# Module Guide

# Applied Research in Engineering Sciences

Faculty Electrical Engineering and Media Technology

Examination regulations 15.03.2020

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# 1.1 SUBJECT SPECIFIC COMPULSORY ELECTIVE 1

| | |
|---|---|
| Module code | 1.1 |
| Module coordination | Prof. Dr. Werner Bogner |
| Course number and name | 1.1 |
| Semester | 1 |
| Duration of the module | 1 semester |
| Module frequency | each semester |
| Course type | compulsory elective course |
| Level | Postgraduate |
| Semester periods per week (SWS) | 4 |
| ECTS | 5 |
| Workload | Time of attendance: 60 hours<br>self-study: 90 hours<br>Total: 150 hours |
| Type of Examination | Examination form of the chosen module |
| Weighting of the grade | 5/90 |
| Language of Instruction | German |

## Module Objective

The learning outcomes for this module can be found in the course description provided in the module handbook for the degree programme in question to which the course pertains.

## Applicability in this and other Programs

The module?s applicability can be derived from the course description provided in the module handbook for the degree programme in question to which the course pertains.

## Entrance Requirements

The requirements for taking this module can be found in the course description provided in the module handbook for the degree programme in question to which the course pertains.

## Learning Content

The modules currently offered at Deggendorf Institute of Technology for Subject-Specific Compulsory Elective 1 can be viewed on the website at: https://www.th-deg.de/Fakultäten/emt/ar-m-lehrmodule.pdf. A description of each module can be found in the module handbooks for the relevant degree programmes.

## Teaching Methods

Seminar-style tuition, exercises, seminars, internship

## Remarks

Depending on the selected module, the teaching language can be German or English.

## Recommended Literature

A list of recommended literature for this module can be found in the course description provided in the module handbook for the degree programme in question to which the course pertains.

# 1.2 SUBJECT SPECIFIC COMPULSORY ELECTIVE 2

| | |
|---|---|
| Module code | 1.2 |
| Module coordination | Prof. Dr. Werner Bogner |
| Course number and name | 1.2 |
| Semester | 1 |
| Duration of the module | 1 semester |
| Module frequency | each semester |
| Course type | compulsory elective course |
| Level | postgraduate |
| Semester periods per week (SWS) | 4 |
| ECTS | 5 |
| Workload | Time of attendance: 60 hours<br>self-study: 90 hours<br>Total: 150 hours |
| Type of Examination | Examination form of the chosen module |
| Weighting of the grade | 5/90 |
| Language of Instruction | German |

## Module Objective

The learning outcomes for this module can be found in the course description provided in the module handbook for the degree programme in question to which the course pertains.

## Applicability in this and other Programs

The module?s applicability can be derived from the course description provided in the module handbook for the degree programme in question to which the course pertains.

## Entrance Requirements

The requirements for taking this module can be found in the course description provided in the module handbook for the degree programme in question to which the course pertains.

## Learning Content

The modules currently offered at Deggendorf Institute of Technology for Subject-Specific Compulsory Elective 2 can be viewed on the website at: https://www.th-deg.de/Fakultäten/emt/ar-m-lehrmodule.pdf. A description of each module can be found in the module handbooks for the relevant degree programmes.

## Teaching Methods

Seminar-style tuition, exercises, seminars, internship

## Remarks

Depending on the selected module, the teaching language can be German or English.

## Recommended Literature

A list of recommended literature for this module can be found in the course description provided in the module handbook for the degree programme in question to which the course pertains.

# 1.3 SUBJECT SPECIFIC COMPULSORY ELECTIVE 3

| | |
|---|---|
| Module code | 1.3 |
| Module coordination | Prof. Dr. Werner Bogner |
| Course number and name | 1.3 |
| Semester | 2 |
| Duration of the module | 1 semester |
| Module frequency | each semester |
| Course type | compulsory elective course |
| Level | postgraduate |
| Semester periods per week (SWS) | 4 |
| ECTS | 5 |
| Workload | Time of attendance: 60 hours<br>self-study: 90 hours<br>Total: 150 hours |
| Type of Examination | Examination form of the chosen module |
| Weighting of the grade | 5/90 |
| Language of Instruction | German |

## Module Objective

The learning outcomes for this module can be found in the course description provided in the module handbook for the degree programme in question to which the course pertains.

