Technische Hochschule Ingolstadt

# Module Handbook

## M.Sc. DESIGN LEADERSHIP

## Faculty of Engineering and Management

Study and examination regulation WS 24/25

as of: 31.07.2026

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# 1 Overview

| | |
|---|---|
| **Name of the program** | 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, Germany |
| **Language of instruction** | English |
| **Cooperation** | None |
| **Admission requirement** | Bachelor's degree<br>Proof of English proficiency level B2 or higher |
| **Capacity** | 35 students p.a. |
| **Program director** | Prof. Dr. Bernhard Rothbucher<br>Tel.: +49 841 9348-5072<br>Room: N103<br>E-Mail: Bernhard.Rothbucher@thi.de |

# 2 Introduction

The program and course description describes the current state of the program modules in the Master´s degree “Design Leadership” according to the “Study and Examination Regulation” / “Studien- und Prüfungsordnung” of 29/04/2024.

Especially this “Program and Course Description” gives the objectives and contents of individual compulsory modules and the breakdown of SWS (semester hours per week) per module and semester. In case of doubt, the higher-ranking “Study and Examination 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 program is fully taught in English and welcomes both German and international students.

The aim of the "Design Leadership" master's program is to impart creative, technological and business skills, in particular interdisciplinary knowledge at the interface of design, technology and business. Based on 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 coverts their grades to the German grade system. Uni-Assist will issue a so-called preliminary inspection documentation (VPD) which you must upload to the application portal (like their other documents).
- Successful participation in an aptitude test; further details are regulated by the statutes on the aptitude test for the master program of the Faculty of Industrial Engineering M.Sc. Design Leadership at Technische Hochschule Ingolstadt dated 29.04.2024.
- 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 29/04/2024.
- "Rahmenprüfungsordnung" (RaPO).
- „Allgemeine Prüfungsordnung" (APO) of Technische Hochschule Ingolstadt.
- „Immatrikulationssatzung" of Technische Hochschule Ingolstadt.

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

## 2.3 Target group

The program addresses:

- 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 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 program fully taught in English, like to gain intercultural experience and go for an international career at home and abroad.

## 2.4 Structure of the program

The program 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 Interdisciplinary Innovation
- 2. Project 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 Thesis (Master thesis and Colloquium)

## 2.5 Prerequisites for advancement

To get the title of Master thesis requires at least 30 ECTS be achieved in the sequence of study (see “Studien- und Prüfungsordnung” as of 29/04/2024).

## 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, define goals and standards and plan, coordinate and cost-effectively implement innovation projects across disciplines.

An advisory board was built 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 program integrates the mission statement in the following ways:

*We prepare our students for the challenges of the future:*

- The master´s program creates future competence.
- It creates a spirit of innovation and teaches entrepreneurial thinking.
- It is an interdisciplinary program, 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 behavior and to social commitment.

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

- The master´s program 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-competence.

*We open outstanding regional and international perspectives for our students:*

- The master´s program is fully taught in English, addresses international students and creates intercultural competences.
- In this way, the program 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 program, 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 program 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 program is international and intercultural. Hence, the program 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 program

**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.
- 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.
- communicate and impart their competencies.
- 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 program

Projects are a focus in the program. 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<br>Project Design Creation<br>Advanced Management Theory and Methods<br>Creativity Methods in Business | Proj<br>SA<br>schrP<br>prP |
| Project Applied Design Leadership<br>Project Design Prototyping<br>Design Leadership Methods<br>Design Culture Theory and Methods<br>Individual Elective | Proj<br>SA<br>StA<br>SA<br>LN |
| Scientific Research Seminar<br>Master Thesis (Thesis + Colloquium) | SA with coll<br>MA (MA+Coll) |

For the form of examinations, please compare “Study and Examination Regulations” / “Studien- und Prüfungsordnung”, Appendix 1.

