several modules.

- *Digitalization*

The tools of digitalization are in the projects integrated. The entire design process is digital. Digitalization as a phenomenon (with appropriate partners from business and research) will be part of project tasks.

- *Sustainability*

With this master's degree we are creating an offer at the THI that is unique in southern Germany. Sustainability in the holistic sense is anchored in the content of the modules and is part of the project evaluation criteria.

3.2 Study objectives

3.2.1 Subject-specific competences of the study programme

Professional competences:

Graduates:

- have a basic technical understanding of the design, calculation and construction of products;
- can evaluate design results and communicate them to other disciplines;
- can communicate visually and prepare decisions in systems;
- can identify process improvement potential in management, core and support processes, to define goals and standards and to plan, coordinate and cost-effectively implement innovation projects across disciplines.

3.2.2 Interdisciplinary competences of the study programme

Methodical competences:

Graduates are able:

- to work scientifically;
- to analyze problems, to recognize overarching relationships, to implement engineering knowledge when solving problems, to evaluate solutions technically and economically and to prepare decision papers.

Social competences:

Graduates are able:

- to work on complex tasks in a team and take on the leadership of the team;
- to communicate and impart their competencies;
- to be persuasive and assertive.

Personal competences:

Graduates

- are able to organize themselves and manage their time;
- have analytical and solution-oriented thinking skills;
- work goal-oriented and independently.

3.2.3 Examination concept of the study programme

Projects are a focus in the programme. In the projects, students learn to put theoretical knowledge into practice and to deepen it in a team. To use different forms of examination, six modules remain.

The Management module is examined in writing as usual, while in Creativity Methods the student can prove in a real-world presentation the understanding of the subject.

This leaves several modules each for the examination forms study paper, seminar paper with colloquium and oral examination.

Module	Examination
Project Interdisciplinary Innovation Project Design Creation Advanced Management Theory and Methods Creativity Methods in Business	Proj SA schrP prP
Project Applied Design Leadership Project Design Prototyping Design Leadership Methods Design Culture Theory and Methods Individual Elective	Proj SA StA SA LN
Scientific Research Seminar Master Thesis (Thesis + Colloquium)	SA+Koll MA+Koll

For the form of examinations, please compare “Studien- und Prüfungsordnung”, Appendix 1.

3.2.4 Application of the study programme

Generally, all teachers have a long-standing background in the industry and/or an above-average academic qualification.

Experts from the industry review the concept of the master’s programme “Master Design Leadership”.

During the first two semesters, two theoretical courses are taught in combination with two practical project studies to enhance the learning progress. Theoretical contents are also explained in the theory modules using practical examples and Case Studies.

3.2.5 Contribution of individual modules to objectives of the programme

Module	Profess. Comp.	Method. Comp.	Social comp.	Personal Comp.
Project Interdisciplinary Innovation	++	+	++	+
Project Design Creation	++	++	o	++
Advanced Management Theory and Methods	++	++	o	o
Creativity Methods in Business	+	++	+	+
Project Applied Design Leadership	++	+	++	+
Project Design Prototyping	++	++	o	+
Design Leadership Methods	+	++	o	o
Design Culture Theory and Methods	o	+	++	++
Scientific Research Seminar	+	++	o	+
Master Thesis	++	++	o	+
Master Colloquium	+	+	++	++

3.3 Possible professional fields

There is a wide field of application in specialist or management roles in national or international companies and organizations.

Graduates of the course are prepared for specialist and managerial tasks in the following areas:

- Owner, founder, managing director of design agencies in the field of technical products.
- Employees at the interface of design technology convergence.
- Management consultancies e.g., in the field of innovation management.
- Assistance to the board of directors in high-tech SMEs/corporations.

Graduates are also particularly well qualified for these tasks in an international context. Typical industries for the graduates of this programme are:

- Technology companies (e.g., car, mechanical engineering, consumer goods)
- Brand manufacturers (e.g., luxury industry)
- Management consultancies
- Agencies.

4 Dual Study

In cooperation with selected industry partners, the study program can be completed also in a dual study model.

In dual study model, university and practical phases (especially during semester breaks and for the final thesis) regularly alternate during study. The lecture times in the dual study model correspond to the standard study and lecture times at the THI.

By systematically linking the learning locations of university and company, students gain professional practical experience with selected practice partners as an integral part of their studies.

The curriculum of the dual degree program model differs from the regular degree program concept in the following points:

- **Final thesis in the cooperation company**

In dual study model, the final thesis is written at a cooperating company, usually on a practice-relevant topic related to the focus of study. Organizationally, the dual degree program model is characterized by the following components:

- **Mentoring**

The central contact persons for dual students in the faculty are the respective program head of studies. They organize an annual mentoring meeting with the dual students of the respective study program.

- **Quality Management**

In the evaluation and surveys at the THI on the quality assurance of the dual study separate question blocks are included.

- **“Forum Dual“**

Organized by the Career Service and Student Counseling (CSS), the “Forum Dual” takes place once a year. The “Forum Dual” promotes the professional-organizational exchange between the dual cooperation partners and the faculty and serves to ensure the quality of the dual study programs. All cooperation partners in the dual study program as well as representatives and dual students of the faculty are invited to the meeting.

Formal-legal regulation for dual studies for all degree programs of the THI are regulated in the APO (see §§ 17, 29 and 30) and the enrollment statutes (see §§ 8b and 18).

- **Master’s Thesis**

You can find a more detailed description in the corresponding module description (see next chapter).

5 Description of Modules

5.1 Compulsory Modules

Project Interdisciplinary Innovation			
Module abbreviation:	PJ_IntInno_M-DL	SPO-No.:	1
Curriculum:	Programme	Module type	Semester
	Design Leadership (SPO WS 22/23)	Compulsory module	1
Module attributes:	Language of instruction	Duration of module	Frequency of offer
	English	1 semester	only winter term
Responsible for module:	Rothbucher, Bernhard		
Lecturers:	Rothbucher, Bernhard		
Credit points / SWS:	6 ECTS / 5 SWS		
Workload:	Contact hours:	58 h	
	Self-study:	92 h	
	Total workload:	150 h	
Subjects of the module:	Project Interdisciplinary Innovation		
Lecture types:	SU/Ü-Seminar with integrated exercises		
Examinations:	PA – Project work with oral presentation (15 minutes) and written elaboration (5-25 pages)		
Usability for other study programs:	Please see the subject recognition list of SCS (Study Service Centre)		
Prerequisites according examination regulation:			
None			
Recommended prerequisites:			
None			
Objectives:			
<p>The students:</p> <ul style="list-style-type: none"> • can work independently and successfully on a complex design task based on a specific task at the interface between design and technology; • gain further experience in the development of products; • develop routine in the development and design of products with CAD tools and in 3D printing of objects; • optimize a process that includes the steps of ideation, conception, draft, construction and elaboration; • can independently familiarize themselves with a topic that is new to them and work on it systematically using engineering and design methods; • improve their skills in working autonomously and developing solutions to individual complex problems from business environment; • are able to organise and structure themselves and their resources in a complex project; • improve their communication and presentation skills with regard to different stakeholders (e.g., from science, economics, communities); • students learn to work in a team, to organise teamwork and to solve conflicts in the team. 			
Content:			
<ul style="list-style-type: none"> • Roleplay 			

- Reflection
- Teambuilding
- Project management

Literature:

- MASTROGIACOMO, Stefano und andere, 2021. *High-impact tools for teams: you're holding a powerful toolkit to create alignment, build trust, and get results fast; rediscover the joy of teamwork with these five*. Hoboken, New Jersey: Wiley. ISBN 978-1-119-60238-5, 1-119-60238-6
- HEUFLER, Gerhard, Michael LANZ und Martin PRETTENTHALER, 2020. *Design basics: from ideas to products*. 2. Auflage. Salenstein: niggli. ISBN 978-3-7212-0988-4, 3-7212-0988-5
- KNAPP, Jake, John ZERATSKY und Braden KOWITZ, 2016. *Sprint: How to solve big problems and test new ideas in just five days*. London; New York; Toronto; Sydney; Auckland: Bantam Press. ISBN 978-0-593-07611-8

Additional remarks:

No remarks.