## Applicability in this and other Programs

The module?s applicability can be derived from the course description provided in the module handbook for the degree programme in question to which the course pertains.

## Entrance Requirements

The requirements for taking this module can be found in the course description provided in the module handbook for the degree programme in question to which the course pertains.

## Learning Content

The modules currently offered at Deggendorf Institute of Technology for Subject-Specific Compulsory Elective 3 can be viewed on the website at: https://www.th-deg.de/Fakultäten/emt/ar-m-lehrmodule.pdf. A description of each module can be found in the module handbooks for the relevant degree programmes.

## Teaching Methods

Seminar-style tuition, exercises, seminars, internship

## Remarks

Depending on the selected module, the teaching language can be German or English.

## Recommended Literature

A list of recommended literature for this module can be found in the course description provided in the module handbook for the degree programme in question to which the course pertains.

## 1.4 SUBJECT SPECIFIC COMPULSORY ELECTIVE 4 (INTER-UNIVERSITY)

| | |
|---|---|
| Module code | 1.4 |
| Module coordination | Prof. Dr. Werner Bogner |
| Course number and name | 1.4 |
| Lecturers | Prof. Dr. Jens Ebbecke<br>Prof. Dr. Mathias Hartmann<br>Prof. Dr. Gabriel Herl<br>Prof. Dr. Bernd Kuhn<br>N.N.<br>Prof. Bjoern Seeger<br>Sebastian Wilhelm |
| Semester | 2 |
| Duration of the module | 1 semester |
| Module frequency | each semester |
| Course type | compulsory elective course |
| Level | postgraduate |
| Semester periods per week (SWS) | 6 |
| ECTS | 6 |
| Workload | Time of attendance: 90 hours<br>self-study: 90 hours<br>Total: 180 hours |
| Type of Examination | Examination form of the chosen module |
| Weighting of the grade | 6/90 |
| Language of Instruction | German |

### Module Objective

See available individual inter-university modules for the semester in question:

https://www.th-deg.de/Fakultäten/emt/MAPR-hochschuluebergreifende_module.pdf

### Applicability in this and other Programs

See available individual inter-university modules for the semester in question:

https://www.th-deg.de/Fakultäten/emt/MAPR-hochschuluebergreifende_module.pdf

### Entrance Requirements

See available individual inter-university modules for the semester in question:

https://www.th-deg.de/Fakultäten/emt/MAPR-hochschuluebergreifende_module.pdf

## Learning Content

See available individual inter-university modules for the semester in question:

https://www.th-deg.de/Fakultäten/emt/MAPR-hochschuluebergreifende_module.pdf

## Teaching Methods

Seminar-style tuition, exercises, seminars, internship

## Recommended Literature

See available individual inter-university modules for the semester in question:

https://www.th-deg.de/Fakultäten/emt/MAPR-hochschuluebergreifende_module.pdf

# 2.1 INTERDISCIPLINARY COMPULSORY ELECTIVE IWPM 1

| | |
|---|---|
| Module code | 2.1 |
| Module coordination | Prof. Dr. Werner Bogner |
| Course number and name | 2.1 |
| Semester | 2 |
| Duration of the module | 1 semester |
| Module frequency | each semester |
| Course type | compulsory elective course |
| Level | postgraduate |
| Semester periods per week (SWS) | 4 |
| ECTS | 5 |
| Workload | Time of attendance: 60 hours<br>self-study: 90 hours<br>Total: 150 hours |
| Type of Examination | Examination form of the chosen module |
| Weighting of the grade | 5/90 |
| Language of Instruction | German |

## Module Objective

The learning outcomes for this module can be found in the course description provided in the module handbook for the degree programme in question to which the course pertains.

## Applicability in this and other Programs

The module?s applicability can be derived from the course description provided in the module handbook for the degree programme in question to which the course pertains.

## Entrance Requirements

The requirements for taking this module can be found in the course description provided in the module handbook for the degree programme in question to which the course pertains.

## Learning Content

The modules currently offered at Deggendorf Institute of Technology for Inter-disciplinary Compulsory Elective 1 can be viewed on the website at: https://www.th-deg.de/Fakultäten/emt/ar-m-lehrmodule.pdf. A description of each module can be found in the module handbooks for the relevant degree programmes.