Below is an overview of the different examination formats with German acronym (as used in the “Studien- und Prüfungsordnung”), the English translation and a description.

| Acronym | English title | Description |
|---|---|---|
| schrP | Written examination | The written examination is a written examination lasting 90 minutes, unless explicitly stated otherwise. |

| | | |
|---|---|---|
| mdlP | Oral examination | The oral examination is an interview lasting 15 minutes per person, unless explicitly stated otherwise. |
| prP | Practical examination | Based on "real actions" of the student, it should be demonstrated that the student has mastered the practical application of the competences taught. The practical examination lasts 15 minutes unless explicitly stated otherwise. |
| StA | Student research project | The student research project is a term paper without an oral presentation. A term paper comprises a minimum of 3000 to a maximum of 6000 words (approx. 10 to 20 pages: Word document approx. 8 to 15 pages or Power Point approx. 15 to 20 slides). |
| SA | Seminar paper | The seminar paper is a term paper with an oral presentation. A term paper comprises a minimum of 3000 to a maximum of 6000 words (approx. 10 to 20 pages: Word document approx. 8 to 15 pages or Power Point approx. 15 to 20 slides). The oral presentation has a total length of 15-20 minutes and can also take place during the semester. |
| LN | Evidence of academic achievement | The evidence of academic achievement can alternatively be a written examination, an oral examination, a term paper, a seminar paper or a project work. The details are specified by the Faculty Council in the module handbook. |
| Proj | Project work | The project work is a group assignment in which several students work on a joint task as a team and present the results orally and in writing. Each student must contribute individually to the joint task and deliver an oral presentation lasting 15 minutes. The written part has a length of approx. 5-25 pages. |
| MA | Master thesis | Written thesis in the Master degree program: Maximum processing time (= period between registration of the Master's thesis and submission) of 6 months / length 60-80 pages |
| Coll | Colloquium | The colloquium is an oral examination lasting 10-15 minutes in which the student defends the results of his or her thesis. |

### 3.2.4 Application of the study program

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

Experts from the industry review the concept of the master´s program “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 program

| 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 program are:

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

# 4 Dual Studies

In cooperation with selected industry partners, the study program can be completed also in a dual study model. The dual study model is offered as a study program with in-depth practice, in which the regular study program is supplemented by intensive practical phases in a company.

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 two dual degree program models differs from the regular degree program concept in the following points:

- **Final thesis in the cooperation company**

In both dual study models, the final thesis is written at a cooperating company, usually on a practice-relevant topic related to the focus of study. Organizationally, the two dual degree program models are 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, 18 and 21) and the enrollment statutes (see §§ 8b and 18).

- **Master Thesis**

Description that is more detailed can be found in the corresponding module description.

# 5 Description of Modules

## 5.1 Compulsory Modules

# Project Interdisciplinary Innovation

| | | | |
|---|---|---|---|
| **Module abbreviation** | PJ_IntInno_M-DL | **Reg.-Nr.** | 1 |
| **Curriculum** | **Study Programme** | **Module type** | **Semester** |
| | Design Leadership | Compulsory Subject | 1 |
| **Module frequency** | only winter term | **Module duration** | 1 semester |

| | | | |
|---|---|---|---|
| **Responsible for module** | Rothbucher, Bernhard | | |
| **Lecturer(s)** | Rothbucher, Bernhard | | |
| **Language of instruction** | English | **Language of exams** | English |
| **Credit points / SWS** | 6 ECTS / 5 SWS | | |
| **Workload** | Contact hours | | 59 h |
| | Self-study | | 91 h |
| | Total | | 150 h |
| **Subjects of the module** | Project Interdisciplinary Innovation | | |
| **Lecture types** | S-Seminar | | |

**Examinations**

Proj - Project work (5-25 pages) with oral presentation (15 minutes)

**Additional explanations regarding examinations**

None

**Prerequisites according examination regulation**

None

**Recommended prerequisites**

None

**Objectives**

The students:

- 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.
- can organize and structure themselves and their resources in a complex project.
- improve their communication and presentation skills regarding different stakeholders (e.g. from science, economics, communities).
- learn to work in a team, to organize teamwork and to solve conflicts in the team.