Project Design Creation			
Module abbreviation:	PJ_DC_M-DL	SPO-No.:	2
Curriculum:	Programme	Module type	Semester
	Design Leadership (SPO WS 22/23)	Compulsory module	1
Module attributes:	Language of instruction	Duration of module	Frequency of offer
	English	1 semester	only winter term
Responsible for module:	Siegel, Thomas		
Lecturers:	Lee, Lucia; Siegel, Thomas		
Credit points / SWS:	6 ECTS / 5 SWS		
Workload:	Contact hours:	58 h	
	Self-study:	92 h	
	Total workload:	150 h	
Subjects of the module:	Project Design Creation		
Lecture types:	S-Seminar		
Examinations:	Seminar paper with oral presentation (15 minutes), written elaboration (8-15 pages) and presentation (15-20 pages)		
Usability for other study programs:	Please see the subject recognition list of SCS (Study Service Centre).		
Prerequisites according examination regulation:			
None			
Recommended prerequisites:			
None			
Objectives:			
<p>The students</p> <ul style="list-style-type: none"> • know all necessary terms and methods regarding design development. • can independently familiarize themselves with a topic that is new to them and apply systematically engineering and design methods onto it. • can work independently and successfully on a complex design task based on a specific task including design and technology skills. • are planning and optimizing their own design process during the project. • develop routine in the development and design of products with CAD tools and first touch on 3D printing. • can sketch freehand and digital to illustrate their design. • can create stunning and convincing presentations. • gain further experience in the development of products. 			
Content:			
<ul style="list-style-type: none"> • Specific complex design task e.g., new product • Basics terms of design: aesthetic, semantic, principles, 10 rules of good design • Basic functions of design: practical, aesthetic, sign and symbol function 			

- Design process in steps: design briefing, analysis & research, ideation, conception, engineering, optimization
- Considering design guidelines: shape appropriate, ergonomics, ease of use & repair, ready for assembly & production, suitable for maintenance, conform to standards, suitable for recycling (sustainability)
- Presentation of interim and final results.

Literature:

- HEUFLER, Gerhard, Michael LANZ und Martin PRETTENTHALER, 2020. *Design basics: from ideas to products*. 2. Auflage. Salenstein: niggli. ISBN 978-3-7212-0988-4, 3-7212-0988-5
- GRAY, Dave, Sunny BROWN und James MACANUFO, 2010. *Game storming - A Playbook for Innovators, Rulebreakers, and Changemakers*. ISBN 978-0596804176

Additional remarks:

No remarks.

Advanced Management Theory and Methods			
Module abbreviation:	AdMana_M-DL	SPO-No.:	3
Curriculum:	Programme	Module type	Semester
	Design Leadership (SPO WS 22/23)	Compulsory module	1
Module attributes:	Language of instruction	Duration of module	Frequency of offer
	English	1 semester	only winter term
Responsible for module:	Schneider, Yvonne		
Lecturers:	Schneider, Yvonne		
Credit points / SWS:	6 ECTS / 4 SWS		
Workload:	Contact hours:	47 h	
	Self-study:	103 h	
	Total workload:	150 h	
Subjects of the module:	Advanced Management Theory and Methods		
Lecture types:	SU/Ü-Seminar with integrated exercises		
Examinations:	schrP90 – written examination, 90 minutes		
Usability for other study programs:	Please see the subject recognition list of SCS (Study Service Centre).		
Prerequisites according examination regulation:			
None			
Recommended prerequisites:			
None			
Objectives:			
<p>By actively participating in this course, students should</p> <ul style="list-style-type: none"> • be able to understand the basic elements of management in corporations; • be familiar with structures and processes in companies; • be aware of different roles and responsibilities in organizations; • understand decision-making processes in corporations; • know the key elements of a corporate strategy development in a company and the respective planning processes; • be aware of key strategy tools for analysis and should become able to use them; • get familiar with management accounting and financial tools of companies such as profit and loss statements, key performance indicators etc.; • learn about functional aspects of a corporation, such as production or human resource management; • receive input how to exploit market opportunities via marketing activities; • obtain information on how to bring an idea to a start-up based on entrepreneurial activities; • gain ability to critically reflect corporate activities and decisions. <p>Cases, examples and calculation exercises are integrated through the course to reinforce and to clarify major topics.</p>			

Content:

This module provides a general overview on theory, methods and challenges of Management. Among others, the following aspects will be discussed:

- Leading the Organization
- Developing Strategic Foresight
- Managing Financial performance
- Exploiting Market opportunities
- Excursus: Managing Start-up Activities

Literature:

- ROBBINS, Stephan P. und Mary COULTER, 2021. *Management*. ISBN 978-1-292-34088-3
- NICKELS, William G., James M. MCHUGH und Susan M. MCHUGH, 2012. *Understanding business*. 10. Auflage. [New York, NY]: McGraw-Hill Education. ISBN 978-0-07-714088-5, 0-07-714088-5

Additional remarks:

Additional literature and self-study resources will be provided throughout the course.

Creativity Methods in Business			
Module abbreviation:	CreaMetho_M-DL	SPO-No.:	4
Curriculum:	Programme	Module type	Semester
	Design Leadership (SPO WS 22/23)	Compulsory module	1
Module attributes:	Language of instruction	Duration of module	Frequency of offer
	Englisch	1 semester	only winter term
Responsible for module:	Rothbucher, Bernhard		
Lecturers:	Rothbucher, Bernhard		
Credit points / SWS:	6 ECTS / 4 SWS		
Workload:	Contact hours:	47 h	
	Self-study:	103 h	
	Total workload:	150 h	
Subjects of the module:	Creativity Methods in Business		
Lecture types:	SU/Ü-Seminar with integrated exercises		
Examinations:	LN – Practical examination (15 minutes)		
Usability for other study programs:	Please see the subject recognition list of SCS (Study Service Centre).		
Prerequisites according examination regulation:			
None			
Recommended prerequisites:			
None			
Objectives:			
After attending the course, the students are able to			
<ul style="list-style-type: none"> • define and explain the concept, principles, and process of creativity methods; • compare and contrast different methods of creativity methods and evaluate their suitability for different purposes; • apply methods of creativity methods on projects in product and service design; 			
Content:			
<ul style="list-style-type: none"> • Perceptual Psychology • Human Behaviour • Creation Methods • Visualisation Methods • Analysis Methods 			
Literature:			
<ul style="list-style-type: none"> • LIDWELL, William, Kritina HOLDEN und Jill BUTLER, 2010. <i>Universal principles of design: 125 ways to enhance usability, influence perception, increase appeal, make better design decisions, and tech through design; [25 additional design principles]</i>. Gloucester, Mass.: Rockport. ISBN 1-59253-587-9, 978-1-59253-587-3 			

- NIEDDERER, Kristina, CLUNE, Stephen, LUDDEN, Geke, 2018. *Design for behaviour change: theories and practices of designing for change* [online]. London; New York, NY: Routledge, Taylor & Francis Group PDF e-Book. ISBN 978-1-315-57660-2. Verfügbar unter: <https://doi.org/10.4324/9781315576602>.
- HABERMANN, Frank und Karen SCHMIDT, 2018. *Over the fence: rediscover the joy of projects, develop new ideas better, and have more fun working together*. Version 1. Auflage. Berlin: Becota. ISBN 978-3-00-060781-3, 3-00-060781-1
- CLARK, Tim, Alexander OSTERWALDER und Yves PIGNEUR, 2012. *Business model you: a one-page method for reinventing your career*. Hoboken, N.J.: Wiley. ISBN 978-1-118-15631-5, 1-118-15631-5
- OSTERWALDER, Alexander und andere, 2014. *Value proposition design: how to create products and services customers want*. Hoboken, NJ: Wiley. ISBN 978-1-118-96805-5, 1-118-96805-0
- DUARTE, Nancy, 2019. *Data story: explain data and inspire action through story*. [Oakton, Virginia]: Ideapress Publishing. ISBN 978-1-940858-98-2, 1-940858-98-4
- KIRK, Andy, 2019. *Data visualisation: a handbook for data driven design*. 2. Auflage. Los Angeles; London; New Delhi; Singapore; Washington DC; Melbourne: Sage. ISBN 978-1-5264-6892-5, 978-1-5264-6893-2

Additional remarks:

No remarks.