## Teaching Methods

Seminar-style tuition, exercises, seminars, internship

## Remarks

Depending on the selected module, the teaching language can be German or English.

## Recommended Literature

A list of recommended literature for this module can be found in the course description provided in the module handbook for the degree programme in question to which the course pertains.

## 2.2 FM&S - RESEARCH METHODS AND STRATEGIES (INTER-UNIVERSITY)

| | |
|---|---|
| Module code | 2.2 |
| Module coordination | Prof. Dr. Werner Bogner |
| Course number and name | 2.2 |
| Lecturers | N.N.<br>Prof. Dr. Anton Schmailzl<br>Prof. Peter Schmieder<br>Prof. Dr. Kristina Wanieck |
| Semester | 1 |
| Duration of the module | 1 semester |
| Module frequency | each semester |
| Course type | compulsory elective course |
| Level | postgraduate |
| Semester periods per week (SWS) | 6 |
| ECTS | 6 |
| Workload | Time of attendance: 90 hours<br>self-study: 90 hours<br>Total: 180 hours |
| Type of Examination | Examination form of the chosen module |
| Weighting of the grade | 6/90 |
| Language of Instruction | German |

### Module Objective

See available individual inter-university modules for the semester in question:

https://www.th-deg.de/Fakultäten/emt/MAPR-hochschuluebergreifende_module.pdf

### Applicability in this and other Programs

See available individual inter-university modules for the semester in question:

https://www.th-deg.de/Fakultäten/emt/MAPR-hochschuluebergreifende_module.pdf

### Entrance Requirements

See available individual inter-university modules for the semester in question:

https://www.th-deg.de/Fakultäten/emt/MAPR-hochschuluebergreifende_module.pdf

### Learning Content

See available individual inter-university modules for the semester in question:

https://www.th-deg.de/Fakultäten/emt/MAPR-hochschuluebergreifende_module.pdf

## Teaching Methods

Seminar-style tuition, exercises, seminars, internship

## Recommended Literature

See available individual inter-university modules for the semester in question:

https://www.th-deg.de/Fakultäten/emt/MAPR-hochschuluebergreifende_module.pdf

# 3.1 PROJECT ASSIGNMENT 1

| | |
|---|---|
| Module code | 3.1 |
| Module coordination | Prof. Dr. Werner Bogner |
| Course number and name | 3.1 |
| Semester | 1 |
| Duration of the module | 1 semester |
| Module frequency | each semester |
| Course type | required course |
| Level | Postgraduate |
| Semester periods per week (SWS) | 10 |
| ECTS | 12 |
| Workload | Time of attendance: 150 hours<br>self-study: 210 hours<br>Total: 360 hours |
| Type of Examination | project work |
| Weighting of the grade | 12/90 |
| Language of Instruction | German |

## Module Objective

Through this project assignment, students acquire the ability to tackle problems of a scientific and technical nature largely on their own as well as in small groups under the guidance of a suitably qualified university scientist. This requires students planning and structuring both the content of the project and their time and documenting their outcomes in an appropriate manner. The conventionally applied requirements of a bachelor?s thesis aside, students need to consider other requirements such as their performance in international projects.

**Students will achieve the following learning objectives:**

**Professional skills**
Students acquire the ability to immerse themselves in tasks of a scientific and technical nature and analyse and resolve problems on their own. They are able to tackle and solve even major tasks by working in conjunction with cross-functional departments.

**Methodological skills**
Using their scientific knowledge, students acquire the ability to tackle and resolve, unassistedly, a large-scale issue of relevance to engineering science.

**Soft skills**
Students are able to tackle, independently and in application of self-discipline, a definable (sub-)project of practical relevance to engineering science from a scientific

and methodological perspective. They are furthermore able to present their outcomes in writing by independently compiling a scientific paper.

## Applicability in this and other Programs

For this degree program: Compulsory subject within Master Applied Research in Engineering Sciences

For other degree program: None

## Entrance Requirements

Recommended: Knowledge and skills gained from the topic-related modules

## Learning Content

- The topic selected for Project Assignment 1 is assigned and supervised by a professor from one of the institutes of higher education involved, who will also provide guidance on its content. The project assignment should always link practical studies to theoretical components. Students should maintain constant contact and intensively interact with their mentors and/or employees of the supervising institutes to ensure that subject-related matter is conveyed. Topics should ideally relate to those which also involve industry partners. Parts of the work may then also take place at these companies provided that this serves to further broaden the student?s professional competence.

