

**Bachelor's degree programme:
Technical Management (TEM-B)**

The following study and examination regulations (in German “SPO”) were verified and approved by the Senate at its 454th meeting on 30 April 2025.

Only the German version of this document is legally binding!

Prof. Dr. Ulrich Brecht
Vice-Chancellor for Learning and Teaching

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Bachelor's degree programme in Technical Management (TEM-B)

1 Basics of the programme structure

1.1 Total scope

The total scope of the compulsory and compulsory elective courses required for successful completion of the programme is **126** semester hours per week and leads to the acquisition of **210** ECTS credits.

1.2 Structure of the programme

The compulsory courses required for successful completion of the programme and the associated examinations and preliminary examination requirements are listed in Tables 2.1 and 2.3 and Table 3. The courses are assigned to individual modules, which are awarded ECTS credits.

1.3 Language of instruction

All courses are held in either German or English (§3 (5), SPO AT Bachelor 7sem).

1.4 Basic studies in German or English

Depending on admission, the basic studies must be completed in either German or English.

2 Basic studies

2.1 Basic studies in German

2.1.1 Subjects in German

The courses in the basic study programme are listed in Table 2.1.

Table 2.1: Basic studies in German¹

Semester	Course					Examination		Prerequisite		ECTS
	Module	No	Course title	Type	SWS	Type	Duration	Type	Duration	
1	G1	611010	General Business Administration			LK	90			
		611011	General Business Administration	V/Ü	4	Module examination			5	
	G3	611030	Mathematics 1			LK	90			
		611031	Mathematics 1	V/Ü	4	Module examination			5	
	G6	611060	Computer Science			LA				
		611061	Computer Science	V/Ü	4	Module examination			5	
	G7	611070	Physics			LK	90			
		611071	Physics	V/Ü	4	Module examination			5	
	G8	611080	Materials			LK	90			
		611081	Materials	V/Ü	4	Module examination			5	
	G9	611090	Fundamentals of production					SR		
		611091	Fundamentals of Production	V/Ü	4			Module examination		5
Totals for the first semester					24	5	1	30		

2	G2	611020	Scientific work					SA		
		611021	Scientific Work	V/Ü	2			Module examination		5
	G4	611040	Mathematics 2			LK	90			
		611041	Mathematics 2	V/Ü	4	Module examination			5	
	G5	611050	Applied Statistics			LK	90			
		611051	Applied Statistics	V/Ü	4	Module examination			5	
	G10	611100	Electrical engineering			LK	90			
		611101	Electrical Engineering	V/Ü	4	Module examination			5	
	G11	6	Fundamentals of design and CAD 1			LKBK	12			
		61111	Fundamentals of Design and CAD 1	V/Ü	4	Module examination			5	
	G12	611120	Technical Mechanics			LKBK	90			
		611121	Technical Mechanics	V/Ü	4	Module examination			5	
Total 2nd semester					22	5	1	30		

¹ See https://cdn.hs-heilbronn.de/ff7396326d75e064/21b0725bd705/2014-05-04-SPO-AT-Bachelor_ENGLISCH.pdf page 26 for abbreviations

2.1.2 Module examinations of the German basic studies

The module examinations for the basic study programme are listed in Table 2.2:

Table 2.2: Module examinations for the Bachelor's preliminary examination, Weighting of individual examination results and module grades

Module grades for the basic study programme: Technical Management (TEM)					
Module	No	Module name			Weighting of the module grade for the grade according to § 22
		Examination	No	Prerequisite	
General Business Administration					
G1	611010	General Business Administration			5
	611011	General Business Administration			
Scientific work					
G2	611020	Scientific work			5
	611021	Scientific work			
Mathematics, Statistics and Computer Science					
G3	611030	Mathematics 1			5
	611031	Mathematics 1			
G4	611040	Mathematics 2			5
	611041	Mathematics 2			
G5	611050	Applied Statistics			5
	611051	Applied Statistics			
G6	611060	Computer Science			5
	611061	Computer science			
Natural sciences and technology					
G7	611070	Physics			5
	611071	Physics			
G8	611080	Materials			5
	611081	Materials			
G9	611090	Fundamentals of production			5
	611091	Fundamentals of Production			
G10	611100	Electrical Engineering			5
	611101	Electrical engineering			
G11	611110	Fundamentals of Design and CAD 1			5
	611111	Fundamentals of Design and CAD 1			
G12	611120	Technical Mechanics			5
	611121	Technical Mechanics			
Total					60

2.2 Basic studies in English

2.2.1 Subjects in English

The courses in the basic study programme in English are listed in Table 2.3 below.

