

Public Announcement

“Amtliche Bekanntmachung der Fachhochschule Südwestfalen

- Verkündungsblatt

der Fachhochschule Südwestfalen” - of the
South Westphalia University of Applied
Sciences

Baarstraße 6, 58636 Iserlohn

No. 1255

Issue and Day of Publication:

15 November 2023

**Examination Regulations for the Master’s Degree Course
Advanced Engineering and Engineering Management
at the South Westphalia University of Applied Sciences, Soest Campus**

as of 15 November 2023

The wording is published as follows:

Note:

After the expiry of one year after the publication of these regulations, violations of procedural or formal requirements of the Higher Education Act or of the university's regulations or other law may only be invoked in accordance with the requirements of § 12 paragraph 5 of the Higher Education Act of North Rhine-Westphalia, otherwise such a complaint is excluded.

Examination Regulations

for the Master's Course

Advanced Engineering and Engineering Management

at the South Westphalia University of

Applied Sciences, Soest Campus

as of

15 November 2023

In accordance with § 2 (4) and § 64 (1) of the Law governing the universities of the federal state of North Rhine-Westphalia (Higher Education Act) of 16 September 2014 (GV.NRW.P.547), as amended by Law of 29 August 2023 (GV.NRW.P.1072) and in accordance with § 1 (1) of the General Examination Regulations for Bachelor's and Master's Programmes at the South Westphalia University of Applied Sciences, the Faculty Council of the Faculty of Electrical Engineering of the South Westphalia University has issued the following Examination Regulations:

Table of Contents

Part 1: General Regulations

- § 1 Applicability
- § 2 Objective of the Degree Course, Academic Degree
- § 3 Specific Prerequisites
- § 4 Begin, Duration, Structure, and Scope of Study
- § 5 Examination Board
- § 6 Resitting Examinations

Part 2: Module Examinations and Academic Performances

- § 7 Scope and Type of Module Examinations
- § 8 Admission to Module Examinations
- § 9 Written Examinations
- § 10 Multiple-Choice Examinations
- § 11 Oral Examinations
- § 12 Seminar Papers
- § 13 Project Assignments
- § 14 Combined Form of Examinations
- § 15 Portfolio
- § 16 Partial Examinations during the Semester

Part 3: Studies

- § 17 Scope and Content of the Final Thesis
- § 18 Admission to the Final Thesis
- § 19 Conduct and Assessment of the Final Thesis
- § 20 Colloquium

Part 4: Assessment of the Final Thesis, Double Degree

- § 21 Certificate
- § 22 Double Degree

Part 5: Final Provisions

- § 23 Coming into Effect, Transitional Provision, Publication

Enclosure 1: Modules in the Fields of Study

Enclosure 2: Examination Elements of the Master's Project and their Weighting

Part 1 General Regulations

§ 1 Applicability

The Examination Regulations for the Master's course Advanced Engineering and Engineering Management at the Faculty of Electrical Engineering (Soest campus) apply in combination with the General Examination Regulations of the South Westphalia University of Applied Sciences in the currently valid version.

§ 2 Objective of the Degree Course, Academic Degree

- (1) The objective of the Master's degree course is to extend and deepen the skills acquired in engineering degree courses. Graduates of the consecutive Master's degree course Advanced Engineering and Engineering Management will be able to independently analyse problems in electrical engineering, mechanical engineering or mechatronics and to develop scientific methods to describe and solve them. Therefore, an interdisciplinary approach to the development of complex technical systems and products based on the system concept as well as extensive knowledge of the economic dimensions of development activities is essential. The research-oriented degree course focuses on theory-related specialised seminars and in-depth courses that build on the previous content and impart the ability to carry out independent academic work. In addition to expertise, the programme aims to promote social skills, the ability to cooperate, communicate and work in a team as well as entrepreneurial thinking and prepare students for an international work area.
- (2) Upon successful completion of the Master's examination in accordance with § 2 of the General Examination Regulations, the South Westphalia University of Applied Sciences awards the academic degree "Master of Science", or "M.Sc." for short, in the degree course Advanced Engineering and Engineering Management.

