

Degree programme overview and plan

Mechanical Engineering (B.Eng.), international,
at the Technische Hochschule Nürnberg Georg Simon Ohm

Version date: 9 April 2024

This document is the English version of the German *Studienplan* for the Mechanical Engineering (B.Eng.), international, programme. It serves the purpose of giving international students the opportunity to read important regulations in the language of the degree programme. Legally binding for all questions of dispute is exclusively the German version.

Valid for students who began the programme on or after 1 October 2024

Basis and purpose of this document

The programme overview for the international Mechanical Engineering Bachelor of Engineering programme (B-MEC) at the Technische Hochschule Nürnberg Georg Simon Ohm (the Ohm) is based on and supplements the B-MEC Study and Examination Regulations (SPO B-MEC) dated 9 April 2024. The programme overview provides additional information about what you will need to do to complete your degree and the regulations that govern the programme. Specifically, it covers:

- the modules and structure of the degree programme,
- the allocation of lecture hours per week (SWS) and credits for each module or sub-module and semester,
- the internship objectives and content and coursework accompanying the practical semester including its form and organisation,
- more detailed information about registering and completing the bachelor's thesis.

This degree programme overview and plan enters into force on 1 October 2024.

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1 First degree component: semesters 1-4

Sem.	#	Module	Credits	SWS		Examination
				SU	Ü	
1	1	Engineering Mathematics I	5	2	2	schrP (90)
1	2	Engineering Mechanics I	5	2	2	schrP (90)
1	3	Physics	5	2	3	schrP (90)
1	4	Materials Science I	5	4		schrP (90)
1	5	Engineering Design I <i>Module grade = 50% schrP and 50% StA</i>	5	4	1	schrP (90) StA
1	6	Language I	5	3	3	schrP (90)
2	7	Engineering Mathematics II	5	2	2	schrP (90)
2	8	Engineering Mechanics II	5	2	2	schrP (90)
2	9	Machine Elements I	5	2	2	schrP (90)
2	10	Computer Science	5	1	2	schrP (90) StA (pass/fail)
2	11	Engineering Design II	5	1	3	StA StA CAD (pass/fail)
2	12	Language II	5	3	3	schrP (90)
3	13	Thermodynamics	5	2	2	schrP (90)
3	14	Engineering Mechanics III	5	2	2	schrP (90)
3	15	Machine Elements II	5	3	2	schrP (90)
3	16	Fluid Mechanics	5	2	2	schrP (90)
3	17	Electrical Engineering	5	2	2	schrP (90)
3	18	Language III	5	3	3	schrP (90)
4	19	Heat Transfer	5	2	2	schrP (90)
4	20	Manufacturing Technology	5	4	0	schrP (90)
4	21	Numerical Methods	5	2	2	schrP (90)
4	22	Materials Science II	5	2	2	schrP (90)
4	23	Control Engineering	5	2	2	schrP (90)
4	24	Language IV	5	3	3	schrP (90)

2 Second degree component: semester 5

Semester 5 is the practical semester (internship and accompanying courses).

Duration and organisation: The supervised internship (*Praktikum*) spans 20 weeks. Interns work the working hours that are typical in the company, five days a week. In the periods between 15 March - 15 July and 1 October - 31 January, students are released from work on Fridays to attend the accompanying courses and the Internship Seminar.

Pre-requisites: To begin the practical semester, students must have completed 90 credits in the first degree component, including 15 credits from the language modules, Language I-IV. The internship must be approved by the Internship Coordinator before the internship begins. More information about organising the practical semester will be provided in the fourth semester.

Internship objectives: Introduction to the professional activity of engineers based on specific problems and tasks.

Internship contents: Multiple areas should be selected from the following fields:

1. Development, project planning, design
2. Production, production preparation and control
3. Installation, commissioning, and maintenance of machines and systems
4. Testing, inspection and approval, production supervision
5. Sales and distribution, consulting

Practical experience and accompanying courses in the practical semester (semester 5)

Sem.	#	Module	Credits	SWS		Examination
				SU	Ü	
5	25	Supervised Internship	22			StA
5		Internship Seminar	1	2		Kol. (pass/fail)
5	26	Research Methods and Scientific Writing	5	2	2	schrP (90)
5	27	Cross-cultural Training *	2	2		schrP (90)
		Employability and Working in Germany *				StA

* Students are required to complete one of these modules.