Table 2.3: Basic studies in English

Semester	Course					Examination		Prerequisite		ECTS
	Module	No	Course title	Type	SWS	Type	Duration	Type	Duration	
1	G1	611510	Mathematics 1			LK	90			
		611511	Mathematics 1	V/Ü	6	Module examination			5	
	G3	611530	Physics			LKBK	90			
		611531	Physics	V/Ü	4	Module examination			5	
	G4	611540	Electrical Engineering and Electronics 1			LK	90			
		611541	Electrical Engineering and Electronics 1	V/Ü	4	Module examination			5	
	G6	611560	Programming 1			LK	90			
		611561	Programming 1	V/L	4	Module examination			5	
	G8	611580	Engineering Mechanics 1			LK	60			
		611581	Engineering Mechanics 1	V/Ü	4	Module examination			5	
	G11	611610	German Language and Academic Skills 1 ¹⁾			LP				
		611611	German Language and Academic Skills 1	V/S	4	Module examination			5	
Total 1st semester					26	6		0		30
2	G2	611520	Mathematics 2			LK	120			
		611521	Mathematics 2	V/Ü	4	Module examination			5	
	G5	611550	Electrical Engineering and Electronics 2							
		611551	Electrical Engineering and Electronics 2	V/Ü	2	LK	90			2.5
	G7	611552	Lab Electrical Engineering	L/S	2			SL		2.5
		611570	Programming 2			LK	120			
	G9	611571	Programming 2	V/L	4	Module examination			5	
		611590	Engineering Mechanics 2 and 3			PK	120			
	G10	611591	Engineering Mechanics 2	V/Ü	2	Module examination			2.5	
		611592	Engineering Mechanics 3	V/Ü	2	Module examination			2.5	
	G12	611600	Materials			PK	90			
		611601	Materials: Plastics	V/Ü	2	Module examination			2.5	
	G12	611602	Materials: Metals	V/Ü	2	Module examination			2.5	
		611620	German Language and Academic Skills 2 ²⁾			LP				
	G12	611621	German Language and Academic Skills 2	V/S	4	Module examination			5	
		Total 2nd semester					24	6		1

¹⁾ 611610 German Language and Academic Skills 1: Written and oral knowledge of German at level B1, proven by a written examination (with an oral part if necessary), e.g. telc B1, Goethe Certificate B1, DSD I or equivalent

²⁾ 611620 German Language and Academic Skills 2: Written and oral knowledge of German at level B2, proven by a written examination (with an oral part if necessary), e.g. telc B2, Goethe Zertifikat B2, DSD II, TestDaF 3, DSH 1 or equivalent; see also point 3.5

2.2.2 Module examinations of the basic English course

The module examinations for the basic study programme are listed in Table 2.4 below:

Table 2.4: Module examinations for the Bachelor's preliminary examination, Weighting of individual examination results and module grades

Module grades for the basic study programme in English: Technical Management (TEM)					
Module	No	Module name			Weighting of the module grade for the grade according to § 22
		Examination	No	Prerequisite	
Mathematics and Physics					
G1	611510	Mathematics 1			5
	611511	Mathematics 1			
G2	611520	Mathematics 2			5
	611521	Mathematics 2			
G3	611530	Physics			5
	611531	Physics			
Electrical Engineering					
G4	611540	Electrical Engineering and Electronics 1			5
	611541	Electrical Engineering and Electronics 1			
G5	611550	Electrical Engineering and Electronics 2			5
	611551	Electrical Engineering and Electronics 2			
			611552	Electrical Engineering Laboratory	
Programming					
G6	611560	Programming 1			5
	611561	Programming 1			
G7	611570	Programming 2			5
	611571	Programming 2			
Engineering Mechanics					
G8	611580	Engineering Mechanics 1			5
	611581	Engineering Mechanics 1			
G9	611590	Engineering Mechanics 2 and 3			5
	611591	Engineering Mechanics 2			
	611592	Engineering Mechanics 3			
G10	611600	Materials			5
	611601	Materials: Plastics			
	611602	Materials: Metals			
German and Academic Skills					
G11	611610	German Language and Academic Skills 1			5
	611611	German Language and Academic Skills 1			
G12	611620	German Language and Academic Skills 2			5
	611621	German Language and Academic Skills 2			
Total					60

2.3 Bachelor's preliminary examination

The preliminary bachelor's examination for the German and English basic studies comprises the module grades for all modules listed in Table 2.2 (German) or Table 2.4 (English). If several performance assessments take place at course level within a module, the module grade is determined according to a weighted arithmetic mean of the individual performances contained in the module in accordance with the ECTS. The overall grade for the preliminary Bachelor's examination is calculated as the weighted arithmetic mean of the module grades, with the weights for the individual grades being determined on the basis of the ECTS credits listed in Table 2.2 (German) or Table 2.4 (English).