- The written project paper is to be submitted to the supervisor at the end of the semester. In addition to covering the methods applied and the factual findings, the paper should also include elements typically found in reports on major projects (e.g. assessments of the market situation, the drawing of comparisons with the latest international developments in science and engineering). The specific guidelines and requirements will vary depending on the topic in question and be set by the relevant supervisor.

- A component of Project Assignments 1 and 2 is to prepare a publishable article. This may take the form of a conference paper or an article in a scientific journal. In conjunction with their supervisor, students should inform themselves as to the possible, meaningful forms of publication and choose at least one suitable means of doing so; (should all submitted articles be rejected, a proposal will be made to publish the contribution on the web page of the degree programme in question). No topics shall be permitted where the publication of all the findings is fundamentally rejected by an industry partner.

## Teaching Methods

Project

## Remarks

Workload: 20 hours Supervisory input provided by the person assigning the topic; 40 hours supervisory input provided by the institutes and/or industry partner(s); 150 hours unassisted practical work alone or in a team, 150 hours preparatory reading, theoretical work and documentation = 360 hours

## 3.2 SEMINAR 1

| | |
|---|---|
| Module code | 3.2 |
| Module coordination | Prof. Dr. Werner Bogner |
| Course number and name | 3.2 |
| Lecturer | Prof. Dr. Markus Straßberger |
| Semester | 1 |
| Duration of the module | 1 semester |
| Module frequency | each semester |
| Course type | required course |
| Level | postgraduate |
| Semester periods per week (SWS) | 2 |
| ECTS | 2 |
| Workload | Time of attendance: 30 hours<br>self-study: 30 hours<br>Total: 60 hours |
| Type of Examination | oral examination |
| Weighting of the grade | 2/90 |
| Language of Instruction | English |

# Module Objective

**Professional skills**

Students are able to present, in English, at times difficult technical and scientific interdependencies outlined in Project Assignment 1 before an expert audience in the shape of an oral presentation and provide adequately long responses to questions concerning their presentation.

**Methodological skills**

Students can intelligibly convey the nature and content of their findings from Project Assignment 1 to an expert audience and present them within a defined time frame.

**Soft skills**

Students are able to outline the outcomes in a presentation. The scenario of holding a presentation before an expert audience serves as a precursor to numerous similar situations students will encounter during their careers, especially with regard to time constraints and focusing on core messages; as such, this seminar prepares them for similar work-related situations.

# Applicability in this and other Programs

For this degree program: Compulsory subject within Master Applied Research in Engineering Sciences

For other degree program: None

## Entrance Requirements

Recommended: Theoretical and practical skills in presenting scientific findings derived from lectures during their pre-studies (e.g. practical seminar, Bachelor seminar)

## Learning Content

- The project assignment outcomes are outlined in oral presentations and subsequently discussed during accompanying seminars. Students are thus also consciously trained in presenting their findings and outcomes to experts from adjacent specialist fields within a defined short time frame.
- The length and type of presentation as well as the language used (English) and any additional accompanying documents (handouts) that may be involved are all determined in mutual agreement with the supervisor.
- The presentations are collectively discussed in student groups with the supervisor present. Where possible and feasible, guests from participating companies and from institutes of higher education should also generally be invited.
- Where research-oriented work is concerned, students write reports independently, such as patent searches. The outcomes of such work may also be presented in brief as part of the collective seminars.

