

OTTO VON GUERICKE UNIVERSITY MAGDEBURG

**Faculty of Mechanical Engineering**

**Faculty of Process and Systems Engineering**

**Faculty of Electrical Engineering and Information Technology**



Program-Specific Study and Examination Regulations

for the

Bachelor's degree program in

**Engineering Science**

**B-EngSci**

dated

1 March, 2024

This English version is for information purposes only.  
The legally binding version of this document is the German language version.  
All liability for translation errors is excluded.

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Version dated 1 March 2024

On the basis of § 13 para. 1, 67a para 2 and 77 para 2, sentence 5, no. 1 of the Saxony-Anhalt Higher Education Act (HSG LSA) as amended in the announcement dated 1 July, 2021 (Law & Ordinance Gazette LSA 2021 p. 368, 369), Otto von Guericke University Magdeburg has enacted the following program-specific statute, which supports the General Study and Examination Regulations (aSPO) for the Bachelor's study programs offered by the faculties participating in the Engineering Campus at Otto von Guericke University Magdeburg.

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# I. General Section

## § 1

### Scope

(3) AD: These binding program-specific Study & Examination Regulations for the English-language Bachelor's study program in Engineering Science supplement (S) and/or provide additional detail (AD) to the applicable versions of the General Study and Examination Regulations (GSER) for the Bachelor's degree programs offered by the faculties participating in the Engineering Campus of Otto von Guericke University Magdeburg as follows:

(4) S: The Bachelor's study program in Engineering Science is a joint program offered by the Faculty of Mechanical Engineering, the Faculty of Process & Systems Engineering and the Faculty of Electrical Engineering and Information Technology. The enrolling faculty is the Faculty of Mechanical Engineering.

## § 2

### Program-specific educational objectives

(3) AD: Engineers who are able to think in an interdisciplinary fashion with a broad methodological basic scientific education in the traditional technical fields of engineering help guarantee a progressive and sustainably designed society. Demand for them is increasing worldwide. The Bachelor's degree program in Engineering Science is oriented towards methods and principles and introduces the students to the multifaceted spectrum and diverse range of engineering jobs, in the process addressing the focal areas of mechanical engineering, process and systems engineering and electrical engineering and information technology. By introducing them to a broad range of engineering fundamentals, students are trained to understand and link the different engineering disciplines and to independently work on theoretical and application-related problems in a solution-oriented and interdisciplinary manner using the knowledge and skills they have acquired to develop new creative solutions for current and future challenges and to tap into cross-interface synergies.

(5) S: The possible areas of employment and activity for graduates are extremely varied. Depending on the chosen field of specialization, they cover the mechanical and plant engineering, process engineering and electrical engineering and information technology sectors, with the tasks of development, calculation, planning and manufacturing as well as the surveying and maintenance of relevant products and systems.

Graduates are needed in all traditional and innovative industrial sectors. There are excellent employment prospects in all areas of mechanical, plant, automobile and vehicle construction, in the chemical and pharmaceutical industries, the feed, foodstuffs and luxury food industries, materials engineering, building services engineering, heating and cooling technology, medical technology, in all areas of electrical engineering, energy engineering and electronics, as well as in the IT and telecommunications sectors.

(6) S: In addition to the general objectives that are to be met in an engineering degree, graduates should also acquire the skills to familiarize themselves with a wide variety of tasks, identify, analyze and solve problems, and become aware of a technically-oriented, responsibility-conscious way of working. The objective is to develop the specialist and methodological skills that facilitate an holistic consideration of technical contexts based on in-depth, fundamental knowledge.

Individual objectives can be defined in line with the chosen area of specialization. The following subject areas are offered as areas of specialization within the Bachelor's program:

- Mechanical Engineering
- Process and Systems Engineering
- Electrical Engineering and Information Technology

(7) S: During their studies, students gain the social skills that enable them:

- to communicate about content and problems of engineering and related disciplines with experts,
- to execute projects,
- to work individually and as integrated members of international groups,
- to take on leadership responsibilities and
- to act in a committed, goal-oriented, task-based and ready-to-learn way in various professional fields.

(8) S: Graduates of the program are prepared for professional life due its up-to-date practical relevance, and are aware of their social and ethical responsibility in respect of their own actions.

## **II. Scope and Progression of Program**

### **§ 4**

#### **Admission Requirements**

(5) S: The required evidence of the level of proficiency achieved in the English language is set out in Appendix 2 of these regulations, including for German applicants.

Existing knowledge of the German language at level A1 of the Common European Framework of Reference is advantageous.

### **§ 5**

#### **Commencement and Duration of Studies**

(2) AD: The standard study duration for the Bachelor's degree program in Engineering Science is 6 semesters, including the Bachelor's thesis.

### **§ 6**

#### **Organization and Scope of Studies**

(4) AD: To successfully complete the Bachelor's degree in Engineering Science, a total of 180 credit points must be obtained..