**Content**

- 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*. 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
- MILTON, Alex und Paul A. RODGERS, 2022. *Research methods for product design*. London: Laurence King. ISBN 978-1-78067-302-8


**Additional remarks**

Meeting the attendance requirement and actively contributing to the project work are necessary conditions for receiving a positive grade.

| Project Design Creation | | | |
|---|---|---|---|
| **Module abbreviation** | PJ_DC_M-DL | **Reg.-Nr.** | 2 |
| **Curriculum** | **Study Programme** | **Module type** | **Semester** |
| | Design Leadership | Compulsory Subject | 1 |
| **Module frequency** | only winter term | **Module duration** | 1 semester |

| | | | |
|---|---|---|---|
| **Responsible for module** | Siegel, Thomas | | |
| **Lecturer(s)** | Ilieva, Magdalena; Siegel, Thomas | | |
| **Language of instruction** | English | **Language of exams** | English |
| **Credit points / SWS** | 6 ECTS / 5 SWS | | |
| **Workload** | Contact hours | | 59 h |
| | Self-study | | 91 h |
| | Total | | 150 h |
| **Subjects of the module** | Project Design Creation | | |
| **Lecture types** | S - Seminar | | |

**Examinations**

SA - Seminar paper with oral presentation (15 min), written elaboration (8-15 pages) or presentation (15-20 pages)

**Additional explanations regarding examinations**

None

**Prerequisites according examination regulation**

None

**Recommended prerequisites**

None

**Objectives**

At the end of the course students can

- know all necessary terms and methods from the scientific literature regarding design development.
- independently familiarize themselves with a topic that is new to them and apply systematically engineering and design methods onto it.
- work independently and successfully on a complex design task based on a specific task including design and technology skills.
- plan and optimize 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.
- sketch freehand and digital to illustrate their design.
- create stunning and convincing presentations.
- gain further experience in the development of products.

**Content**

- 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

- Regarding 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 results

**Literature**


- HEUFLER, Gerhard, Michael LANZ und Martin PRETTENTHALER, 2020. *Design basics: from ideas to products*. 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*. [s.l.]: O'Reilly and Associates. ISBN 978-0596804176


**Additional remarks**

Meeting the attendance requirement and actively contributing to the project work are necessary conditions for receiving a positive grade.

| Advanced Management Theory and Methods | | | |
|---|---|---|---|
| **Module abbreviation** | AdMana_M-DL | **Reg.-Nr.** | 3 |
| **Curriculum** | **Study Programme** | **Module type** | **Semester** |
| | Design Leadership | Compulsory Subject | 1 |
| **Module frequency** | only winter term | **Module duration** | 1 semester |

| | | | |
|---|---|---|---|
| **Responsible for module** | Schneider, Yvonne | | |
| **Lecturer(s)** | Schneider, Yvonne | | |
| **Language of instruction** | English | **Language of exams** | English |
| **Credit points / SWS** | 6 ECTS / 4 SWS | | |
| **Workload** | Contact hours | | 47 h |
| | Self-study | | 103 h |
| | Total | | 150 h |
| **Subjects of the module** | Advanced Management Theory and Methods | | |
| **Lecture types** | SU/Ü - lecture with integrated exercises | | |

**Examinations**

schrP90 - written exam, 90 minutes

**Additional explanations regarding examinations**

None

**Prerequisites according examination regulation**

None

**Recommended prerequisites**

None

**Objectives**

By actively participating in this course, students:

- are able to understand the basic elements of management in corporations.
- are familiar with structures and processes in companies.
- are 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.
- are 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.