## Teaching Methods

Seminar

## Remarks

Workload: 48 hours Preparation and elaboration; 4 hours compilation of accompanying materials; 8 hours attendance of seminars = 60 hours

# 4.1 PROJECT ASSIGNMENT 2

| | |
|---|---|
| Module code | 4.1 |
| Module coordination | Prof. Dr. Werner Bogner |
| Course number and name | 4.1 |
| Semester | 2 |
| Duration of the module | 1 semester |
| Module frequency | each semester |
| Course type | required course |
| Level | Postgraduate |
| Semester periods per week (SWS) | 10 |
| ECTS | 12 |
| Workload | Time of attendance: 150 hours<br>self-study: 210 hours<br>Total: 360 hours |
| Type of Examination | project work |
| Weighting of the grade | 12/90 |
| Language of Instruction | German |

## Module Objective

- Through this project assignment, students acquire the ability to tackle problems of a scientific and technical nature largely on their own as well as in small groups under the guidance of a suitably qualified university scientist. This requires students planning and structuring both the content of the project and their time and documenting their outcomes in an appropriate manner. The conventionally applied requirements of a bachelor?s thesis aside, students need to consider other requirements such as their performance in international projects.

- In addition to Project Assignment 1 itself, the second half of the work above all involves outlining the correlations that exist between theoretical and practical research. Whilst the second project report may refer to the first report, it must be discernible as a self-contained work.

**Students will achieve the following learning objectives:**

**Professional skills**
Students acquire the ability to immerse themselves in tasks of a scientific and technical nature and analyse and resolve problems on their own. They are able to tackle and solve even major tasks by working in conjunction with cross-functional departments.

**Methodological skills**
Using their scientific knowledge, students acquire the ability to tackle and resolve, unassistedly, a large-scale issue of relevance to engineering science.

**Soft skills**
Students are able to tackle, independently and in application of self-discipline, a definable (sub-)project of practical relevance to engineering science from a scientific and methodological perspective. They are furthermore able to present their outcomes in writing by independently compiling a scientific paper.

## Applicability in this and other Programs

For this degree program: Compulsory subject within Master Applied Research in Engineering Sciences

For other degree program: None

## Entrance Requirements

Recommended: Knowledge and skills gained from the topic-related modules

## Learning Content

- The topic selected for Project Assignment 2 is assigned and supervised by a professor from one of the institutes of higher education involved, who will also provide guidance on its content. The project assignment should always link practical studies to theoretical components. Students should maintain constant contact and intensively interact with their mentors and/or employees of the supervising institutes to ensure that subject-related matter is conveyed. Topics should ideally relate to those which also involve industry partners. Parts of the work may then also take place at these companies provided that this serves to further broaden the student?s professional competence.

- The written project paper is to be submitted to the supervisor at the end of the semester. In addition to covering the methods applied and the factual findings, the paper should also include elements typically found in reports on major projects (e.g. assessments of the market situation, the drawing of comparisons with the latest international developments in science and engineering). The specific guidelines and requirements will vary depending on the topic in question and be set by the relevant supervisor.

- A component of Project Assignments 1 and 2 is to prepare a publishable article. This may take the form of a conference paper or an article in a scientific journal. In conjunction with their supervisor, students should inform themselves as to the possible, meaningful forms of publication and choose at least one suitable means of doing so; (should all submitted articles be rejected, a proposal will be made to publish the contribution on the web page of the degree programme in question). No topics shall be permitted where the publication of all the findings is fundamentally rejected by an industry partner.

## Teaching Methods

Project

## Remarks

Workload: 20 hours supervisory input provided by the person assigning the topic; 40 hours supervisory input provided by the institutes and/or industry partner(s); 150 hours unassisted practical work alone or in a team; 150 hours preparatory reading, theoretical work and documentation = 360 hours

## 4.2 PROJECT SEMINAR 2

| | |
|---|---|
| Module code | 4.2 |
| Module coordination | Prof. Dr. Werner Bogner |
| Course number and name | 4.2 |
| Lecturer | Prof. Dr. Markus Straßberger |
| Semester | 2 |
| Duration of the module | 1 semester |
| Module frequency | each semester |
| Course type | required course |
| Level | postgraduate |
| Semester periods per week (SWS) | 2 |
| ECTS | 2 |
| Workload | Time of attendance: 30 hours<br>self-study: 30 hours<br>Total: 60 hours |
| Type of Examination | oral examination |
| Weighting of the grade | 2/90 |
| Language of Instruction | English |

# Module Objective

A professional delivery of scientific and technical findings, to be held as presentations, is integral to the successful completion of projects. This includes presenting results achieved in groups and presenting complex linkages within a tight timeframe. A further aim is to draw a close correlation between the written project assignment and the presentations held during the seminars.