3 Main studies

3.1 Subject

The courses in the main study programme are listed in Table 3 below.

Table 3: Subjects in the main study period

Semester	Course					Examination		Prerequisite		ECTS
	Module	No	Course title	Type	SWS	Type	Duration	Type	Duration	
3	H1	611210	Project and innovation management			LK	90			
		611211	Project and Innovation Management	V/Ü	4	Module examination			5	
	H	611220	Industrial Engineering			LK	90			
		611221	Industrial Engineering	V/Ü	4	Module examination			5	
	H3	611230	Internal accounting			LK	90			
		611231	Internal accounting	V/Ü	4	Module examination			5	
	H6	611260	Manufacturing processes			LK	90			
		611261	Manufacturing processes	V/L	4	Module testing			5	
	H9	611290	Fundamentals of Design and CAD 2			LA				
		611291	Fundamentals of Design and CAD 2	V/Ü	4	Module examination			5	
	H10	611300	Automation technology			LK	90			
		611301	Automation technology	V/Ü	4	Module examination			5	
Total 3rd semester					24	6	0	30		

4	H4	611240	Lean production			LK	90		
		611241	Lean Production	V/Ü	4	Module examination			5
	H5	611250	Business management software			LK	90		
		611251	Business management software	V/Ü	4	Module examination			5
	H7	611270	Assembly technology, maintenance management and technical laboratory						
		611271	Hybrid assembly systems	V/L	2	LK	60		2.5
	H8	611272	Maintenance management	V/Ü	2	LA			2.5
		611273	Technical laboratory	L/S	2			SA	2.5
		611280	Applied Measurement Technology, Quality Management and Law						
		611281	Applied Measurement Technology	V/Ü	2	LKBK	60		2.5
		611282	Quality management	V/Ü	2	LKBK	60		2.5

		611283	Law	V/Ü	2		SA	60	2.5
	H11	611310	Industrial digitalisation			LK	90		
		611311	Industrial Digitalisation	V/Ü	4	Module examination			5
Total 4th semester					24	7	2	30	

5	H12	611320	Practical study semester						
		611321	Supervised practical phase		0		SA		26
		611322	Colloquia accompanying the practical study semester.	S	0		SR		4
Total 5th semester					0	0	2	30	

6	H13	611330	Practical Engineering Project and Applied Project Management			LA			
		611331	Practical Engineering Project	S	8	Module examination			10
		611332	Applied Project Management	S	2	Module examination			2.5
	H1	611340	Material flow simulation			LA			
		611341	Material flow simulation	V/Ü	4	Module examination			5
	H15	611350	Ethics and sustainability			LA			
		611351	Ethics and Sustainability	V/Ü	4	Module examination			5
	H1	611360	Elective module						
Total 6th semester					24	4	0	30	

7	H17	611370	The tension between business, technology and society								
		611371	Business simulation game	V/Ü	2	LA				2.5	
			Elective subject(s) in accordance with Section 3.2		4	Lx				5	
	H1	611380	Applied study			LA					
		611381	Applied study	Ü	2					7.5	
	H1	611390	Bachelor thesis								
		611391	Colloquium on the bachelor thesis	S	SR			SR		3	
		611392	Bachelor's thesis		0	PB				12	
Total 7th semester				8	4		1		30		

3.2 Electives

In order to fulfil the examination requirements, students select **elective modules** and **the interdisciplinary field of economics, technology and society** in the sixth and seventh semesters, choosing technical electives totalling 12.5 ECTS from the WF catalogue.

The WF catalogue is part of the module handbook and is available on the programme homepage and the university's official digital learning platform by the end of the previous semester at the latest. Subjects from other programmes outside the Heilbronn University faculty or from other universities may be recognised upon request. Participation in elective subjects may be limited due to capacity reasons.

Changes to the WF catalogue are approved by the examination board upon request of the lecturer responsible for the course in question, after consultation with the faculty council and the study commission. The subjects offered must take into account the competence objectives of the degree programme and must correspond to at least level 6 of the German Qualifications Framework. Multiple credits for subjects are not permitted.

3.3 Module examinations in the main study period

The module examinations of the Bachelor's examination, the associated examination requirements and prerequisites, as well as the weighting of the grades for the individual examination requirements and the module grades and the Bachelor's thesis are shown in Table 4.