Project Applied Design Leadership			
Module abbreviation:	PJ_ADL_M-DL	SPO-No.:	5
Curriculum:	Programme	Module type	Semester
	Design Leadership (SPO WS 22/23)	Compulsory module	2
Module attributes:	Language of instruction	Duration of module	Frequency of offer
	English	1 semester	only summer term
Responsible for module:	Rothbucher, Bernhard		
Lecturers:	Ilieva, Magdalena; Rothbucher, Bernhard		
Credit points / SWS:	6 ECTS / 5 SWS		
Workload:	Contact hours:	58 h	
	Self-study:	92 h	
	Total workload:	150 h	
Subjects of the module:	Project Applied Design Leadership		
Lecture types:	S-Seminar		
Examinations:	Proj – Project work (5-25 pages) with oral presentation (15-20 Seiten)		
Usability for other study programs:	Please see the subject recognition list of SCS (Study Service Centre).		
Prerequisites according examination regulation:			
None			
Recommended prerequisites:			
None			
Objectives:			
<p>The students:</p> <ul style="list-style-type: none"> • can work independently in a role and together as a team on a complex design task based on a specific task at the interface between design and technology and business; • gain experience in the development of products; • develop routine in the development and design of products with CAD tools and in 3D printing of objects; • optimize a process that includes the steps of ideation, conception, draft, construction and elaboration; • can independently familiarize themselves with a topic that is new to them and work on it systematically using engineering and design methods; • improve their skills in working autonomously and developing solutions to individual complex problems from business environment; • are able to organise and structure themselves and their resources in a complex project; • improve their communication and presentation skills with regard to different stakeholders (e.g., from science, economics, communities); • students learn to work in a team, to organise teamwork and to solve conflicts in the team. 			
Content:			
<ul style="list-style-type: none"> • Roleplay 			

- Startup Project
- Entrepreneurship

Literature:

- AULET, Bill, 2013. *Disciplined entrepreneurship: 24 steps to a successful startup*. Hoboken, NJ: Wiley. ISBN 978-1-118-69228-8, 978-1-118-72088-2
- AULET, Bill, Marius URSACHE und Chris SNYDER, 2017. *Disciplined entrepreneurship workbook*. Hoboken, New Jersey: Wiley. ISBN 978-1-119-36577-8

Additional remarks:

Additional literature is depending on the specific project and project partner and will be provided throughout the course.

Project Design Prototyping			
Module abbreviation:	PJ_DP_M-DL	SPO-No.:	6
Curriculum:	Programme	Module type	Semester
	Design Leadership (SPO WS 22/23)	Compulsory module	2
Module attributes:	Language of instruction	Duration of module	Frequency of offer
	English	1 semester	only summer term
Responsible for module:	Siegel, Thomas		
Lecturers:	Ilieva, Magdalena; Siegel, Thomas		
Credit points / SWS:	6 ECTS / 5 SWS		
Workload:	Contact hours:	58 h	
	Self-study:	92 h	
	Total workload:	150 h	
Subjects of the module:	Project Design Prototyping		
Lecture types:	S-Seminar		
Examinations:	SA – Seminar paper (5-25 pages) with oral presentation (15-20 pages)		
Usability for other study programs:	Please see the subject recognition list of SCS (Study Service Centre).		
Prerequisites according examination regulation:			
None			
Recommended prerequisites:			
None			
Objectives:			
<p>The students</p> <ul style="list-style-type: none"> • know all necessary terms and methods regarding design development • are able to independently familiarize themselves with a topic that is new to them and apply systematically engineering and design methods onto it • are able to work independently and successfully on a complex design task based on a specific task including design and technology skills • are planning and optimizing their own design process during the project • develop routine in the development and design of products with prototypes, CAD tools, 3D printing and finishing • are able to sketch freehand and digital to illustrate their design • are able to create stunning and convincing presentations • gain further experience in the development of products 			
Content:			
<ul style="list-style-type: none"> • Specific complex design task e.g., new product • Basics terms of design: aesthetic, semantic, principles, 10 rules of good design • Basic functions of design: practical, aesthetic, sign and symbol function 			

<ul style="list-style-type: none">• Design process in steps: design briefing, analysis & research, ideation, conception, engineering, optimization, 3D modelling, printing, finishing• Considering design guidelines: shape appropriate, ergonomics, ease of use, repair, ready for assembly production, suitable for maintenance, conform to standards, suitable for recycling (sustainability)• Presentation of interim and final results.
Literature:
<ul style="list-style-type: none">• LIDWELL, William und Gerry MANACSA, 2011. <i>Deconstructing Product Design</i>. ISBN 978-1-59253-739-6• ALLEN, Tanja, 2019. <i>Solving critical design problems</i>. ISBN 978-0-367-02584-7
Additional remarks:
None

Design Leadership Methods			
Module abbreviation:	DLM_M-DL	SPO-No.:	7
Curriculum:	Programme	Module type	Semester
	Design Leadership (SPO WS 22/23)	Compulsory module	2
Module attributes:	Language of instruction	Duration of module	Frequency of offer
	English	1 semester	only summer term
Responsible for module:	Rothbucher, Bernhard		
Lecturers:	Rothbucher, Bernhard		
Credit points / SWS:	6 ECTS / 4 SWS		
Workload:	Contact hours:	47 h	
	Self-study:	103 h	
	Total workload:	150 h	
Subjects of the module:	Design Leadership Methods		
Lecture types:	SU/Ü-Seminar with integrated exercises		
Examinations:	StA mit Koll – Study work with colloquium, written elaboration 8-15 pages, presentation 15-20 pages		
Usability for other study programs:	Please see the subject recognition list of SCS (Study Service Centre).		
Prerequisites according examination regulation:			
None			
Recommended prerequisites:			
None			
Objectives:			
<p>After attending the course, the students are able to</p> <ul style="list-style-type: none"> • define and explain the concept, principles, and process of design leadership methods; • compare and contrast different methods of design leadership methods and evaluate their suitability for different purposes; • apply methods of design leadership on projects in product and service design. 			
Content:			
<ul style="list-style-type: none"> • Foundations of Design Leadership • Integration Tools • Innovation Project Simulation • Sociography • Visual Communication 			
Literature:			
<ul style="list-style-type: none"> • PICCHI, Andrea, 2022. <i>Design Management: Create, Develop, and Lead Effective Design Teams</i> [online]. Berkeley, CA: Apress PDF e-Book. ISBN 978-1-4842-6954-1. Verfügbar unter: https://doi.org/10.1007/978-1-4842-6954-1. 			

- COOPER, Rachel, 2013. *The handbook of design management*. London: Bloomsbury. ISBN 978-1-8478-8488-6, 978-1-84788-490-9
- ELKINGTON, Rob und andere, 2018. *Exceptional Leadership by Design: How Design in Great Organizations Produces Great Leadership*. Bingley: Emerald Publishing Limited. ISBN 978-1-78743-900-9
- CALABRETTA, Giulia, Gerda GEMSER und Ingo KARPEN, 2016. *Strategic design: eight essential practices every strategic designer must master*. Amsterdam: BIS publishers. ISBN 90-6369-445-8, 978-90-6369-445-6
- QUAYLE, Moura, 2017. *Designed leadership*. New York; Chichester, West Sussex: Columbia Business School Publishing. ISBN 978-0-231-17312-4

Additional remarks:

No remarks.