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

| **Content** |
| --- |
| This module provides a general overview on theory, methods and challenges of Management. Among others, the following aspects will be discussed:<br>• Leading the Organization<br>• Developing Strategic Foresight<br>• Managing Financial performance<br>• Exploiting Market opportunities<br>• Excursus: Managing Start-up Activities |
| **Literature** |
| • ROBBINS, Stephan P. und Mary COULTER, 2021. *Management*. [s.l.]: Pearson. ISBN 978-1-292-34088-3<br>• NICKELS, William G., James M. MCHUGH und Susan M. MCHUGH, 2022. *Understanding business*. New York, NY: McGraw-Hill. ISBN 978-1-266-04322-2, 1-266-04322-5 |
| **Additional remarks** |
| Additional literature and self-study resources will be provided throughout the course. |

| Creativity Methods in Business | | | |
|---|---|---|---|
| **Module abbreviation** | CreaMetho_M-DL | **Reg.-Nr.** | 4 |
| **Curriculum** | **Study Programme** | **Module type** | **Semester** |
| | Design Leadership | Compulsory Subject | 1 |
| **Module frequency** | only winter term | **Module duration** | 1 semester |

| | | | |
|---|---|---|---|
| **Responsible for module** | Rothbucher, Bernhard | | |
| **Lecturer(s)** | Rothbucher, Bernhard | | |
| **Language of instruction** | English | **Language of exams** | English |
| **Credit points / SWS** | 6 ECTS / 4 SWS | | |
| **Workload** | Contact hours | | 47 h |
| | Self-study | | 103 h |
| | Total | | 150 h |
| **Subjects of the module** | Creativity Methods in Business | | |
| **Lecture types** | SU/Ü - Lecture with exercises | | |

**Examinations**

prP - practical examination (15 min)

**Additional explanations regarding examinations**

None

**Prerequisites according examination regulation**

None

**Recommended prerequisites**

None

**Objectives**

After attending the course, the students are able to

- define and explain the concept, principles, and process of creativity methods.
- describe the most common creativity methods from the scientifc literature, to compare and contrast them and evaluate their suitability for different purposes.
- apply methods of creativity on projects in product and service design.
- develop new tools based on existing methods.
- plan and conduct a creativity workshop, including designing templates.
- reflect on a metalevel which creativity method is suitable for which business challenge.

**Content**

- Perceptual Psychology
- Human Behaviour
- Creation Methods
- Visualisation Methods
- Analysis Methods

**Literature**

- LIDWELL, William, Kritina HOLDEN und Jill BUTLER, 2010. *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]*. 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*. Los Angeles; London; New Delhi; Singapore; Washington DC; Melbourne: Sage. ISBN 978-1-5264-6892-5, 978-1-5264-6893-2

**Additional remarks**

Meeting the attendance requirement and actively contributing to the project work are necessary conditions for receiving a positive grade.

# Project Applied Design Leadership

| | | | |
|---|---|---|---|
| **Module abbreviation** | PJ_ADL_M-DL | **Reg.-Nr.** | 5 |
| **Curriculum** | **Study Programme** | **Module type** | **Semester** |
| | Design Leadership | Compulsory Subject | 2 |
| **Module frequency** | only summer term | **Module duration** | 1 semester |

| | | | |
|---|---|---|---|
| **Responsible for module** | Rothbucher, Bernhard | | |
| **Lecturer(s)** | Eisenmann, Marion; Rothbucher, Bernhard | | |
| **Language of instruction** | English | **Language of exams** | English |
| **Credit points / SWS** | 6 ECTS / 5 SWS | | |
| **Workload** | Contact hours | | 59 h |
| | Self-study | | 91 h |
| | Total | | 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 minutes)

**Additional explanations regarding examinations**

None

**Prerequisites according examination regulation**

None

**Recommended prerequisites**

None

**Objectives**

At the end of the course students are able to

- 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.
- develop products and 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.
- 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.
- 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).
- learn to work in team, to organise teamwork and to solve conflicts in team.