§ 3 Specific Prerequisites

- (1) In addition to the general admission prerequisites in accordance with § 3 of the General Examination Regulations, proof of academic aptitude for the consecutive Master's degree course in Advanced Engineering and Engineering Management must be proven as follows:
 - a) by successful completion of a Bachelor's degree course with an overall grade of at least "good" (2.5) or with a classification according to the ECTS grading table within the best 35 percent of graduates of a minimum two-year graduation period in a seven-semester Bachelor's degree course or a Diploma degree course in the field of electrical engineering, mechanical engineering or mechatronics or a comparable degree course with predominantly engineering, computer science or software engineering content, or
 - b) by successful completion of a Bachelor's degree course with an overall grade of at least "good" (2.5) or with a classification according to the ECTS grading table within the best 35 percent of graduates of a minimum two-year graduation period in a six-semester Bachelor's degree course with a subject-specific focus in accordance with § 3 (1) (a) and a one-semester supplementary qualification in which 30 ECTS points have to be acquired from the Bachelor's degree courses at Soest campus.

The specific modules are determined by the Examination Board. When the obligation is not fulfilled within one year, the enrolment will be revoked.

- (2) In addition to the general admission prerequisites in accordance with § 3 of the General Examination Regulations, applicants shall prove their language qualifications as follows:
 - a) The applicant has passed a TOEFL-test with a score of at least 575 points paper-based or 232 points computer-based, or 91 points Internet-based; or
 - b) the applicant has passed an IELTS-test with a band of at least 6.5.

Applicants who have successfully completed a Bachelor's degree course entirely in English at a German university are not required to provide proof. Furthermore, applicants who have obtained their general or subject-restricted higher education entrance qualification in Australia, Canada, Ireland, New Zealand, the United Kingdom or the United States are not required to provide proof.

- (3) If proof of English language proficiency cannot be provided in accordance with § 3 (2), the applicant may, upon request, be invited to a combined oral and written examination in which English language proficiency is tested. Students are invited to the examination in writing with at least one week's notice. The examination is conducted and assessed by two examiners from the Faculty of Electrical Engineering. The examiners are appointed by the Chairperson of the Examination Board. The examination takes up to 120 minutes. The applicant shall be informed of the result of the combined examination in writing. In the case of not passing the examination, a written notification must also be issued stating the reasons and providing information on legal remedies. In the case of not passing the examination, it is possible to reapply at a later date. Applicants have no right to be re-examined before the deadline in the respective application period. A third application is excluded.

§ 4

Begin, Duration, Structure, and Scope of Study

- (1) The degree course begins in the winter and summer semester.
- (2) Standard period of study is three semesters.
- (3) All courses and examinations are conducted in English.
- (4) The programme comprises a total of 90 credits. One credit equates to 30 hours of student work.
- (5) Students can choose between three different fields of study:
 - a) Field of study Electronic Systems,
 - b) Field of study Mechanical Systems or
 - c) Field of study Mechatronic Systems.

The first application for admission to a compulsory module in a field of study in accordance with Enclosure 1 is binding for the chosen field of study.

- (6) The field of study can be switched once upon request without giving reasons or if a

compulsory module in the chosen field of study is finally failed. For this purpose, a written application must be submitted to the Examination Board.

- (7) The compulsory modules, which are mandatory for all students depending on their chosen field of study in accordance with § 4 (4) of the General Examination Regulations, can be found in Enclosure 1. Further information on the structure of the degree course and details on the type, scope, content and examination forms of the modules can be found in the enclosures, the curriculum and the module handbook.

§ 5 Examination Board

Referring to § 6 (3) of the General Examination Regulations, the election of the chairperson and the deputy of the Examination Board shall be conducted by the Faculty Council, and not by the Examination Board.

§ 6 Resitting Examinations

- (1) In deviation from § 10 (1) of the General Examination Regulations, all module examinations relating to the Master's degree course Advanced Engineering and Engineering Management can only be repeated once.
- (2) Resit examinations must be taken on the next examination date offered. This period is extended upon application
- a) by three semesters per child for the care and education of minor children within the meaning of § 25 (5) of the Federal Education and Training Assistance Act,
 - b) by a maximum of four semesters in total for participation as an elected representative in university bodies, the student body, the student representatives of the student body or the student unions,
 - c) by a maximum of four semesters for holding the position of Equal Opportunities Officer,
 - d) by the period of study extension due to a disability or serious illness,
 - e) by up to three semesters for the time during which students are responsible for close relatives in need of care or support.

The Examination Board shall decide upon the application.