Design Culture Theory and Methods			
Module abbreviation:	DCT_M-DL	SPO-No.:	8
Curriculum:	Programme	Module type	Semester
	Design Leadership (SPO WS 22/23)	Compulsory module	2
Module attributes:	Language of instruction	Duration of module	Frequency of offer
	English	1 semester	only summer term
Responsible for module:	Rothbucher, Bernhard		
Lecturers:	Rothbucher, Bernhard		
Credit points / SWS:	6 ECTS / 5 SWS		
Workload:	Contact hours:	47 h	
	Self-study:	103 h	
	Total workload:	150 h	
Subjects of the module:	Design Culture Theory and Methods		
Lecture types:	SU/Ü-Seminar with integrated exercises		
Examinations:	Seminar paper with oral presentation (15 minutes), written elaboration (8-15 pages) and presentation (15-20 pages)		
Usability for other study programs:	Please see the subject recognition list of SCS (Study Service Centre).		
Prerequisites according examination regulation:			
None			
Recommended prerequisites:			
None			
Objectives:			
<p>After attending the course, the students</p> <ul style="list-style-type: none"> • can work on complex tasks in cross-functional and international teams, solve conflicts in the team and take over team leadership; • can organise themselves and manage their time as well as work in a goal-oriented and independent manner; • know the performance and limits of the methods learned and can name them; • apply frameworks for responsible innovation to ensure the ethical development and application of new technologies; • define and explain the concepts of business ethics and technology ethics. 			
Content:			
<ul style="list-style-type: none"> • Cultural Probing • Intercultural Communication • Design Culture Excursion • Business Ethics • Sustainability and Social Responsiveness 			

Literature:

- MEYER, Erin, 2015. *The culture map: decoding how people think, lead, and get things done across cultures*. New York, NY: Public Affairs. ISBN 978-1-61039-276-1
- BOEIJEN, Annemiek van, Jaap DAALHUIZEN und Jelle ZIJLSTRA, 2020. *Delft design guide: perspectives, models, approaches, methods*. Amsterdam, The Netherlands: BIS Publishers. ISBN 978-90-6369-540-8, 90-6369-540-3
- BOEIJEN, Annemiek van und Yvo ZIJLSTRA, 2020. *Culture sensitive design: a guide to culture in practice*. Amsterdam: BIS Publishers. ISBN 978-90-6369-561-3
- SAGMEISTER, Simon und Joe Paul KROLL, 2018. *Business culture design: Develop Your Corporate Culture with the Culture Map*. Frankfurt; New York: Campus Verlag. ISBN 978-3-593-43815-3

Additional remarks:

No remarks.

Scientific Research Seminar			
Module abbreviation:	ScienResS_M-DL	SPO-No.:	10
Curriculum:	Programme	Module type	Semester
	Design Leadership (SPO WS 22/23)	Compulsory module	2
Module attributes:	Language of instruction	Duration of module	Frequency of offer
	English	1 semester	only winter term
Responsible for module:	Rothbucher, Bernhard		
Lecturers:	Oelker, Martin; Rothbucher, Bernhard		
Credit points / SWS:	7 ECTS / 6 SWS		
Workload:	Contact hours:	70 h	
	Self-study:	105 h	
	Total workload:	175 h	
Subjects of the module:	Scientific Research Seminar		
Lecture types:	SU/Ü-Seminar with integrated exercises		
Examinations:	SA – Seminar paper (5-25 pages) with oral presentation (15-20 pages)		
Usability for other study programs:	Please see the subject recognition list of SCS (Study Service Centre).		
Prerequisites according examination regulation:			
None			
Recommended prerequisites:			
None			
Objectives:			
<p>After attending the course, the students</p> <ul style="list-style-type: none"> • can plan, implement and manage a research project, including the development of a research question and hypotheses; • can perform literature reviews and evaluate scientific articles; • understand different scientific research designs and can critically assess them; • understand correct ways to refer to and cite from scientific literature; • understand and apply selected qualitative research methods, specifically interview studies and qualitative content analysis; • understand and apply selected quantitative methods, specifically survey and experimental research, as well as related statistical analysis, and can apply them to data evaluation in research projects; • can analyse interdisciplinary problems, recognize correlations, transfer learned competences to new problems and evaluate developed solutions technically, economically and socially; • can present work results in a scientific presentation and scientific paper or poster; • have improved their skills in English writing for scientific purposes; • can work on complex tasks in cross-functional and international teams, solve conflicts in the team and take over team leadership; • can organise themselves and manage their time as well as work in a goal-oriented and independent manner. 			

Content:

- Introduction Advanced Research Methods
- Applied qualitative research
- Applied quantitative research
- Carrying out a complex interdisciplinary research project within small teams regarding technology development, economy, and society
- Research design
- Literature search and review
- Scientific writing and scientific presentations
- Critical scientific review
- Data types and data collection techniques
- Overview of best practices and current tools for conducting effective literature reviews (data bases, working with citation programs, literature mapping tools)
- Quantitative and qualitative methods and data analyses
- Research integrity
- Autonomous processing applying scientific methods and acquired skills

Literature:

Will be specified at the beginning of the course.

Additional remarks:

Literature and self-study resources will be provided throughout the course.

Master Thesis			
Module abbreviation:	MaTh_M-DL	SPO-No.:	11
Curriculum:	Programme	Module type	Semester
	Design Leadership (SPO WS 22/23)	Compulsory module	
Module attributes:	Language of instruction	Duration of module	Frequency of offer
	English	1 semester	winter and summer term
Responsible for module:	Rothbucher, Bernhard		
Lecturers:			
Credit points / SWS:	30 ECTS / 0 SWS		
Workload:	Contact hours:	0 h	
	Self-study:	750 h	
	Total workload:	750 h	
Subjects of the module:	11.1: Master's Thesis 11.2: Colloquium		
Lecture types:	MA/KO-Master's thesis/Colloquium		
Examinations:	11.1: Master's thesis 11.2: Colloquium		
Usability for other study programs:	None		
Prerequisites according examination regulation:			
None			
Recommended prerequisites:			
None			
Objectives:			
<p>Master's Thesis:</p> <p>The students:</p> <ul style="list-style-type: none"> are able to carry out autonomously a complex research project in the area of design leadership at the interface of technology, economy and design on a high scientific level; are able to apply the acquired skills and scientific methods; are able to integrate the results into a professional context and to present them in a scientific paper. <p>Colloquium:</p> <p>The students:</p> <ul style="list-style-type: none"> can present and defend the theses in the given time and answer the questions of the examiner in technical language. 			
Content:			
Master's Thesis:			

- Empirical Research
- Creative process
- Business Application

Literature:

- LÜDEKE-FREUND, Florian, Henning BREUER und Lorenzo MASSA, 2022. *Sustainable business model design: 45 patterns*. Berlin, Germany: published by the authors. ISBN 978-3-9824003-0-3

Additional remarks:

Additional literature is depending on the specific project and project partner and will be provided throughout the course.