3 Second degree component: semesters 6 and 7

Sem.	#	Module	Credits	SWS			Examination
				SU	Ü	Lab	
6	28	Numerics of Partial Differential Equations	5	2	2		schrP (90)
6	29	Finite Element Analysis	5	2	2		StA
6	30	Engineering Design III	5	0	4		StA
6	31	Machine Dynamics	5	2	2		schrP (90)
6	32	Mechatronics <i>Module grade = 66% schrP and 33% StA</i>	5	2		2	schrP (60) StA
6	33	Data Science <i>StA is requirement for the exam</i>	5	2	2		schrP (90) StA (pass/fail)

Sem.	#	Module	Credits	SWS	Examination
				S	
7	34	Electives (selected from catalogue)	15		
7	35	Bachelor's Thesis	12		
7	36	Bachelor's Seminar	3	1	

Special provisions relating to the bachelor's thesis:

The bachelor's thesis is an academic paper that is written independently by the student. The topic of the bachelor's thesis can be assigned in the semester subsequent to the practical semester, at the earliest, and in the second semester subsequent to the practical semester, at the latest.

Pre-requisites for registering the bachelor's thesis topic are:

- (1) all 120 credits from the first degree component (semesters 1-4) have been earned and
- (2) the internship during the practical semester was completed.

The period between registering (*Anmeldung*) the topic of the bachelor's thesis and its completion may not exceed 6 months.

4 Programme duration

Pursuant to §79 BayHIG, §29 ASPO, and the SPO of the B-MEC programme the following provision applies:

In order to be awarded the degree, a student must acquire 210 ECTS credits as stipulated in the study and examination regulations by completing all examinations that count towards the final grade point average and the bachelor's thesis with at least the grade "sufficient" and successfully completing a practical semester by the end of the standard programme duration.

If a student does not meet this requirement within two semesters more than the standard programme duration, a grade of "5" due to failure to meet the deadline will be entered for all examinations that have not been attempted at least once (open examinations) by that time.

If this requirement can not be met due to reasons beyond the student's control, an extension must be requested from the examination board as soon the delay is foreseeable.

Abbreviations:

#	Module number	StA	Paper / Project Work
,	and	SU	Seminar-style lecture
CAD	Computer Aided Design	SWS	Lecture hours per week
Credits	Credits (ECTS)	Lab	Laboratory
ECTS	European Credit Transfer System	LV	Course (<i>Lehrveranstaltung</i>)
Kol	Colloquium (oral exam)	TP	Assessment part
S	Seminar	Ü	Exercises
schrP	Written examination	ZV	Pre-requisites

5 Curriculum overview

admission requirements: German language skills: A1; English language skills: B2 for students from outside Europe additionally: TestAS Modules "Core Test" and "Engineering" or SAT							
Semester 1	fixed sequence of study	Engineering Mathematics I (5 ECTS, 4 SWS)	Engineering Mechanics I (5 ECTS, 4 SWS)	Physics (5 ECTS, 5 SWS)	Materials Science I (5 ECTS, 4 SWS)	Engineering Design I (5 ECTS, 5 SWS)	Language I (5 ECTS, 6 SWS)
Semester 2		Engineering Mathematics II (5 ECTS, 4 SWS)	Engineering Mechanics II (5 ECTS, 4 SWS)	Machine Elements I (5 ECTS, 4 SWS)	Computer Science (5 ECTS, 4 SWS)	Engineering Design II (5 ECTS, 4 SWS)	Language II (5 ECTS, 6 SWS)
Semester 3		Thermo-Dynamics (5 ECTS, 4 SWS)	Engineering Mechanics III (5 ECTS, 4 SWS)	Machine Elements II (5 ECTS, 5 SWS)	Fluid Mechanics (5 ECTS, 4 SWS)	Electrical Engineering (5 ECTS, 4 SWS)	Language III (5 ECTS, 6 SWS)
Semester 4		Heat Transfer (5 ECTS, 4 SWS)	Manufacturing Technology (5 ECTS, 4 SWS)	Numerical Methods (5 ECTS, 4 SWS)	Materials Science II (5 ECTS, 4 SWS)	Control Engineering (5 ECTS, 4 SWS)	Language IV (5 ECTS, 6 SWS)
Semester 5	semesters sequence variable	Supervised Internship (22 ECTS) Internship Seminar (1 ECTS) pre-requisite: 15 ECTS in Language I-IV				Research Methods and Scientific Writing (5 ECTS, 4 SWS)	Cross-Cultural Training / Employability and Working in Germany (2 ECTS, 2 SWS)
Semester 6		Numerics of Partial Differential Equations (5 ECTS, 4 SWS)	Finite Element Analysis (5 ECTS, 4 SWS)	Engineering Design III (5 ECTS, 4 SWS)	Machine Dynamics (5 ECTS, 4 SWS)	Mechatronics (5 ECTS, 4 SWS)	Data Science (5 ECTS, 4 SWS)
Semester 7		15 ECTS (3 electives) from catalogue			Bachelor's Thesis and Seminar (15 ECTS)		