If the deadline for the resit examination is missed, the right to take the examination expires, unless the person being examined is not responsible for the failure in accordance with § 12 (2) of the Examination Regulations.

Part 2:
Module Examinations and Academic Performances

§ 7
Scope and Type of Module Examinations

In addition to the forms of module examinations listed in §13 (1) in the General Examination Regulations, those can also be conducted as a portfolio (§ 15) or in the form of partial examinations during the semester (§ 16).

§ 8
Admission to Module Examinations

- (1) The application deadlines for admission to the module examinations in accordance with § 14 (2) of the General Examination Regulations shall be determined by the Examination Board.
- (2) In case of a withdrawal of the request for admission to a module examination in accordance with § 14 (5) of the General Examination Regulations, the following deadlines apply:
 - a) The deadline for module examinations in the form of a written examination, a multiple-choice examination, an electronic examination (e-Exam) or an oral examination is one week before the examination date.
 - b) For module examinations in the form of a seminar paper, a combined form of examinations, a portfolio examination or in the form of partial examinations during the semester, this period expires two weeks after the application period for admission ended. Applications for admission to module examinations in the form of a project assignment can be withdrawn two weeks after the registration.

§ 9
Written Examinations

In accordance with § 17 of the General Examination Regulations, written examinations will last between 60 and 120 minutes.

§ 10
Multiple-Choice Examinations

In accordance with § 18 of the General Examination Regulations, multiple-choice examinations will last between 60 and 120 minutes. The exact duration of the examination will be announced by the examiner in text form during the first class/lecture.

§ 11
Oral Examinations

- (1) In accordance with § 20 of the General Examination Regulations, oral examinations will last between 30 and 45 minutes.
- (2) The oral examination may be conducted in the form of a video conference in consent with

all persons involved in the examination. If both examiners are connected to the student via video conference, there shall be present a competent assessor with the student.

§ 12 Seminar Papers

- (1) In accordance with § 21 of the General Examination Regulations, a seminar paper comprises 30 to 50 pages (excluding figures and tables). The examiner will provide further details in text form at the latest when the topic of the seminar paper is issued.
- (2) The presentation which may amend a seminar paper will last at most 45 minutes. The module handbook issues in which modules such a presentation is necessary. The weighting of the seminar paper and presentation for the calculation of the grade for the module examination is determined in text form by the lecturer at the beginning of the course.

§ 13 Project Assignments

- (1) In accordance with § 23 (1) of the General Examination Regulations, project assignments comprise 4 to 20 pages per ECTS point. The presentation which may amend a project assignment will last at most 45 minutes. The module handbook issues in which modules such a presentation is necessary. The weighting of the project assignment and presentation for the calculation of the grade for the module examination is determined in text form by the lecturer at the latest by the time the project assignment is published.
- (2) The lecturer decides on the processing time in accordance with § 23 (5) of the General Examination Regulations, as well as the type, scope and execution of the project assignment pursuant to Section 1.

§ 14 Combined Form of Examinations

The lecturer will determine in text form at the beginning of the course which form of examination will be selected in addition to the seminar paper in accordance with § 22 (1) of the General Examination Regulations. This also includes the weighting of the two elements of the combined examination when calculating the grade for the module examination. Both elements must be successfully passed in order to pass the module examination.

§ 15 Portfolio

- (1) A portfolio is an autonomous documentation and reflection of the learning process, which can contain both written and oral parts. The portfolio comprises individual components, e.g. audit trails, presentations, case studies, constructive drafts or drawings. The individual components are restricted to up to five elements. The total length of the written elements usually comprises 30 to 50 pages of 30 lines each (excluding figures and tables). The total duration of the oral elements is 30 to 120 minutes.
- (2) The binding compilation, scope and assessment criteria in accordance with the variants of the portfolio specified in the module description are announced by the examiner in text form in the first class/lecture. This also applies to the weighting of the individual elements of the

portfolio for the calculation of the overall grade for the module. All individual elements must be successfully passed in order to pass the module examination.

- (3) A portfolio may be approved in the form of a group work, if the part which is to be assessed, according to its length, number of pages, or other objective criteria allows a clear distinction and well-defined assessment of each student's individual contribution and if the requirements according to Section 1 are fulfilled for each student.
- (4) The completion time (time from issue until submission of the composition) shall be adapted to the length of the module and shall not exceed one semester.

