

Note: Only the German version is legally binding, the English translation serves information purposes only!

**Annex to the Study and Examination Regulations for the Bachelor's Degree Programme Energy Systems and Renewable Energies at Technische Hochschule Ingolstadt dated
22.02.2021**

Overview of the modules and credit certificates

1 First study phase (1.-2. semester)

1	2	3	4	5	6	7	8	9	10	11
Current no.	Modules	SWS hrs	Type of course	Examinations			Scope		Weighting for the overall examination mark	ECTS Credit points (ECTS)
				Type	Duration in mins	Admission requirements	written paper	presentation		
1	Engineering Mathematics 1	5	SU/Ü	schrP	120				1	5
2	Engineering Mathematics 2	5	SU/Ü	schrP	120				1	5
3	Computer Science in Engineering	4	SU/Ü/Pr	schrP	90	prA1 ¹⁾			1	5
4	Material Science	4	SU/Ü/Pr	schrP	90				1	5
5	Energy Systems and Energy Economics	5	SU/Ü/Pr	schrP	90	prA1 ¹⁾			1	5
6	Basics of Mechanical Design	4	SU/Ü	schrP	120				1	5
7	Statics	4	SU/Ü	schrP	90				1	5
8	Mechanics of Materials	4	SU/Ü	schrP	90				1	5
9	Thermodynamics 1	4	SU/Ü/Pr	schrP	90				1	5
10	Electrical Engineering	4	SU/Ü	schrP	90				1	5
11	Energy Storage	4	SU/Ü/Pr	schrP	90				1	5
12	Entrepreneurship and Sustainability	5	SU/Ü	StA with coll	15		8-15 pages	15-20 pages	1	5
	Total	52							12	60

2 Second study phase (3.-7. semester)

2.1 Theoretical semester

1 Current no.	2 Modules	3 SWS hrs	4 Type of course	5 Examinations			8 Scope		10 Weighting for the overall examination mark	11 ECTS Credit points (ECTS)
				6 Type	7 Duration in mins	Admission requirements	9 written paper	resentation		
13	Machine Elements	4	SU/U	schrP	90				2	5
14	Thermal Energy Technology and Power Plants	5	SU/Ü/Pr	schrP	90	prA1 ¹⁾			2	5
15	Product Development and CAD	4	SU/Ü/Pr	schrP	90	prA1 ¹⁾			2	5
16	Project Design and Development	4	S/Pr	Proj			5-25 pages		2	5
17	Energy Distribution and CHP Plants	4	SU/Ü/Pr	schrP	90				2	5
18	Smart Grids and Wind Energy	4	SU/Ü/Pr	schrP	90				2	5
19	Solar Energy Technologies	5	SU/Ü/Pr	schrP	90	prA1 ¹⁾			2	5
20	Thermodynamics 2	4	SU/Ü/Pr	schrP	90				2	5
21	Fluid Mechanics	5	SU/Ü/Pr	schrP	90	prA1 ¹⁾			2	5
22	Measurement Engineering	4	SU/Ü/Pr	schrP	90				2	5
23	Control Engineering	5	SU/Ü/Pr	schrP	90				2	5
24	Cost and Investment Management	4	SU/Ü	schrP	90				2	5
25	Project	4	S/Pr	Proj			5-25 pages		2	5
26	Elective Modules ²⁾	12	SU/Ü/Pr	LN					6	15
27	Building Energy Technology and Smart Homes	4	SU/Ü/Pr	schrP	90				2	5
28	Energy Markets and Coupling Sectors	5	SU/Ü/Pr	schrP	90				2	5
29	Mobility within the Energy System	4	SU/Ü/Pr	SA			8-15 pages	15-20 pages	2	5
30	Energy from Biomass and Biogenic Residues	5	SU/Ü/Pr	schrP	90				2	5
31	Solar Buildings and Energy Consulting	4	SU/Ü/Pr	mdIP	15				2	5
32	Bachelor's thesis									
32.1	Bachelor's thesis seminar	2	S	Coll ¹⁾	15					3
32.2	Bachelor's thesis			BA			40-60 pages		3	12
	Total	92							45	120