**Content**

- Roleplay
- Startup Project
- Entrepreuneurship

| 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<br>• AULET, Bill, Chris SNYDER und Chris SNYDER, 2017. *Disciplined entrepreneurship workbook*. Hoboken, New Jersey: Wiley. ISBN 978-1-119-36579-2, 1-119-36579-1<br>• MILTON, Alex und Paul A. RODGERS, 2022. *Research methods for product design*. London: Laurence King. ISBN 978-1-78067-302-8 |
| **Additional remarks** |
| Additional literature depends on the specific project and project partner and will be provided throughout the course.<br>Meeting the attendance requirement and actively contributing to the project work are necessary conditions for receiving a positive grade. |

# Project Design Prototyping

| | | | |
|---|---|---|---|
| **Module abbreviation** | PJ_DP_M-DL | **Reg.-Nr.** | 6 |
| **Curriculum** | **Study Programme** | **Module type** | **Semester** |
| | Design Leadership | Compulsory Subject | 2 |
| **Module frequency** | only summer term | **Module duration** | 1 semester |

| | | | |
|---|---|---|---|
| **Responsible for module** | Siegel, Thomas | | |
| **Lecturer(s)** | Lee, Lucia; Mayer, Simon | | |
| **Language of instruction** | English | **Language of exams** | English |
| **Credit points / SWS** | 6 ECTS / 5 SWS | | |
| **Workload** | Contact hours | | 59 h |
| | Self-study | | 91 h |
| | Total | | 150 h |
| **Subjects of the module** | Project Design Prototyping | | |
| **Lecture types** | S - Seminar | | |

**Examinations**

SA - Seminar paper with oral presentation (15 min), written elaboration (8-15 pages) or presentation (15-20 pages)

**Additional explanations regarding examinations**

None

**Prerequisites according examination regulation**

None

**Recommended prerequisites**

None

**Objectives**

The students

- know all necessary terms and methods from the scientific literature 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 prototypes, CAD tools, 3D printing and finishing
- can sketch freehand and digital to illustrate their design
- can create stunning and convincing presentations
- gain further experience in the development of products

**Content**

- 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, 3D modelling #svhs#amp## 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 results

**Literature**


- LIDWELL, William und Gerry MANACSA, 2011. *Deconstructing Product Design*. [s.l.]: rockpub. ISBN 978-1-59253-739-6
- ALLEN, Tania, 2019. *Solving critical design problems: theory and practice*. New York; London: Routledge, Taylor & Francis Group. ISBN 978-0-367-02584-7, 978-0-367-02583-0


**Additional remarks**

Meeting the attendance requirement and actively contributing to the project work are necessary conditions for receiving a positive grade.

# Design Leadership Methods

| | | | |
|---|---|---|---|
| **Module abbreviation** | DLM_M-DL | **Reg.-Nr.** | 7 |
| **Curriculum** | **Study Programme** | **Module type** | **Semester** |
| | Design Leadership | Compulsory Subject | 2 |
| **Module frequency** | only summer term | **Module duration** | 1 semester |

| | | | |
|---|---|---|---|
| **Responsible for module** | Rothbucher, Bernhard | | |
| **Lecturer(s)** | Rothbucher, Bernhard | | |
| **Language of instruction** | English | **Language of exams** | English |
| **Credit points / SWS** | 6 ECTS / 4 SWS | | |
| **Workload** | Contact hours | | 47 h |
| | Self-study | | 103 h |
| | Total | | 150 h |
| **Subjects of the module** | Design Leadership Methods | | |
| **Lecture types** | SU/Ü - Lecture with practical exercises | | |

**Examinations**

StA - Student research project, written elaboration 8-15 pages, presentation 15-20 pages

**Additional explanations regarding examinations**

None

**Prerequisites according examination regulation**

None

**Recommended prerequisites**

None

**Objectives**

After attending the course, the students are able to

- define and explain the concept, principles, and process of design leadership methods;
- compare 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;
- relate themselves to the principles of design leadership methods;
- can analyze an existing team structure and can develop a strategy to transform it into a preferred one;
- use case studies from the research literature and relate it to their real-world business situation;