§ 16

Partial Examinations during the Semester

- (1) A module examination can be divided into up to four partial examinations in suitable modules. These partial examinations are carried out as written examinations, multiple-choice examinations, electronic examinations, oral examinations or seminar papers during the semester.
- (2) The total duration of all written partial examinations is at least 60 minutes and maximum 120 minutes per candidate. The total length of all partial examinations in the form of written assignments usually comprises 30 to 50 pages of 30 lines each (excluding figures and tables). The total duration of the oral elements is maximum 120 minutes.
- (3) The binding allocation, type and scope of the partial examinations will be announced by the examiner in text form during the first class/lecture. This also applies to the weighting of the individual partial examinations for the calculation of the overall grade for the module. All individual partial examinations must be successfully passed in order to pass the module examination.
- (4) Furthermore, the provisions of §§ 17 (1) to (3), 18, 19, 20 and 21 of the General Examination Regulations apply accordingly.

Part 3 Studies

§ 17

Scope and Content of the Final Thesis

- (1) The final thesis in this degree course is conducted as a Master's project in accordance with Enclosure 2. The Master's project is a scientific paper that must be completed independently by the candidate within a specified period of time. Through application-oriented research or development, concepts or complex application systems are to be developed or to further developed. It is usually completed after the second semester.
- (2) The scope of the Master's thesis, which is part of the Master's project, is usually 60 pages in accordance with § 28 (1) of the General Examination Regulations. The processing time (period from issue to submission of the Master's project) is a minimum of 16 and a maximum of 26 weeks. The Examination Board may extend the processing time to a maximum of 30 weeks upon request in justified cases. In exceptional cases, the Examination Board may grant a four-week extension to the processing time if the candidate submits a justified request before the deadline has expired. The examiner should be

consulted regarding the request.

§ 18

Admission to the Final Thesis

- (1) In accordance with § 29 (1) of the General Examination Regulations, only those students who have obtained at least 50 credits in the module examinations in accordance with Enclosure 1 may be admitted to the Master's project.
- (2) If module examinations could not be completed for a valid reason and the module examinations concerned are not offered in the following semester, admission is possible with 42 credits obtained. For this purpose, a written application must be submitted to the Examination Board. The application must be accompanied by the reasons and the relevant documentation. The supervisor should be consulted on the application.

§ 19

Conduct and Assessment of the Final Thesis

- (1) In accordance with § 30 (2) of the General Examination Regulations, the topic of the Master's project may be rejected within the first four weeks of the processing time without stating reasons. § 30 (2) of the General Examination Regulations applies accordingly.
- (2) In deviation from § 30 (4) of the General Examination Regulations, the Master's thesis belonging to the Master's project must be written in English.
- (3) In addition to § 30 (5) of the General Examination Regulations, the supervisor of the Master's project must be a professor at the Faculty of Electrical Engineering or the Faculty of Mechanical Engineering and Automation at Soest campus of the South Westphalia University of Applied Sciences. The Examination Board decides upon exceptions to this provision. The Examination Board appoints a further university lecturer as a second examiner.
- (4) In accordance with § 30 (7) of the General Examination Regulations, 25 credits are acquired by passing the Master's project.

§ 20

Colloquium

- (1) In addition to § 31 (2) of the General Examination Regulations, only those students who have obtained at least 60 credits in the module examinations of the chosen field of study in accordance with Enclosure 1 may be admitted to the colloquium.
- (2) In accordance with § 31 (5) of the General Examination Regulations, the colloquium is conducted as an oral examination with a duration of 30 to 45 minutes.
- (3) Referring to § 31 (6) of the General Examination Regulations, passing the colloquium will be awarded with five credits.
- (4) The colloquium may be conducted in the form of a video conference with the consent of the examiners. If both examiners are connected to the student via video conference, there shall be present a competent assessor with the student.

Part 4:
Assessment of the Final Thesis, Double Degree

§ 21
Certificate

In addition to § 33 (1) of the General Examination Regulations, the chosen field of study is also indicated on the certificate.

§ 22
Double Degree

In accordance with § 35 of the General Examination Regulations, a Master's certificate is issued in the context of cooperation with other universities if

- a) all subjects required to obtain the corresponding degree at the partner university have been completed,
- b) at least 30 credits have been acquired in the modules of the degree course in Soest.

