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Study and Examination Regulations for the Bachelor's Program in Electrical Engineering for Sustainable and Renewable Energy at Coburg University of Applied Sciences (SPO B ESR)

as of 24.03.2025

Pursuant to Articles 9 (Sentences 1 and 2), 80 (Paragraph 1), 84 (Paragraph 2) and 96 of the Bavarian Higher Education Innovation Act (BayHIG) dated 5. August 2022 (GVBl. 2022, S. 414, BayRS 2210-1-3-WK), Coburg University of Applied Sciences hereby issues the following regulations:

§ 1
Purpose of the Study and Examination Regulations

[1]This study and examination regulation governs the bachelor's program in Electrical Engineering for Sustainable and Renewable Energy at the Coburg University of Applied Sciences (Hochschule Coburg). [2]They serve to implement and supplement the Bavarian Higher Education Innovation Act (BayHIG) as of August 5, 2022 (BayRS 2210-1-3-WK) in its currently applicable version and the General Examination Regulations of the University of Coburg (APO) as of June 22, 2023 (Official Gazette 2023) in its currently applicable version.

§ 2
Study Objective

[1]The bachelor's program in Electrical Engineering for Sustainable and Renewable Energy leads to a first academic degree that qualifies graduates for professional employment in the highly sought-after fields of energy technology and renewable energy. [2]Graduates are equipped with a broad foundation and practical skills in electrical engineering and possess in-depth knowledge of the tasks and methods of energy technology and renewable energy. [3]They can classify subject-specific topics appropriately and analyze problems using field-specific methods. [4]As a defining feature of the program, graduates also emerge with knowledge in the natural sciences, business administration, and management-related knowledge. [5]They can apply these skills and areas of knowledge in a solution-oriented manner to the often-interdisciplinary tasks encountered in their professional careers and quickly familiarize themselves with one of the many fields of application. [6]Through targeted teaching and learning formats, graduates have acquired communicative, cooperative, and intercultural competencies [7]They demonstrate a forward-looking professional self-image and a sense of responsibility. [8]For non-German-speaking students, the integrated development of advanced German language skills, alongside content and language integrated learning during the main study phase, facilitates scientific work in German and supports a successful transition into professional careers within German companies. [9]Successful completion of the program particularly qualifies graduates to take on application-oriented technical roles and initial leadership responsibilities, for example in the generation, distribution, conversion, and storage of renewable energy. [10]The degree also qualifies graduates for admission to a master's program.

§ 3
Requirements for Admission

(1) [1]Applicants whose native language is not English must provide proof of English language proficiency at the B2 level according to the Common European Framework of Reference for Languages (CEFR) when applying for the bachelor's program in Electrical Engineering for Sustainable and Renewable Energy. [2]Proof must be submitted in the form of a language certificate recognized by Coburg University of Applied Sciences.

(2) [1]Applicants who are neither German citizens nor persons with equivalent status under § 1 para. 2 sentence 2 of the Hochschulzulassungsverordnung (University Admission Ordinance – HZV) dated 10 February 2020 (GVBl. p. 87, BayRS 2210-8-2-1-1-WK), as most recently amended by the ordinance of 16 August 2023 (GVBl. p. 564), are considered "applicants from third countries." [2]For this group, the number of available places is limited to 25 due to capacity constraints. [3]Applicants from third countries must

provide proof of participation in the “TestAS” aptitude test in the modules “Core Test” and “Engineering Sciences,” with a minimum combined score (sum of both module results) of 90. [4]Based on the total score, country-specific ranking lists are created to ensure the highest possible level of diversity within the program. [5]Each nationality is allocated a proportion of the 25 available places based on the ratio of applications from that nationality to the total number of applications — with a minimum of one place per nationality.

§ 4
Standard Duration and Structure of the Program

(1) [1]The standard duration of the program is eight semesters, consisting of seven theoretical semesters and one internship semester. [2]The program is taught in English during the foundation phase (semesters 1 to 4) and German (supported by English-language materials) during the advanced phase (semesters 5 to 8).

(2) [1]The program is divided into four phases of study. [2]The first phase consists of one theoretical semester (introductory semester). [3]The second phase consists of three theoretical semesters taught in English, along with language modules. [4]The third phase includes two theoretical semesters taught in German, supported with English learning materials, and language modules. [5]The fourth phase consists of one internship semester and a final semester, which includes the completion of a bachelor’s thesis.

§ 5
Modules and Exams, Grading, Overall Exam Grade

(1) [1]The compulsory and elective modules, their number of hours, types of courses, examinations, their weighting in the calculation of the final overall grade and the divisor, as well as the credit points (ECTS), are specified in the annex to these Study and Examination Regulations. [2]These regulations are complemented by the study and examination plan for the modules.

(2) Alongside the final overall grade, a relative grade is assigned according to the ECTS Users’ Guide in its currently applicable version.

§ 6
Advancement authorizations

(1) Admission to the second semester (second study phase) is only permitted for those who have successfully completed the modules Academic English Skills and German Basics 1 (Level A1) in accordance with the annex to these Study and Examination Regulations.