**Content**

- Foundations of Design Leadership
- Integration Tools
- Innovation Project Simulation
- Sociography
- Visual Communication

| **Literature** |
| --- |
| • PICCHI, Andrea, 2022. *Design Management: Create, Develop, and Lead Effective Design Teams* [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.<br>• COOPER, Rachel, 2017. *The handbook of design management*. London: Bloomsbury. ISBN 978-1-3500-0001-8, 978-1-8478-8488-6<br>• ELKINGTON, Rob und andere, 2018. *Exceptional leadership by design: how design in great organizations produces great leadership*. Bingley, UK: Emerald Publishing. ISBN 978-1-78743-901-6<br>• 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<br>• QUAYLE, Moura, 2017. *Designed leadership* [online]. New York; Chichester, West Sussex: Columbia University Press. PDF e-Book. ISBN 978-0-231-54468-9. Verfügbar unter: https://doi.org/10.7312/quay17312. |
| **Additional remarks** |
| Meeting the attendance requirement and actively contributing to the project work are necessary conditions for receiving a positive grade. |

| Design Culture Theory and Methods | | | |
|---|---|---|---|
| **Module abbreviation** | DCT_M-DL | **Reg.-Nr.** | 8 |
| **Curriculum** | **Study Programme** | **Module type** | **Semester** |
| | Design Leadership | Compulsory Subject | 2 |
| **Module frequency** | only summer term | **Module duration** | 1 semester |

| | | | |
|---|---|---|---|
| **Responsible for module** | Rothbucher, Bernhard | | |
| **Lecturer(s)** | Rothbucher, Bernhard; Schulze, Tanja | | |
| **Language of instruction** | English | **Language of exams** | English |
| **Credit points / SWS** | 6 ECTS / 5 SWS | | |
| **Workload** | Contact hours | | 59 h |
| | Self-study | | 91 h |
| | Total | | 150 h |
| **Subjects of the module** | Design Culture Theory and Methods | | |
| **Lecture types** | SU/Ü - lecture with practical exercises | | |

**Examinations**

SA - Seminar paper with oral examination (15 min), written elaboration (8-15 pages) and presentation (15-20 pages)

**Additional explanations regarding examinations**

None

**Prerequisites according examination regulation**

None

**Recommended prerequisites**

None

**Objectives**

After attending the course, the students

- can work on complex tasks in cross-functional and international teams, solve conflicts in the team and take over team leadership;
- can organize 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.
- can apply scientific standards to their work assignment
- can communicate the results of their research to an expert audience

**Content**

- 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*. [1. Auflage. Frankfurt, New York: Campus Verlag. ISBN 978-3-593-50840-5, 3-593-50840-0


**Additional remarks**

Meeting the attendance requirement and actively contributing to the project work are necessary conditions for receiving a positive grade.

| Scientific Research Seminar | | | |
|---|---|---|---|
| **Module abbreviation** | ScienResS_M-DL | **Reg.-Nr.** | 10 |
| **Curriculum** | **Study Programme** | **Module type** | **Semester** |
| | Design Leadership | Compulsory Subject | 2 |
| **Module frequency** | only summer term | **Module duration** | 1 semester |

| | | | |
|---|---|---|---|
| **Responsible for module** | Rothbucher, Bernhard | | |
| **Lecturer(s)** | Rothbucher, Bernhard | | |
| **Language of instruction** | English | **Language of exams** | English |
| **Credit points / SWS** | 7 ECTS / 6 SWS | | |
| **Workload** | Contact hours | | 70 h |
| | Self-study | | 105 h |
| | Total | | 175 h |
| **Subjects of the module** | Scientific Research Seminar | | |
| **Lecture types** | SU/Ü - lecture with practical exercises | | |

**Examinations**

SA mit Koll - seminar paper with colloquium, duration 15 minutes, written elaboration 8-15 pages, presentation 15-20 slides