**Students will achieve the following learning objectives:**

**Professional skills**

Students are able to present, in English, at times difficult technical and scientific interdependencies outlined in Project Assignment 2 before an expert audience in the shape of an oral presentation and provide adequately long responses to questions concerning their presentation.

**Methodological skills**

Students can intelligibly convey the nature and content of their findings from Project Assignment 2 to an expert audience and present them within a defined time frame.

**Soft skills**

Students are able to outline the outcomes in a presentation. The scenario of holding a presentation before an expert audience serves as a precursor to numerous similar situations students will encounter during their careers, especially with regard to time constraints and focusing on core messages; as such, this seminar prepares them for similar work-related situations.

## Applicability in this and other Programs

For this degree program: Compulsory subject within Master Applied Research in Engineering Sciences

For other degree program: None

## Entrance Requirements

Recommended: Theoretical and practical skills in presenting scientific findings derived from lectures during their pre-studies (e.g. practical seminar, bachelor?s seminar)

## Learning Content

- The project assignment outcomes are outlined in oral presentations and subsequently discussed during accompanying seminars. Students are thus also consciously trained in presenting their findings and outcomes to experts from adjacent specialist fields within a defined short timeframe.
- The length and type of presentation as well as the language used (English) and any additional accompanying documents (handouts) that may be involved are all determined in mutual agreement with the supervisor.
- The presentations are collectively discussed in student groups with the supervisor present. Where possible and feasible, guests from participating companies and from institutes of higher education should also generally be invited.
- Where research-oriented work is concerned, students write reports independently, such as patent searches. The outcomes of such work may also be presented in brief as part of the collective seminars.

## Teaching Methods

Seminar

## Remarks

Workload: 48 hours Preparation and elaboration; 4 hours compilation of accompanying materials; 8 hours attendance of seminars = 60 hours

# 5.1 MASTER'S THESIS

| | |
|---|---|
| Module code | 5.1 |
| Module coordination | Prof. Dr. Werner Bogner |
| Course number and name | 5.1 |
| Semester | 3 |
| Duration of the module | 1 semester |
| Module frequency | each semester |
| Course type | required course |
| Level | postgraduate |
| Semester periods per week (SWS) | 0 |
| ECTS | 28 |
| Workload | Time of attendance: 0 hours<br>self-study: 840 hours<br>Total: 840 hours |
| Type of Examination | master thesis |
| Weighting of the grade | 28/90 |
| Language of Instruction | German |

## Module Objective

To demonstrate an ability to tackle and resolve, unassistedly, a large-scale issue of relevance to engineering science. The primary focus is placed on the creative development of new processes and methods, whereby the comprehensive system concept must play an essential part.

**Students will achieve the following learning objectives:**

**Professional competence**
Students acquire the ability to immerse themselves in tasks of a scientific and technical nature and analyse and resolve problems on their own. They are able to tackle and solve even major tasks by working in conjunction with cross-functional departments.

**Methodological skills**
Using their scientific knowledge, students acquire the ability to tackle and resolve, unassistedly, a large-scale issue of relevance to engineering science.

**Soft skills**
Students are able to tackle, independently and in application of self-discipline, a definable (sub-)project of practical relevance to engineering science from a scientific and methodological perspective. They are furthermore able to present their outcomes in writing by independently compiling a scientific paper.

## Applicability in this and other Programs

For this degree program: Compulsory subject within Master Applied Research in Engineering Sciences

For other degree program: None

## Entrance Requirements

The groundwork for meeting the requirements to write the master?s thesis is laid in Project Assignments 1 and 2

## Learning Content

- The Master's thesis topic is assigned and supervised by a professor from one of the institutes of higher education involved, who will also provide guidance on its content.
- The topic should build on the content of the first two project assignments.
- Whilst the Master's thesis should refer to the first two project reports, its content and structure should represent an independently written piece of work that is discernible in and of itself.
- The Master's thesis is to include:
  - An outline of the latest developments in science and engineering in respect of the topic being examined.
  - A description of the methods employed as well as the theoretical and experimental approach adopted by the student.
  - Inclusion of the students own works into the work of the supervising institutes/faculties as well as any industry partners involved
  - A report on the students own publications
  - The factual findings and an evaluation thereof