5.2 Individual Electives

Advanced Theories and Methods of Sustainability Management in a Globalized Economy

Module abbreviation:	WMod_ATMSM_M-EGM	SPO-No.:	9
Curriculum:	Programme	Module type	Semester
	Design Leadership (SPO WS 22/23)	Individual Electives	
Module attributes:	Language of instruction	Duration of module	Frequency of offer
	English	1 semester	only winter term

Responsible for module:	Schneider, Yvonne		
Lecturers:	Schneider, Yvonne		
Credit points / SWS:	5 ECTS / 5 SWS		
Workload:	Contact hours:	58 h	
	Self-study:	67 h	
	Total workload:	125 h	
Subjects of the module:	Advanced Theories and Methods of Sustainability Management in a Globalized Economy		
Lecture types:	SU/Ü – Lecture with integrated exercises		
Examinations:	LN – oral examination, 15 minutes		
Usability for other study programs:	None		

Prerequisites according examination regulation:

None

Recommended prerequisites:

None

Objectives:

By actively participating in this course, students

- will get an understanding of sustainability management and its opportunities to achieve a competitive advantage in business;
- will analyze companies upon the basis of measurement tools and KPIs for actions in the field of sustainability;
- will be familiar with the theoretical basis of sustainability through applied examples and concepts.

Major theories, cases, examples, and calculation exercises are integrated through the course to reinforce and to clarify major topics.

Content:

This module provides a deeper understanding of theory, methods, and challenges of sustainability. Among others, the following aspects will be discussed:

- Advanced theories and methods of sustainability and in particular sustainability strategies for international companies.
- Influence of a globalized economy on sustainability and vice versa.

- Sustainability in business and the TBL influence on companies' organizations and strategies.
- Applied stakeholder management perspectives.

Literature:

- JONKER, Jan, FABER, Niels, 2021. *Organizing for sustainability: a guide to developing new business models* [online]. Cham, Switzerland: Palgrave Macmillan PDF E-Book. ISBN 978-3-030-78157-6. Verfügbar unter: <https://doi.org/10.1007/978-3-030-78157-6>.
- HAHN, Rüdiger, 2022. *Sustainability management: global perspectives on concepts, instruments, and stakeholders*. Fellbach: Rüdiger Hahn. ISBN 978-3-9823211-0-3, 3-9823211-0-7
- RITZ, Aixa A., RIMANOCZY, Isabel, 2021. *Sustainability mindset and transformative leadership: a multidisciplinary perspective* [online]. Cham, Switzerland: Palgrave Macmillan PDF E-Book. ISBN 978-3-030-76069-4. Verfügbar unter: <https://doi.org/10.1007/978-3-030-76069-4>.

Additional remarks:

No remarks.

Cost Benchmarking and Data Driven Product Optimization			
Module abbreviation:	WMod_CoBench_M-EGM	SPO-No.:	9
Curriculum:	Programme	Module type	Semester
	Design Leadership (SPO WS 22/23)	Individual Electives	
Module attributes:	Language of instruction	Duration of module	Frequency of offer
	English	1 semester	winter and summer term
Responsible for module:	Hecht, Dirk		
Lecturers:	Hartmann, Matthias; Hecht, Dirk		
Credit points / SWS:	5 ECTS / 5 SWS		
Workload:	Contact hours:	58 h	
	Self-study:	67 h	
	Total workload:	125 h	
Subjects of the module:	Cost benchmarking and data driven product optimization		
Lecture types:	SU/Ü - seminaristischer Unterricht/Übung		
Examinations:	LN – oral examination, 15 minutes		
Usability for other study programs:	None		
Prerequisites according examination regulation:			
None			
Recommended prerequisites:			
None			
Objectives:			
<p>The students</p> <ul style="list-style-type: none"> understand the principles of cost analysis and implement them using the example of a drive unit practice the physical structure of a cost structure, bill of materials and photo documentation in the laboratory become familiar with common scientific approaches to successful benchmarking can implement learned theories for product optimization and deepen them in practical exercises understand the approaches of AI for parametric cost evaluation 			
Content:			
<ul style="list-style-type: none"> Cost Analysis of ID 3 Drive Unit Work at Lab Develop Cost Structure of various technologies Benchmarking with other concepts Parametric Costing incl. AI Scenario analytic Software Costing 			

<ul style="list-style-type: none">• Creative Thinking / Idea Generation – Tools & Methods (incl. AI)
Literature:
<ul style="list-style-type: none">• GROOVER, Mikell P., 2021. <i>Fundamentals of modern manufacturing: materials, processes, and systems</i>. Singapore: Wiley. ISBN 978-1-119-70642-7• JAMES, Gareth und andere, 2021. <i>An introduction to statistical learning: with applications in R</i>. New York, NY, USA: Springer. ISBN 978-1-0716-1417-4, 978-1-0716-1420-4• STADTLER, Hartmut, KILGER, Christoph, MEYR, Herbert, 2015. <i>Supply chain management and advanced planning: concepts, models, software, and case studies</i> [online]. Berlin, Heidelberg: Springer Berlin Heidelberg PDF e-Book. ISBN 978-3-642-55309-7. Verfügbar unter: https://doi.org/10.1007/978-3-642-55309-7.
Additional remarks:
No remarks.

Entrepreneurship & Innovation Management			
Module abbreviation:	ES_Inno_Mgt_M_EGM	SPO-No.:	9
Curriculum:	Programme	Module type	Semester
	Design Leadership (SPO WS 22/23)	Individual Electives	2
Module attributes:	Language of instruction	Duration of module	Frequency of offer
	English	1 semester	winter and summer term
Responsible for module:	Albrecht, Tobias		
Lecturers:	Albrecht, Tobias		
Credit points / SWS:	5 ECTS / 5 SWS		
Workload:	Contact hours:	59 h	
	Self-study:	66 h	
	Total workload:	125 h	
Subjects of the module:	Entrepreneurship & Innovation Management		
Lecture types:	SU/Ü-Lecture with exercises		
Examinations:	LN – Project work		
Usability for other study programs:	None		
Prerequisites according examination regulation:			
None			
Recommended prerequisites:			
None			
Objectives:			
<p>The students get to:</p> <ul style="list-style-type: none"> • understand the challenges and pitfalls of starting-up a company; • comprehend important aspects of innovations; • be able to apply innovation management tools; • know how to implement start-up specific management concepts; • be able to develop convincing business plans; • be able to effectively work as a team; • further improve their presentation skills; • understand the relevance of innovation and entrepreneurship for society. 			
Content:			
<p>Theory</p> <ul style="list-style-type: none"> • What is entrepreneurship? • Innovation: types, sources, how to find? • Innovation management and -strategy, • Start-ups: strategy agile product development, marketing, financing • Business plans 			

- Other relevant topics: e.g., legal forms, intellectual property right

Start-up Project:

- Creating of a business concept along 3 milestones, incl. pitch-presentations
- Formulating a business plan as a team
- Development of a prototype/mock-up ad a pitch-Videos

Literature:

- KAWASAKI, Guy, 2015. *The art of the start 2.0: the time-tested, battle-hardened guide for anyone starting anything*. London: Portfolio Penguin. ISBN 978-0-241-18726-5
- RIES, Eric, 2019. *The lean startup: how constant innovation creates radically successful businesses*. London: Penguin Business. ISBN 978-0-670-92160-7

Additional remarks:

No remarks.