### **§ 7**

#### **Program Structure**

(3) AD: By selecting a specialization and further modules, students of the Bachelor's program in Engineering Science are able to follow their individual inclinations and interests and/or to take into account the specialist requirements of their future area of employment.

A total of 35 CP must be obtained in the compulsory elective area.

For an area of specialization to be included on the Bachelor's certificate (see § 2 para 6 S), the student must successfully complete modules worth a total of 20 CP from the modules available in the respective area of specialization. Fifteen credit points must be obtained in the open compulsory elective area in accordance with the module handbook. The open compulsory elective area can be used to pursue study interests in the same or other areas of specialization or scientific fields, at other - including foreign - universities as well as in industry-related, application-oriented subject areas.

The range of modules can be found in the relevant valid module handbook (MHB).

(7) S: For German native speakers, the German language training scheduled for the first semesters is replaced by training in the English language up to level C1 or by the opportunity to acquire other language skills. Students may make an informal application to the Board of Examiners to request other alternatives.

(8) S: The standard study schedule in Appendix 1 is a recommendation that takes into account the semesters in which the respective compulsory modules are offered and according to which the Bachelor's study program can be completed in the standard duration of 6 semesters. However, the students are free to deviate from these recommendations.

Key: (S) Supplement to the aSPO-Bachelor

(AD) Additional detail to the aSPO-Bachelor

(9) S In view of the internationalization of the world of work and to assist in the acquisition of linguistic and social skills associated with a stay abroad, the faculties of the Engineering Campus recommend and encourage a voluntary study placement at a foreign university. A study placement of this nature may be completed in agreement with the Board of Examiners. The study placement abroad must be prepared well in advance, and originals or certified copies of all documents necessary for decisions regarding recognition, in particular certificates/grade confirmations, must be presented together with detailed module descriptions.

Before taking up a study placement abroad, the students and Board of Examiners must conclude a *Learning Agreement* that may be updated if it is not possible, once the student is in the locality, to study the planned modules. In this case, a *Change to Learning Agreement* must be concluded with the Board of Examiners.

For external module examination and assessment results or study credits to be recognized, a corresponding transcript of records must be submitted.

### **III. Examinations**

#### **§ 11**

#### **Board of Examiners**

(1) AD: A Board of Examiners is established to carry out the tasks assigned by the General and Program-Specific Study and Examination Regulations.

The Board of Examiners consists of seven members. There are five members who are entitled to vote:

- a) Three individuals from the status group pursuant to § 60 sentence 1 no. 1 HSG LSA, with one coming from each of the three participating faculties. A chairperson will be elected from this group. The other individuals will deputize for the chairperson in his or her capacity as the leader of the Board of Examiners.
- b) One individual from the status group pursuant to § 60 sentence 1 no. 2 HSG LSA from one of the participating faculties.
- c) One individual from the status group pursuant to § 60 sentence 1 no. 3 HSG LSA

The members of the Board of Examiners who are entitled to vote are appointed by the Faculty Councils of the participating faculties. In addition, one person from the Examination Office and the course advisors for the program shall also be appointed as further permanent members of the Board without voting rights.

A deputy shall be appointed for each voting member. For the individuals from the status group pursuant to § 60 sentence 1 no. 1 HSG LSA, deputies shall be appointed from the same faculty. The deputies may, however, not take charge of the Board of Examiners.

For individuals belonging to the Board of Examiners from the status group pursuant to § 60 sentence 1 no. 2 HSG LSA, two deputies shall be appointed from the other participating faculties. One deputy shall be appointed for the member from the status group pursuant to § 60 sentence 1 no. 3 HSG LSA.

The Board of Examiners is deemed to be quorate when five voting members from status groups a) to c) or their deputies are present. The Board of Examiners passes resolutions with a simple majority of the members present. Resolutions must be passed by a majority of the members from the status group pursuant to § 60 sentence 1 no. 1 HSG LSA.

## **IV. Bachelor's Thesis**

### **§ 22**

#### **Admission to the Bachelor's Thesis and Issuing of the Topic**

(1) AD: Only students who are enrolled on the Bachelor's degree program in Engineering Science and who have obtained at least 145 CP from the compulsory and compulsory elective areas / area of specialization will be admitted to write their Bachelor's thesis.

### **§ 24**

#### **Colloquium and Assessment of the Module**

(9) S: Fifteen credit points are awarded for the successfully completed Bachelor's thesis and colloquium, of which 12 credit points are allocated to the Bachelor's thesis and 3 credit points to the colloquium.

## **V. Final Provisions**

### **§ 35**

#### **Entry into force**

These program-specific Study and Examination Regulations enter into force on the day after their publication in the Official Announcements of Otto von Guericke University Magdeburg in conjunction with the currently applicable General Study and Examination Regulations of the Bachelor's degree programs offered by the three faculties participating in the Engineering Campus.