## Teaching Methods

Master-Thesis, depending on the project also in cooperation with industrial companies

In-depth discussion of the task and the solution with the supervisors (at the university and, if applicable, cooperation partners in the company)

Exposure to corresponding software

## Remarks

Workload:

- Preparation/drafting of concept
- Decision on the most favourable solution to the problem
- Creation of test set-ups and programs
- Implementation of measurements and test runs, including their evaluation
- Drafting/preparation of documentation
- Preparatory reading

## Recommended Literature

Subject-related literature based on the assigned task


- Lück, Wolfgang: Technik des wissenschaftlichen Arbeitens, 10. Auflage, De Gruyter Oldenbourg Verlag, 2008.
- Eco, Umberto: Wie man eine wissenschaftliche Abschlussarbeit schreibt; 13. Auflage; UTB Verlag; Wien; 2010.
- Scheld, Guido: Anleitung zur Anfertigung von Praktikums-, Seminar- und Diplomarbeiten sowie Bachelor- und Masterarbeiten; 7. Auflage; Fachbibliothek Verlag; Büren; 2008.
- Standop, Ewald; Meyer, Matthias: Die Form der wissenschaftlichen Arbeit; 18. Auflage; Quelle & Meyer; Wiebelsheim; 2008.
- Rossig, Wolfram; Prätsch, Joachim: Wissenschaftliche Arbeiten: Leitfaden für Haus- und Seminararbeiten, Bachelor- und Masterthesis, Diplom- und Magisterarbeiten, Dissertationen; 7. Auflage; teamdruck Weyhe; 2008.

## 5.2 MASTER'S SEMINAR

| | |
|---|---|
| Module code | 5.2 |
| Module coordination | Prof. Dr. Werner Bogner |
| Course number and name | 5.2 |
| Lecturer | Prof. Dr. Markus Straßberger |
| Semester | 3 |
| Duration of the module | 1 semester |
| Module frequency | each semester |
| Course type | required course |
| Level | postgraduate |
| Semester periods per week (SWS) | 2 |
| ECTS | 2 |
| Workload | Time of attendance: 30 hours<br>self-study: 30 hours<br>Total: 60 hours |
| Type of Examination | oral examination |
| Weighting of the grade | 2/90 |
| Language of Instruction | English |

# Module Objective

A professional delivery of scientific and technical findings, to be held as presentations, is integral to the successful completion of projects. This includes presenting results achieved in groups and presenting complex linkages within a tight time frame. A further aim is to draw a close correlation between the written project assignment and the presentations held during the seminars.

**Students will achieve the following learning objectives:**

**Professional skills**

Students are able to present, in English, at times difficult technical and scientific interdependencies outlined in their Master?s Thesis before an expert audience in the shape of an oral presentation and provide adequately long responses to questions concerning their presentation.

**Methodological skills**

Students can intelligibly convey the nature and content of the findings from their Master?s Thesis to an expert audience and present them within a defined time frame.

**Soft skills**

Students are able to outline the outcomes in a presentation. The scenario of holding a presentation before an expert audience serves as a precursor to numerous similar situations students will encounter during their careers, especially with regard to time constraints and focusing on core messages; as such, this seminar prepares them for similar work-related situations.

## Applicability in this and other Programs

For this degree program: Compulsory subject within Master Applied Research in Engineering Sciences

For other degree program: None

## Entrance Requirements

Theoretical and practical skills in presenting scientific findings derived from lectures during their pre-studies (e.g. practical seminar, Bachelor seminar)

## Learning Content

- The outcomes of the master?s thesis are outlined in oral presentations and subsequently discussed during accompanying seminars. Students are thus also consciously trained in presenting their findings and outcomes to experts from adjacent specialist fields within a defined short timeframe.
- The length and type of presentation as well as the language used (English where applicable) and any additional accompanying documents (handouts) that may be involved are all determined in mutual agreement with the supervisor.
- The presentations are collectively discussed in student groups with the supervisor present. Where possible and feasible, guests from participating companies and from institutes of higher education should also generally be invited.

## Teaching Methods

Seminar

## Remarks

Workload: 48 hours Preparation and elaboration; 4 hours compilation of accompanying materials; 8 hours attendance of seminars = 60 hours