2.2 Internship semester

1	2	3	4	5	6	7	8	9	10	11
Current no.	Modules	SWS hrs	Type of course	Examinations			Scope		Weighting for the overall examination mark	ECTS Credit points (ECTS)
				Type	Duration in mins	Admission requirements	written paper	presentation		
33	Internship (18 weeks)		Pr	PrB			8-15 pages			24
34	Practical Seminar	2	S	LN						2
35	Project and Quality Management	4	SU/Ü	schrP	90				2	4
	Total	6							2	30

3 Overview

1	2	3	4	5	6	7	8	9	10	11
Current no.	Modules	SWS hrs	Type of course	Examinations			Scope		Weighting for the overall examination mark	ECTS Credit points (ECTS)
				Type	Duration in mins	Admission requirements	written paper	presentation		
1	Theoretical semester in the 1. study phase	52							12	60
2	Theoretical semester in the 2. study phase	92							45	120
3	Internship semester	26							2	30
	Total	150							59	210

- 1) Assessment: "passed" or "failed".
- 2) Subject-related elective compulsory modules are to be covered with modules of 4 SWS hours per week or can be covered by modules of 2 SWS hours per week. If elective compulsory modules with 2 SWS hours are covered, the number of credit certificates to be submitted increases correspondingly. Each individual credit certificate must be passed with at least a sufficient grade for passing the bachelor's examination.

Type of course

S	Seminar
SU	Seminaristic instruction
Ü	Exercise
SU/Ü	Seminaristic instruction with exercises
Pr	Internship

Type of examination

schrP	Written examination	The written examination is a 90-minute written examination unless explicitly stated otherwise.
mdIP	oOal examination	The oral exam is a 15-minute interview per person unless explicitly stated otherwise.
prP	Practical examination	Based on the student's "real actions", the student should demonstrate that he has mastered the practical application of the knowledge that he has acquired. The practical examination is 15 minutes long unless explicitly stated otherwise.
StA	Student research project	This student research project is a research paper without any oral presentation. The research paper comprises at least 3000 to a maximum of 6000 words (written elaboration approx. 8 to 15 pages or presentation paper approx. 15 to 20 pages).
SA	Seminar paper	The seminar paper is a research paper involving no oral presentation. The research paper comprises at least 3000 to a maximum of 6000 words (written elaboration approx. 8 to 15 pages or presentation paper approx. 15 to 20 pages). The oral presentation is 15- 20 minutes long in total and can also be given during the course of the semester.

Proj	Research project	A research project involves group work in which several students work on a common task in a team and present the results orally and in written form. Each student has to contribute individually and give an oral presentation of 15 minutes. The written part is about 5-25 pages per student.
BA	Bachelor's thesis	The Bachelor's thesis is the written final thesis in the Bachelor's degree programme. The time allowance is 3 months. The result is written in the form of a scientific paper. The length of the paper is 40-60 pages.
Coll	Colloquium	The colloquium is an oral examination lasting 10-15 minutes, during which the student defends the results of the paper.
PrB	Internship report	The internship report is a written paper of 8-15 pages. It represents a description of the student's activities in the internship. In addition to a brief introduction to the training company, work processes in which the trainee was involved, special problems and their solution by the trainee as well as project work should be described.
LN	Credit certificates	The certificates can alternatively be a written examination (60-120 minutes), an oral examination (15-45 minutes), a presentation, a study paper, a seminar paper or a project paper. The details are determined by the Faculty Council in the module handbook. Each individual performance record must be passed with at least a sufficient grade.
PrA	Practical work	The practical work relates in each case to the internships to be completed. The practical work consists of 2-7 practical experiments or tasks that have to be carried out independently. The experiments are to be documented (2-5 pages).