Part 5 Final Provisions

§ 23 Coming into Effect, Transitional Provision, Publication

- (1) These Examination Regulations shall come into effect on the day after its publication. They are published in the Public Announcement "Amtliche Bekanntmachung der Fachhochschule Südwestfalen - Verkündungsblatt der Fachhochschule Südwestfalen" - of the South Westphalia University of Applied Sciences.
- (2) The provisions of these Examination Regulations apply for the first time for those students who are enrolled in winter semester 2024/2025 in the first subject-related semester in the degree course Advanced Engineering and Engineering Management.
- (3) With reference to § 1 (3) of the General Examination Regulations, the following additional growth regulation applies to the degree course:

Module	First offered	Module examination at the end of the
Intelligent Systems	Winter Semester 2024/2025	Winter Semester 2024/2025
Systems Engineering	Summer Semester 2025	Summer Semester 2025

- (4) Students of the former Master's degree course Systems Engineering and Engineering Management who started their studies before these Examination Regulations came into effect will continue to be subject to the Master's Examination Regulations of 24 June 2016 until the end of the winter semester 2027/2028 with the following provision:

The respective examinations of the first and second semesters in accordance with Enclosure 1 of the Examination Regulations of 24 June 2016 can be taken for the last time in the examination period of the winter semester 2026/2027. The Master's examination in accordance with the Examination Regulations of 24 June 2016 must be completed by 29 February 2028.

Students may apply to continue their studies in accordance with these Examination Regulations dated 15 November 2023. This application is irrevocable. The Examination Board decides upon the approval of the application.

These Examination Regulations are issued after review by the Rectorate of the South Westphalia University of Applied Sciences based upon the decision of the Faculty Council of the Faculty of Electrical Engineering dated 13 November 2023.

Iserlohn, 15 November 2023

The Rector of the South Westphalia University of Applied Sciences



Professor Dr. Claus Schuster

Enclosure 1: Modules in the Fields of Study

For students starting in the winter semester

Sem.	Compulsory Modules all fields of study	Compulsory Modules Field of study Electronic Systems	Compulsory Modules Field of study Mechanical Systems	Compulsory Modules Field of study Mechatronic Systems	Credits
1	---	Signal Processing	Advanced Production Engineering	Advanced Production Engineering	8
1	Business in Engineering				7
1	Intelligent Systems				8
1	Technical Publications and Presentations				7
2	International Project Management				7
2	---	Microprocessor Based Systems	Modelling and Simulation of Mechanical Systems	Microprocessor Based Systems	8
2	Advanced Control Technology				8
2	Systems Engineering				7
3	Master's project				25
3	Colloquium for the Master's project				5
	Total				90

For students starting in the summer semester

Sem.	Compulsory Modules all fields of study	Compulsory Modules Field of study Electronic Systems	Compulsory Modules Field of study Mechanical Systems	Compulsory Modules Field of study Mechatronic Systems	Credits
1	International Project Management				7
1	---	Microprocessor Based Systems	Modelling and Simulation of Mechanical Systems	Microprocessor Based Systems	8
1	Advanced Control Technology				8
1	Systems Engineering				7
2	---	Signal Processing	Advanced Production Engineering	Advanced Production Engineering	8
2	Business in Engineering				7
2	Intelligent Systems				8
2	Technical Publications and Presentations				7
3	Master's project				25
3	Colloquium for the Master's project				5
	Total				90

Enclosure 2: Examination Elements of the Master's Project and their Weighting

1. Master's project

The overall assessment of the Master's project is composed of the following examination elements:

1. Project plan, seminar and interim report (15%)

The project plan contains the planning of the overall project (objectives, background, solution approaches, work packages, resource planning, etc.). It must be prepared at the beginning of the project. The interim report should be prepared approximately half way through the project. The current project status must be presented and evaluated on the basis of the original project plan. The project planning must be updated on the basis of this analysis. Project objectives, procedures and interim results must be presented in the seminar to the students of the Master's course and the project supervisors.

2. Implementation (10%)

This part of the project evaluation includes the ongoing assessment of the candidate in the context of practical activities. Criteria such as the ability to become acquainted with subject areas, the independent development of solution approaches and their implementation are used.

3. Thesis (75%)

The Master's thesis is the final and comprehensive project report and should correspond to the style of a scientific publication.

2. Colloquium

The content and results of the project must be presented to the two examiners in the form of a presentation followed by a discussion.