(2) Admission to the fifth semester (third study phase) is only permitted for those who have successfully completed all modules of the first study phase, German Basics 3 (Level B1.1), and at least twelve modules of the second study phase according to the annex to these Study and Examination Regulations.

(3) Admission to the seventh semester (fourth study phase) is only permitted for those who have passed all compulsory modules from the first and second study phases and German (Level B1.2).

(4) Registration for the bachelor's thesis is only permitted for those who have submitted a proper internship report for the “Industrial Internship” and have successfully completed German (Level B2.1).

§ 7
Program-specific Academic Advising

[1]The academic advising service is intended to clarify the structure, options, and procedures of the program, as well as the course offerings, to students. [2]Furthermore, it should inform and advise students on questions regarding their professional orientation and keep them updated on current developments related to their field of work.

§ 8
Internship Semester

(1) [1]The internship semester comprises 20 weeks of full-time practical work, accompanied by two practice-oriented courses. [2]It is considered completed if

1. the completion of the internship phase is confirmed by a certificate from the internship provider in accordance with the template provided by the university,
2. a properly prepared internship report has been approved and
3. the accompanying practice-oriented courses have been successfully completed.

[3]Examinations for the internship semester may be taken outside the regular examination period. [4]The internship report must be written in German, in consultation with the internship coordinator.
(2) [1]The internship semester shall generally be completed in the Federal Republic of Germany. [2]If the internship semester is not conducted in a company or is completed wholly or partly outside the Federal Republic of Germany; the Examination Board may establish special arrangements.

§ 9
Bachelor's Thesis

(1) The degree is completed with a bachelor's thesis.
(2) [1]The bachelor's thesis is intended to demonstrate that the student is capable of independently addressing a research question in the field of energy engineering or renewable energies on a scientific basis. [2]The standard processing time, considering the ongoing semester, is typically four months.

§ 10
Bachelor's Examination Certificate, Academic Degree

[1]Upon successful completion of the program, a bachelor's examination certificate and a diploma confirming the awarded academic degree will be issued according to the respective template in the annex to the Study and Examination Regulations (APO). [2]The bachelor's examination certificate includes all modules completed during the course of study. [3]Based on the successful completion of the Bachelor's examination, the academic degree "Bachelor of Engineering," abbreviated as "(B.Eng.)," is awarded.

§ 11
Entry Into Force

This regulation shall enter into force on October 1, 2025.

Issued based on the decision of the Senate of Coburg University of Applied Sciences dated March 14, 2025, and approved by the President on March 24, 2025.
Coburg, March 24, 2025

gez.
Prof. Dr. Gast
Präsident

This regulation was deposited at Coburg University of Applied Sciences on March 24, 2025. The deposit was announced by public notice on March 24, 2025. The date of publication is March 24, 2025.

Annex: Overview of the modules and exams for the bachelor's program in Electrical Engineering for Sustainable and Renewable Energy

1	2	3	4	5	6	7	8	9
lfd. Nr.	**Courses**			**Exams**				
	Modules	SWS	Type of course [1]	Type of exam [1]	Admission requirements [1]	Scope [1]	Weight [4]	ECTS
First study phase – theoretical semester 1								
1	Introduction to Advanced Mathematics	4	S, SU, Ü	schrP or Pf		90 – 120 Minutes, 10 – 20 Pages	0,5	5
2	Scientific Basics	4	S, SU, Ü	schrP or Pf		90 – 120 Minutes, 10 – 20 Pages	0,5	5
3	Academic English Skills	4	S, SU, Ü	schrP or Pf		30 – 90 Minutes 10 – 20 Pages	0,25	5
4	Soft Skills and Culture	2	SU, Ü	HA or Pf		10 – 20 Pages 10 – 20 Pages	0,25	3
5	German Basics 1 (Level A1)	6	SU, Ü	schrP	[1]	90 Minutes	0,25	5
6	German Basics 2 (Level A2)	12	SU, Ü	schrP	[1]	90 Minutes	0,25	7
Second study phase – theoretical semesters 2, 3, and 4								
7	Mathematics 1	4	SU, Ü	schrP		90 – 120 Minutes	2	5
8	Mathematics 2	4	SU, Ü	schrP		90 – 120 Minutes	2	5
9	Mathematics 3	4	SU, Ü	schrP		90 – 120 Minutes	2	5
10	Mathematical Applications	4	SU, Ü	prStA		20 - 30 Pages	2	5
11	Lecture Series – Renewable Energy Engineering	4	SU, Ü	schrP		90 – 120 Minutes	2	5
12	AC Technology for Energy Engineering	4	SU, Ü	schrP		90 – 120 Minutes	2	5
13	Measurement Technology	4	SU, Ü, Pr	schrP		90 – 120 Minutes	2	5
14	Fundamentals of Electrical Engineering	4	SU, Ü	schrP		90 – 120 Minutes	2	5
15	Electronic Components and Devices	4	SU, Ü	schrP		90 – 120 Minutes	2	5
16	Fundamentals of Computer Based Measurement Technology	4	SU, Ü, Pr	schrP		90 – 120 Minutes	2	5
17	Programming	4	SU, Ü	schrP		90 – 120 Minutes	2	5
18	Fluid Mechanics	4	SU, Ü	schrP		90 – 120 Minutes	2	5
19	Thermodynamics	4	SU, Ü	schrP		90 – 120 Minutes	2	5
20	Control Systems	4	SU, Ü	schrP		90 – 120 Minutes	2	5
21	Electrical Drives, Power Grids and Safety	4	SU, Ü	schrP, prStA		90 – 120 Minutes, [6]	2	5