Gründercoaching /Entrepreneurship			
Module abbreviation:	MVM_EC	SPO-No.:	9
Curriculum:	Programme	Module type	Semester
	Design Leadership (SPO WS 22/23)	Individual Electives	
Module attributes:	Language of instruction	Duration of module	Frequency of offer
	Deutsch/Englisch	1 Semester / 1 semester	Winter- und Sommersemester / winter and summer term
Responsible for module:	Bader, Martin		
Lecturers:	Bader, Martin		
Credit points / SWS:	5 ECTS / 5 SWS		
Workload:	Contact hours:	47 h	
	Self-study:	78 h	
	Total workload:	125 h	
Subjects of the module:	Entrepreneurship Coaching		
Lecture types:	SU/Ü-Lecture with exercises		
Examinations:	LN-oral examination, 15 minutes		
Usability for other study programs:	Siehe die Fächeranerkennungsliste des SCS.		
Prerequisites according examination regulation:			
None			
Recommended prerequisites:			
None			
Objectives:			
After successfully completing the module, students will be able to:			
<ul style="list-style-type: none"> • develop and evaluate a business idea themselves and differentiate it into a consistent business plan; • identify the success factors for certain types of business and derive appropriate measures for implementation; • consistently prepare the implementation and initiate or actually introduce the business idea to the market by founding a company; • prepare specifically for participation in start-up competitions and fulfil the challenges that arise there. 			
Content:			
<ul style="list-style-type: none"> • Ideation • Value Proposition Design • Business Model Canvas • Business Model Innovation • Minimal Viable Product & Preto-/Prototyping • Business Planning 			

- Pitching

Literature:

- AULET, Bill, Thomas DEMMIG und Marius URSACHE, 2013/2016. *Disciplined entrepreneurship (engl.) / Startup mit System: In 24 Schritten zum erfolgreichen Entrepreneur*. Hoboken, NJ: Wiley. ISBN 978-1-118-69228-8, 978-1-118-72088-2
- BAYSTARTUP GBMH, *Handbuch Businessplan-Erstellung, Der Weg zum erfolgreichen Unternehmen* [online] Zugriff am: 18.07.2022. Verfügbar unter: <https://www.baystartup.de/startups/handbuch-businessplan-erstellung>; https://www.baystartup.de/fileadmin/Dokumente/Downloads/Handbuch_Businessplan_Erstellung.pdf
- KAWASAKI, Guy, 2015. *The art of the start 2.0: The time-tested, battle-hardened guide for anyone starting anything*. London: Portfolio Penguin. ISBN 978-0-241-18726-5, 978-1-59184-811-0
- RIES, Eric, 2017. *The lean startup: how today's entrepreneurs use continuous innovation to create radically successful businesses*. New York: Currency. ISBN 978-1-5247-6240-7
- FUEGLISTALLER, U. und andere, 2019. *Entrepreneurship: Modelle – Umsetzung – Perspektiven mit Fallbeispielen aus Deutschland, Österreich und der Schweiz*. 5. Auflage. Wiesbaden: SpringerGabler. ISBN 978-3-658-26799-5
- GASSMANN, Oliver, Karolin FRANKENBERGER und Michaela CSIK, 2017. *Geschäftsmodelle entwickeln: 55 innovative Konzepte mit dem St. Galler Business Model Navigator*, 2. Auflage. München: Hanser. ISBN 978-3446451759
- GASSMANN, Oliver, Karolin FRANKENBERGER und Michaela CHOUDURY, 2020. *Business Model Navigator: The Strategies Behind the Most Successful Companies*. 2. Auflage. Harlow: Pearson. ISBN 978-1292327129
- OSTERWALDER, Alexander und Yves PIGNEUR, 2010. *Business Model Generation: Ein Handbuch für Visionäre, Spielveränderer und Herausforderer*. ISBN 978-3-593-39474-9
- OSTERWALDER, Alexander und Yves PIGNEUR, 2014. *Value Proposition Design: How to Create Products and Services Customers Want*. ISBN 978-1118968055

Additional remarks:

Coaching is carried out (where possible) in cooperation with a business partner as a business mentor. Through this cooperation, each team receives a business mentor in addition to support from the THI lecturer.

Internationales Projekt			
Module abbreviation:	InternProj_M-WI	SPO-No.:	9
Curriculum:	Programme	Module type	Semester
	Design Leadership (SPO WS 22/23)	Individual Electives	2
Module attributes:	Language of instruction	Duration of module	Frequency of offer
	Deutsch/English	1 Semester / 1 semester	Winter- und Sommersemester / Winter and summer term
Responsible for module:	Hecht, Dirk		
Lecturers:	Hecht, Dirk; Schwandner, Gerd		
Credit points / SWS:	5 ECTS / 5 SWS		
Workload:	Contact hours:	59 h	
	Self-study:	66 h	
	Total workload:	125 h	
Subjects of the module:	International Project		
Lecture types:	SU/Ü-Seminaristischer Unterricht/Übung / Lecture with integrated exercises		
Examinations:	Project work with oral presentation (15 minutes) and written elaboration (5 - 25 pages)		
Usability for other study programs:	Keine/None		
Prerequisites according examination regulation:			
Keine/None			
Recommended prerequisites:			
Keine/None			
Objectives:			
<p>Die Studierenden können selbstständig ein abgegrenztes Thema aus dem internationalen Kontext nach wissenschaftlichen Anforderungen bearbeiten und Lösungsvorschläge präsentieren.</p> <p>Students can independently work on a delimited topic from the international context according to scientific requirements and present proposed solutions.</p>			
Content:			
<p>Die Inhalte werden jeweils an das entsprechende Land adaptiert und mit aktuellen Aspekten der Internationalität bzw. Globalisierung abgerundet.</p> <p>The contents are adapted to the respective country and rounded off with current aspects of internationality or globalization.</p>			
Literature:			
Wird zu Beginn bekannt gegeben. / Will be announced during the course.			
Additional remarks:			
Blockseminar/Compact seminar			

Strategic Foresight and Trend Analysis			
Module abbreviation:	StratFor_M-GFT	SPO-No.:	9
Curriculum:	Programme	Module type	Semester
	Design Leadership (SPO WS 22/23)	Individual Electives	1
Module attributes:	Language of instruction	Duration of module	Frequency of offer
	English	1 semester	winter and summer term
Responsible for module:	Schwarz, Jan Oliver		
Lecturers:	Schwarz, Jan Oliver		
Credit points / SWS:	5 ECTS / 5 SWS		
Workload:	Contact hours:	59 h	
	Self-study:	66 h	
	Total workload:	125 h	
Subjects of the module:	Strategic Foresight and Trend Analysis		
Lecture types:	SU/Ü-Seminar with integrated exercises.		
Examinations:	mdIP – oral examination (15-20 minutes)		
Usability for other study programs:	Please see the subject recognition list of SCS.		
Prerequisites according examination regulation:			
None			
Recommended prerequisites:			
None			
Objectives:			
<p>The students:</p> <ul style="list-style-type: none"> • understand the most important foresight methods and can distinguish and explain them; • can apply the methods learned in case studies; • can methodically analyse trends and derive future developments; • are aware of challenges in future thinking and can address these. 			
Content:			
<ul style="list-style-type: none"> • Customer-, technology-, and competitor-foresight • Trend analysis and strategic early identification • Visioning • Strategic simulation methods • Prognostic crowdsourcing • Delphi method • Scenario technique • Trendreceiver method • Analysis of Science Fiction 			

Literature:

- ELLER, E., HOFMANN, R., SCHWARZ, J.O., 2020. The Customer Foresight Territory. In: *Marketing Review St Gallen*. (3), S.888–895.
- HEIJDEN, Kees van der, 2009. *Scenarios: the art of strategic conversation*. 2. Auflage. Chichester [u.a.]: Wiley. ISBN 0-470-02368-6, 978-0-470-02368-6
- KRUPP, Steven, Paul J. SCHOEMAKER und David J. TEECE, 2014. *Winning the long game: how strategic leaders shape the future*. New York: Public Affairs. ISBN 1-61039-447-X, 978-1-61039-447-5
- LIEBL, Franz, SCHWARZ, Jan Oliver, 2010. Normality of the Future: Trend Diagnosis for Strategic Foresight. In: *Futures*. (42 (4)), S.313-327.
- ORIESEK, Daniel F., SCHWARZ, Jan Oliver, 2021. *Winning the uncertainty game: turning strategic intent into results with wargaming* [online]. London; New York: Routledge PDF E-Book. ISBN 9781000289855, 9780367853594. Verfügbar unter: <https://doi.org/10.4324/9780367853594>.
- ROHRBECK, René, MENES ETINGUE, Kum, 2018. Corporate Foresight and Its Impact on Firm Performance: A Longitudinal Analysis. In: *Technological Forecasting and Social Change*. Volume 129(April), S.105-116. ISSN <https://doi.org/10.1016/j.techfore.2017.12.013>
- ROHRBECK, René, BATTISTELLA, Cinzia, HUIZINGH, Eelko, 2015. Corporate Foresight: An Emerging Field with a Rich Tradition. In: *Technological Forecasting & Social Change*. Volume 101(December), S.1-9. ISSN <https://doi.org/10.1016/j.techfore.2015.11.002>
- ROHRBECK, René, SCHWARZ, Jan Oliver, 2013. The Value Contribution of Strategic Foresight: Insights from an Empirical Study of Large European Companies. In: *Technological Forecasting and Social Change*. Volume 80(8), S.1593–1606. ISSN <https://doi.org/http://dx.doi.org/10.1016/j.techfore.2013.01.004>
- SCHOEMAKER, Paul J. und Robert E. GUNTHER, May 2013. *Profiting from uncertainty: strategies for succeeding no matter what the future brings*. New York: Atria Books. ISBN 978-1-5011-6175-9
- SCHWARZ, Jan Oliver, 2015. The 'Narrative Turn' in Developing Foresight: Assessing How Cultural Products Can Assist Organisations in Detecting Trends. In: *Technological Forecasting and Social Change*. 90 (Part B), S.510–513. ISSN <https://doi.org/http://dx.doi.org/10.1016/j.techfore.2014.02.024>
- SCHWARZ, Jan Oliver, ROHRBECK, René, WACH, Bernhard, 2019. Corporate Foresight as a Microfoundation of Dynamic Capabilities. In: *FUTURES & FORESIGHT SCIENCE*. (e28) ISSN <https://doi.org/10.1002/ffo.2.28>

Additional remarks:

No remarks.

Technology Commercialization & Intellectual Property Management			
Module abbreviation:	EDB_TC&IPM	SPO-No.:	9
Curriculum:	Programme	Module type	Semester
	Design Leadership (SPO WS 22/23)	Individual Electives	2
Module attributes:	Language of instruction	Duration of module	Frequency of offer
	English	1 semester	winter and summer term
Responsible for module:	Bader, Martin		
Lecturers:	Bader, Martin; Kleyn, Madelein		
Credit points / SWS:	5 ECTS / 5 SWS		
Workload:	Contact hours:	58 h	
	Self-study:	67 h	
	Total workload:	125 h	
Subjects of the module:	Technology Commercialization & Intellectual Property Management		
Lecture types:	SU/Ü – lecture with integrated exercises		
Examinations:	LN – study work with oral presentation		
Usability for other study programs:	None		
Prerequisites according examination regulation:			
None			
Recommended prerequisites:			
None			
Objectives:			
<p>On completing the module part Technology-Commercialization, the students will have achieved the following learning outcomes:</p> <ul style="list-style-type: none"> • understand the Concept of Technology Transfer and commercialization • consider the processes and different options for commercializing IP • understand how to de-risk technology and get it ready for market • understand how SMEs can successfully transfer technology and use intellectual property strategically • know how to negotiate and how to (successfully) close deals <p>On completing the module part Intellectual Property Management, the students will have achieved the following learning outcomes based on scientific methods.</p> <p>Students are able to:</p> <ul style="list-style-type: none"> • understand the relevance of intellectual property (IP) and intellectual property rights (IPRs) in the context of business innovation and its role for the innovation economy, particularly for small and medium enterprises (SMEs) and startups. • understand what role and impact have IPRs and patents in digital businesses. • understand how digital business models can be protected. 			

- understand and analyse contents and structures of complex practical challenges in the current innovation ecosystem.
- filter, structure and process relevant information from experiences and opinions.
- evaluate and reflect the IP/IPRs needs of startups and SMEs in applying IP in business; based on the scientific state of the art in innovation and intellectual property management research, practical relevance and interdisciplinary demands of the different stakeholders.
- briefly retrieve these intellectual property rights, e.g., how to derive a patent publication of a company from the public patent databases, e.g., Espacenet

Content:

The module part Technology-Commercialization will follow the outline:

- Defining Technology Transfer and commercialization
- Options of technology commercialization: The Technology Transfer Process (Starting a business or obtaining a license)
- Stakeholders' engagement
- Some considerations for technology commercialization for different industries
- IP Strategy: defining it, developing it, implementing it
- Derisking: Do I have a business and what about it?
- Derisking: Freedom to operate considerations.
- Derisking: Funding considerations.
- Technology licensing: Basics, negotiation tactics, different forms of licensing
- Dealmaking game

In contrast to large companies, Startups as well as Small and Medium Enterprises (SMEs) across industries often have no differentiated processes, fewer research activities, and often no software tools to manage their intellectual property (IP). These often focus on clear cost/benefit aspects of a patent. Therefore, startup need to apply more stringent criteria. They usually have a widely networked but very lean internal structure. Frequently, all IP management-related activities, e.g., the patent filing process, including file management and search activities, therefore usually involve a high degree of outsourcing to external patent law firms and consultants. In addition, the problem of IP enforceability may arise regarding available resources and high costs. E.g., in contrast to large companies, startups are often disadvantaged and therefore generally prefer to keep an invention confidential or save costs on IP management instead of building a case investing in IP as a value driver, especially regarding their envisioned growth or exit strategy, respectively.

The module part Intellectual Property Management will follow the outline:

- Fundamentals of intellectual property rights
- Patent protection strategies
- Evaluating and valuing patents
- Successful practices in commercializing patents
- Organizing patent management
- Patent management by Industry
- Patent management in new technology environments
- Generally useful information for startups when dealing with patents

Literature:

- GASSMANN, Oliver, Martin A. BADER und Mark THOMPSON, 2021. *Patent Management: Protecting Intellectual Property and Innovation*. Cham, Switzerland: Springer. ISBN 978-3-030-59008-6
- BADER, Martin A. und Sevim SÜZEROĞLU-MELCHORS, 2023. *Intellectual Property Management for Start-ups - Enhancing Value and Leveraging the Potential*. Cham: Springer Nature. ISBN: 978-3-031-16992-2
- Verfügbar unter: https://www.wipo.int/edocs/pubdocs/en/wipo_casestudy_ip_comm_zh.pdf