**Additional explanations regarding examinations**

None

**Prerequisites according examination regulation**

None

**Recommended prerequisites**

None

**Objectives**

After attending the course, the students

- 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 analyze 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 organize 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 analysis
- Research integrity
- Autonomous processing, applying scientific methods and acquired skills

**Literature**


- GLASMAN-DEAL, Hilary, c2010. *Science research writing for non-native speakers of English*. London: Imperial College Press. ISBN 978-1-84816-309-6, 978-1-84816-310-2
- KOSKINEN, Ilpo Kalevi, © 2011. *Design research through practice: from the lab, field, and showroom*. Waltham, MA: Morgan Kaufmann. ISBN 978-0-12-385502-2, 0-12-385502-0
- TROCHIM, William M., James P. DONELLY und Kanika ARORA, 2016. *Research Methods*. Boston: Cengage Lesrning. ISBN 978-1-133-95477-4
- KOSKINEN, Ilpo, 2011. *Design Research Through Practice*. Waltham: Morgan Kaufmann. ISBN 978-0-12-385502-02
- MURATOVSKI, Gjoko, 2016. *Research for designers: a guide to methods and practice*. Los Angeles: SAGE. ISBN 978-1-4462-7514-6, 978-1-4462-7513-9
- CREME, Phyllis und Mary R. LEA, 2008. *Writing at university: a guide for students*. Buckingham: Open University Press. ISBN 0-335-22116-5


**Additional remarks**

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

Meeting the attendance requirement and actively contributing to the project work are necessary conditions for receiving a positive grade.

| Master Thesis | | | |
|---|---|---|---|
| **Module abbreviation** | MaTh_M-DL | **Reg.-Nr.** | 11 |
| **Curriculum** | **Study Programme** | **Module type** | **Semester** |
| | Design Leadership | Compulsory Subject | 3 |
| **Module frequency** | winter and summer term | **Module duration** | 1 semester |

| | | | |
|---|---|---|---|
| **Responsible for module** | Rothbucher, Bernhard | | |
| **Lecturer(s)** | | | |
| **Language of instruction** | English | **Language of exams** | English |
| **Credit points / SWS** | 30 ECTS / 0 SWS | | |
| **Workload** | Contact hours<br>Self-study<br>Total | | 0 h<br>750 h<br>750 h |
| **Subjects of the module** | 11.1: Master-Thesis<br>11.2: Kolloquium | | |
| **Lecture types** | 11.1: Master-Thesis<br>11.2: Kolloquium | | |

**Examinations**

11.1: Master's Thesis
11.2: Colloquium

**Additional explanations regarding examinations**

None

**Prerequisites according examination regulation**

The topic of the Master Thesis is issued at the beginning of the second study semester at the earliest and can only be issued if at least 30 ECTS credits have been successfully completed in academic studies and examinations.

**Recommended prerequisites**

None

**Objectives**

Master-Thesis:

The students:

- can carry out autonomously a complex research project in design leadership at the interface of technology, economy and design on a high scientific level.
- can apply the acquired skills and scientific methods.
- can integrate the results into a professional context and present them in a scientific paper.

Colloquium:

The students:

- can present and defend the theses in the given time and answer the questions of the examiner in technical language.

**Content**

- Empirical Research

- Creative process
- Business application
- Pretest in target group

**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 depends on the specific project and project partner and will be provided throughout the course.

For dual students: The final thesis is written at the dual company, on a practice-relevant topic related to the focus of study.

According to the APO, the master's thesis can be written in German or English language.

## 5.2 Individual Electives

Starting with winter semester 2024/25, there is a separate module handbook for the descriptions of the elective modules, which is part of the semester curriculum for the master's degree program "Design Leadership".

**Note**: Please note that not all modules listed in the module handbook for electives can be selected for your degree program. The current list of selectable modules for your degree program and the module handbook for electives can be found on the Moodle page of your degree program under Information on Electives.

Link: https://moodle.thi.de/course/view.php?id=8244&section=4