22	German Basics 3 (Level B1,1)	4	SU, Ü	schrP	[1]	90 – 120 Minutes	0,5	5
23	Technical German 1 (Level B1,2)	4	SU, Ü	schrP	[1]	90 – 120 Minutes	0,5	5
24	Technical German 2 (Level B2,1)	4	SU, Ü	schrP	[1]	90 – 120 Minutes	0,5	5

Third study phase – theoretical semesters 5 and 6

25	Electrical Energy Distribution	4	SU, Ü, Pr	schrP, prStA	[1]	schrP: 90 – 120 Minutes, [6]	2	5
26	Chemistry for Energy Applications	4	SU, Ü, Pr	schrP, prStA	[1]	schrP: 90 – 120 Minutes, [6]	2	5
27	High Voltage Technology	4	SU, Ü, Pr	schrP, prStA	[1]	schrP: 90 – 120 Minutes, [6]	2	5
28	Power Electronics	4	SU, Ü	schrP, prStA		schrP: 90 – 120 Minutes, [6]	2	5
29	Electrical Drive and Power Converter Technology	4	SU, Ü, Pr	schrP, prStA	[1]	schrP: 90 – 120 Minutes, [6]	2	5
30	Photovoltaics	4	SU, Ü, Pr	schrP, prStA	[1]	schrP: 60 – 90 Minutes, [6]	2	5
31	Electrical Energy Storage Systems	4	SU, Ü, Pr	schrP, prStA	[1]	schrP: 90 – 120 Minutes, [6]	2	5
32	Intelligent Energy Systems	4	SU, Ü, Pr	schrP, prStA	[1]	schrP: 90 – 120 Minutes, [6]	2	5
33	Technical German 3 (Level B2,2)	4	SU, Ü	schrP	[1]	90 – 120 Minutes	0,5	5
34	Introduction in Scientific Writing	4	S, SU, Ü	prStA		[1]	2	5
35	Elective Subject 1	4	S, SU, Ü, Pr	[5]	[5]	[5]	2	5
36	Elective Subject 2	4	S, SU, Ü, Pr	[5]	[5]	[5]	2	5

Fourth study phase – internship semester 7

37	Industrial Internship	(20 Wk)	Pr	HA (Internship report)	[1]	20 – 30 Pages	[3]	25
38	Industrial Internship accompanying Seminar 1	3	S, SU, Ü	mdlP or schrP		15min (mdlP) or 60min	[3]	3
39	Industrial Internship accompanying Seminar 2	2	S, SU, Ü	mdlP or schrP		15min (mdlP) or 60min	[3]	2

Fourth study phase – bachelor's thesis (8)

40	Elective Subject 3	4	S, SU, Ü, Pr	5)	5)	5)	2	5
41	Engineering Project	2)		wBer		10-30 Pages	2	10
42	Bachelor Colloquium			Präs		15-30 Minutes	1	3
43	Bachelor Thesis			BA		50-70 Pages	5	12

Summe	**161**	**66**	**240**

Abbreviations:

BA = Bachelor's thesis
Pr = Internship/Practical course
Präs = Presentation
Pf = Portfolio
wBer = Scientific report
HA = Term paper
prStA = Practical work (i.e. Experiment report, survey, project or lab report)
S = Seminar
SAr = Seminar paper
schrP = Written exam
SU = Seminaristic teaching
SWS = Semester period per week
Ü = Tutorial
ECTS = European Credit Transfer System
mdlP = Oral exam

Footnotes:

1) If various options are listed, detailed determination shall be made by the Faculty Council of the Faculty of Electrical Engineering and Computer Science within the Study and Examination Plan. In doing so, the Faculty Council shall ensure an appropriate variety of examination types.

2) As part of the Engineering Project, supervision is provided by university teaching staff. The scope of supervision amounts to 0.2 semester hours per student.

3) The specified modules are graded as either “pass” or “fail” and therefore do not count towards the final grade calculation.

4) Weighting factor of the respective module exam grades for the overall bachelor’s degree grade.

5) The course offerings shall be determined by the Faculty Council in the study plan at the end of the current semester for the following semester. Three modules of the student’s choice may be selected; the type, scope, and any admission requirements are regulated by the Study and Examination Plan.

6) If multiple examination types are listed, the type and scope of each examination shall be specified in the Study and Examination Plan. The length of the practical work (prStA) report shall be between 5 and 30 pages. In general, each individual examination component is binding for passing. If any component is graded as “fail,” the final grade shall be “fail.” Only the final grade will be recorded on the certificate.