- LAX, David A., SEBENIUS, James K. *Deal Making 2.0: A Guide to Complex Negotiations* [online]. Harvard Business Review: Harvard Business Publishing (HBP), Nov 2012 [Zugriff am: 28.12.2023]. Verfügbar unter: <https://hbr.org/2012/11/deal-making-20-a-guide-to-complex-negotiations>
- BADER, Martin A., 2006. *Intellectual property management in R&D collaborations: The case of the service industry sector*. Heidelberg: Physica. ISBN 3-7908-1702-3, 978-3-7908-1702-7
- BONAKDAR, Amir, FRANKENBERGER, Karolin, BADER, Martin A., GASSMAN, Oliver, 2017. *Capturing value from business models: The role of formal and informal protection strategies* [online]. International Journal of Technology Management, 2017 Vol.73 No.4, pp.151 - 175: International Journal of Technology Management, 20.03.2017. Verfügbar unter: 10.1504/IJTM.2017.083073
- Ohne Autor. *How to revolutionize your industry* [online]. Verfügbar unter: <https://www.youtube.com/watch?v=B4ZSGQW0UMI>
- FECHTELPETER, C. und andere, 2020. Integrated technology transfer concept for fostering innovation in SMEs. In: *26th International Association for Management of Technology Conference, IAMOT 2017*, S. 1028-1048.
- Hau, Yong. (2016). An empirical analysis of the influence of external knowledge network on SMEs' new technology development and technology commercialization capabilities in the perspective of open innovation. *Journal of Digital Convergence*. 14. 149-156. 10.14400/JDC.2016.14.5.149.
- Jo, D.H. & Park, J.W. (2017). The Determinants of Technology Commercialization Performance of Technology-based SMEs. *KSI Transactions on Internet and Information Systems*. 11. 4146-4161. 10.3837/tiis.2017.08.023.
- Park, T., Ryu, D. 2015 Drivers of technology commercialization and performance in SMEs: the moderating effect of environmental dynamisms *Management Decision*, 53 (2), pp. 338-353.
- TECHNOLOGY TRANSFER INNOVATION, Tom Hockaday, Publisher: Johns Hopkins University Press, Publication Date: April 2020: <http://www.technologytransferinnovation.com/book.html>
- Van Hemert, P., Nijkamp, P., Masurel, E. 2013 From innovation to commercialization through networks and agglomerations: analysis of sources of innovation, innovation capabilities and performance of Dutch SMEs *Annals of Regional Science*, 50 (2), pp. 425-452.
- Walker, Andy & Ellis, Harry. (2011). TECHNOLOGY TRANSFER: STRATEGY, MANAGEMENT, PROCESS AND INHIBITING FACTORS. A STUDY RELATING TO THE TECHNOLOGY TRANSFER OF INTELLIGENT SYSTEMS. *International Journal of Innovation Management*. 04. 10.1142/S1363919600000068.
- Alpaydin, Utku & Fitjar, Rune. (2020). Proximity across the Distant Worlds of University-Industry Collaborations. *Papers in Regional Science*. 100. 10.1111/pirs.12586.
- Etzkowitz, Henry. (2003). Innovation in Innovation: The Triple Helix of University-Industry-Government Relations. *Social Science Information Sur Les Sciences Sociales - SOC SCI INFORM*. 42. 293-337. 10.1177/05390184030423002.
- Jin, C.-H., Lee, J.-Y. 2020 The impact of entrepreneurship on managerial innovation capacity: The moderating effects of policy finance and management support *South African Journal of Business Management*, 51 (1), art. no. a246.
- Thompson, N.A., Herrmann, A.M., Hekkert, M.P. 2018 SME Knowledge Commercialization Through Public Sector Partnerships *International Journal of Innovation and Technology Management*, 15 (3), art. no. 1850021.
- Festel, G. 2015 Technology transfer models based in academic spin-offs within the industrial biotechnology sector *International Journal of Innovation Management*, 19 (4), art. no. 1550031.
- Kim, S.-S. 2020 Research on the effect factors of technical performance on SMEs by industrial sectors *Entrepreneurship and Sustainability Issues*, 8 (2), pp. 1120-1141.
- Meijer, L.L.J., Huijben, J.C.C.M., van Boxtael, A., Romme, A.G.L. 2019 Barriers and drivers for technology commercialization by SMEs in the Dutch sustainable energy sector *Renewable and Sustainable Energy Reviews*, 112, pp. 114-126.
- Glover, Garrett and Rader, Randall R., Why Every Company Should Have a Written Ip Licensing Policy (October 20, 2021). *les Nouvelles - Journal of the Licensing Executives Society*, Volume LVI No. 4, December 2021, Available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3946573.
- John Cronin and Paul DiGiammarino, Understanding and unifying diverse IP strategy perspectives, 2009, www.iam-media.com.

- Kim, M.-S., Lee, C.-H., Choi, J.-H., Jang, Y.-J., Lee, J.-H., Lee, J., Sung, T.-E. 2021 A study on intelligent technology valuation system: Introduction of kibo patent appraisal system II Sustainability (Switzerland), 13 (22), art. No. 12666.
- Patel, Developing an IP Checklist https://assets.fenwick.com/legacy/FenwickDocuments/Patent_Checklist.pdf.
- Gliga, G., Evers, N. 2010 Marketing challenges for high-tech SMEs Innovative Marketing, 6 (3), pp. 104-112.
- Kwon, Y.-I., Son, J.-K. 2018 A case study on the promising product selection indicators for small and medium-sized enterprises (SMEs) Journal of Open Innovation: Technology, Market, and Complexity, 4 (4), art. no. 56.
- Redondo, M., Camarero, C. and van der Sijde, P. (2021), "Exchange of knowledge in protected environments. The case of university business incubators", European Journal of Innovation Management, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/EJIM-08-2020-0341>.
- Taekyung Park & Jaehoon Rhee (2013) Network types and performance in SMEs: the mediating effects of technology commercialization, Asian Journal of Technology Innovation, 21:2, 290-304, DOI: 10.1080/19761597.2013.866311.
- Han, Junghee. (2017). Technology Commercialization through Sustainable Knowledge Sharing from University-Industry Collaborations, with a Focus on Patent Propensity. Sustainability. 9. 1808. 10.3390/su9101808.
- Kleyn, Madelein, Freedom to Operate Conundrum (October 20, 2021). les Nouvelles - Journal of the Licensing Executives Society, Volume LVI No. 4, December 2021, available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3946602.
- Daniel Gredel, Matthias Kramer, Boris Bend, Patent-based investment funds as innovation intermediaries for SMEs: In-depth analysis of reciprocal interactions, motives and fallacies, Technovation, Volume 32, Issues 9–10, 2012, Pages 536-549, ISSN 0166-4972, <https://doi.org/10.1016/j.technovation.2011.09.008>.
- Bobrowicz D. 2007. A Checklist for Negotiating License Agreements. In Intellectual Property Management in Health and Agricultural Innovation: A Handbook of Best Practices (eds. A Krattiger, RT Mahoney, L Nelsen, et al.). MIHR: Oxford, U.K., and PIPRA: Davis, U.S.A. Available online at www.ipHandbook.org.
- Vigil, Robert L. and Zhang, Xiao, Apportioning Value in Patent Portfolio License and Sale Agreements (October 19, 2020). les Nouvelles - Journal of the Licensing Executives Society, Volume LV No. 4, December 2020, Available at SSRN: <https://ssrn.com/abstract=3714864>.
- Asgari, M.J., Zakery, A., Pishvae, M.S. 2021 Open innovation antecedents and its consequences on commercialization performance in small and medium-sized enterprises 2021 Kybernetes, 10.1108/K-07-2020-0458.
- Erik E. Lehmann, Michele Meoli & Stefano Paleari (2021) Innovation, entrepreneurship and the academic context, Industry and Innovation, 28:3, 235-246, DOI: 10.1080/13662716.2021.1904843.
- http://www.buildingipvalue.com/08_intro/31-36IAG.pdf
- <https://sifted.eu/articles/university-spinouts-system-not-broken/>
- <https://www.computerworld.com/article/3558568/university-spinouts-what-are-the-benefits-of-the-system-and-how-does-it-work.html>
- <https://www.firma.de/en/company-formation/the-gmbh-the-pros-and-cons-of-the-german-limited-liability-company-llc/>
- <https://www.gov.uk/government/publications/intellectual-asset-management-for-universities>
- <https://www.mtu.edu/research/innovation/commercialize-technology/process/>
- <https://www.ucop.edu/knowledge-transfer-office/innovation/training-and-education/technology-commercialization-process.html>
- <https://www.utoledo.edu/research/TechTransfer/TTandCommProcess.html>
- Lee, Jun & Hong, Jung-Wan & Lee, Seok Kee. (2016). A Study on Business Model Consulting Framework for Technology Commercialization of ICT SMEs. Indian Journal of Science and Technology. 9. 10.17485/ijst2016v9i2697315

- VIGIL, Robert L., ZHANG, Xiao, 2020. Apportioning Value in Patent Portfolio License and Sale Agreements. In: *les Nouvelles - Journal of the Licensing Executives Society*. 2020 (Vol. LV (4)), S.21. ISSN <https://www.ssrn.com/abstract=3714864>
- BOBROWICZ, Donna, 2007. A Checklist for Negotiating License Agreements. In: Anatole KRATTIGER, Hrsg. *Intellectual Property Management in Health and Agricultural Innovation: A Handbook of Best Practices*. Oxford, U.K.: MIHR, S. 20. ISBN www.iphandbook.org

Additional remarks:

No remarks.