Enacted on the basis of the resolutions

of the Faculty Council of the Faculty of Mechanical Engineering dated 6 March, 2024

of the Faculty Council of the Faculty of Process and Systems Engineering dated x March, 2024

of the Faculty Council of the Faculty of Electrical Engineering and Information Technology dated x March, 2024

and of the statement by the Senate of Otto von Guericke University dated 20 March, 2024.

Magdeburg, 25.03.2024

Prof. Dr.-Ing. habil. Dr. hc. Jens Strackeljan

President

of Otto von Guericke University Magdeburg

Appendices:

Appendix 1: Standard study and examination schedule for B-EngSci

Appendix 2: Evidence of proficiency in the English language

## Appendix 1: Standard Study Plan for the Bachelor's Degree Program in Engineering Science

Bachelor Engineering Science	Semester												Σ
	1.		2.		3.		4.		5.		6.		
	CP	PL	CP	PL	CP	PL	CP	PL	CP	PL	CP	PL	
<b>Mathematik und Informatik</b>													25
Mathematics 1E	5	PL											5
Mathematics 2E			5	PL									5
Mathematics 3E					5	PL							5
Mathematics 4E							5	PL					5
Algorithms and Programming	5	PL											5
<b>Naturwissenschaftliche Grundlagen</b>													10
Physics	~		10	PL									10
<b>Ingenieurwissenschaftliche Grundlagen</b>													75
Materials I	5	PL											5
Engineering Design Graphics	5	PL											5
Fundamentals of Machine Elements							5	PL					5
Engineering Mechanics I			5	PL									5
Engineering Mechanics 2/3					5	PL							5
Electrical engineering I	5	PL											5
Electrical engineering II			5	PL									5
Introduction to control engineering									5	PL			5
Measurement methods					5	PL							5
Introduction to systems theory							5	PL					5
Thermodynamics							5	PL					5
Fluid dynamics									5	PL			5
Chemistry	5	PL											5
Fundamentals of Sustainable Process Engineering			5	PL	5	PL							10
<b>Softskills/Integrationsmodule/Projektarbeit</b>													20
Scientific work & Project work							~		10	PL			10
Language certificate in German or other language			~		10								10
<b>Wahlpflichtbereich</b>													
<b>Wahl einer Profilierung</b>													20
<b>PROFILIERUNG MB: Mechanical Engineering</b>													
					5	PL*	5	PL*	5	PL*	5	PL*	20
<b>PROFILIERUNG VST: Process and Systems Engineering</b>													
					5	PL*	5	PL*	5	PL*	5	PL*	20
<b>PROFILIERUNG EIT: Electrical Engineering and Information Technology</b>													
					5	PL*	5	PL*	5	PL*	5	PL*	20
<b>Offener Bereich</b>													15
Modul 1							5	PL*					
Modul 2									5	PL*			
Modul 3											5	PL*	
<b>Bachelorarbeit</b>													15
Bachelorarbeit, Kolloquium, Seminar												15	
<b>Summe CP B-ENG-MB</b>	<b>30</b>		<b>30</b>		<b>35</b>		<b>30</b>		<b>30</b>		<b>25</b>		<b>180</b>
<b>Summe CP B-ENG-VST</b>	<b>30</b>		<b>30</b>		<b>35</b>		<b>30</b>		<b>30</b>		<b>25</b>		<b>180</b>
<b>Summe CP B-ENG-EIT</b>	<b>30</b>		<b>30</b>		<b>35</b>		<b>30</b>		<b>30</b>		<b>25</b>		<b>180</b>

CP - Credit points in accordance with ECTS

AT - Examination/assessment pursuant to §14 (1) of the General Study and Examination Regulations for the Bachelor's study programs offered by the faculties participating in the Engineering Campus at Otto von Guericke University Magdeburg (aSPO Bachelor). More detailed information can be found in the module handbook of the study program.

- \* - in accordance with the selected module
- ~ - module commences in the semester indicated

Appendix 2: Evidence of proficiency in the English language

English language skills may be evidenced in one of the following four ways:

1. Proof of a valid language test listed here with the relevant minimum points score or equivalent:

TOEFL	IELTS	FCE	UNICert	Pearson PTE Academic
ibT 90; pbT 577	6.5	or higher	II or higher	68

2. Evidence of an International Baccalaureate or a Certificate of Education Advanced Level (A-Level) obtained in the English language.
3. Attendance at a secondary or tertiary education institution (e.g., college, high school, university) in an English-speaking country for at least nine months, evidence for which must be provided by an official transcript of records or certificate of completion. The following countries are recognized as English-speaking: Antigua & Barbuda, Australia, Bahamas, Barbados, Belize, Grenada, Great Britain (incl. overseas territories), Guyana, Ireland, Jamaica, Canada, New Zealand, St. Kitts & Nevis, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, USA (incl. external territories).
4. Applicants who have obtained a domestic higher education entrance qualification: average grade in English of at least 10 points. The average grade will be calculated from the arithmetic average of the most recent four half-yearly assessments. If, in addition, a final examination in the subject of English has been taken, then the arithmetic average will be calculated from the most recent four half-yearly assessments and the final examination.