Table 4: Module examinations for the Bachelor's examination, weighting of the grades for the individual examination components and module grades

Module grades for the main study programme: Technical Management (TEM)					
Module	No.	Module name			Weighting of the module grade for the grade according to § 29
		Examination	No	Preliminary examination	
Management in manufacturing companies					
H1	611210	Project and innovation management			5
	611211	Project and Innovation Management			
H2	611220	Industrial Engineering			5
	611221	Industrial Engineering			
H3	611230	Internal Accounting			5
	611231	Internal accounting			
H4	611240	Lean production			5
	611241	Lean Production			
H5	611250	Business management software			5
	611251	Business management software			
Technology and manufacturing processes in production					
H6	611260	Manufacturing processes			5
	611261	Manufacturing processes			
H7	611270	Assembly technology, maintenance management and technical laboratory			7.5
	611271	Assembly technology			
	611272	Maintenance management			
			611273	Technical laboratory	
H8	611280	Applied Measurement Technology, Quality Management and Law			7.5
	611281	Applied measurement technology			
	611282	Quality management			
			611283	Law	
H9	611290	Fundamentals of Design and CAD 2			5
	611291	Fundamentals of Design and CAD 2			

H10	611300	Automation Technology			5
	611301	Automation technology			
H11	611310	Industrial digitalisation			5
	611311	Industrial Digitalisation			
Practical study semester					
H1	611320	Practical study semester			0
			611321	Supervised practical phase	
			611322	Colloquia accompanying the practical study semester.	
Conflict between corporate management and social responsibility					
H1	611330	Practical Engineering Project and Applied Project Management			12.5
	611331	Practical Engineering Project			
	611332	Applied Project Management			
H14	611340	Material flow simulation			5
	611341	Material flow simulation			
H15	611350	Ethics and sustainability			5
	611351	Ethics and Sustainability			
H16	611360	Elective module			7.5
		Elective subject(s) in accordance with section 3.2			
H17	611370	The tension between business, technology and society			7.5
	611371	Business simulation game			
		Elective subject(s) in accordance with section 3.2			
H1	611380	Applied study			7.5
	611381	Applied study			
Bachelor thesis					
H1	611390	Bachelor thesis			15
			611391	Colloquium on the bachelor thesis	
	611392	Bachelor thesis			
Total					120

3.3.1 Practical Engineering Project and Applied Project Management

The admission requirement for this module is a completed practical study semester (see 3.6). In justified exceptional cases and upon separate application, the examination board may grant an exemption.

3.3.2 Colloquium on the Bachelor's thesis

The subject of the colloquium on the Bachelor's thesis is the development of in-depth content from the subject area of the Bachelor's thesis that goes beyond the scope of the thesis itself. The results of the work are presented orally in the course and discussed.

3.4 Bachelor's examination

The Bachelor's certificate contains the module grades for all modules listed in Table 4 and the Bachelor's thesis. If several performance assessments take place at the course level within a module (including elective modules), the module grade is determined according to an ECTS-weighted arithmetic mean of the individual performances contained in the module. The overall grade of the Bachelor's certificate is calculated as the weighted arithmetic mean of the module grades and the grade for the Bachelor's thesis, with the weights for the individual grades being determined on the basis of the ECTS credits listed in Table 4.

3.5 Admission requirements

The following admission requirements apply:

The admission requirement for admission to the German-language main **study programme with a foundation course in English is that module 611620 German Language and Academic Skills 2** has been passed at minimum language level B2 or equivalent. Proof of this must be provided by submitting one of the following certificates: DSH-1, Goethe B2, telc B2 (or comparable tests in accordance with the framework regulations for German language tests for studying at German universities). Passing the corresponding GER course level of a DaF course at the Centre for Studies and Teaching at Heilbronn University is also accepted as equivalent proof.

Successful participation in the practical study semester must be proven at the latest when the Bachelor's thesis is submitted.

The modules of the 3rd and 4th semesters must be passed before the Bachelor's thesis is issued.

3.6 Practical study semester

The requirements for crediting the practical study semester and the office responsible for crediting are regulated in the general section of these study and examination regulations (§§ 4, 7 (2)).

During the practical study semester, students should apply the knowledge they have acquired so far in a supervised practical phase. It must be ensured that students are able to gain a sufficient overview of the technological features of the products and processes as well as of the organisational and commercial contexts.

3.7 Special regulations for Studium-PLUS models during the term of the contract between the cooperating company and the student

As part of their studies, Studium Plus students are required to complete additional practical training at their partner company during lecture-free and exam-free periods that are not used for statutory holiday entitlement. During these periods, the specialist knowledge acquired to date is applied and consolidated in practice, and students gain in-depth knowledge of the working conditions and methods of engineers.

Their engineering-related activities include working as independently and responsibly as possible, as well as working on and solving specific problems in the following possible areas:

- Development
- Laboratory, testing and test field
- Design and standardisation
- Production planning and control
- Production and assembly
- Quality assurance
- Project planning
- Technical sales
- or other relevant areas.

The focus is based on the company's capabilities and the content of the degree programme.

The level of the activities must be adapted to the individual progress of the course so that the course content can be learned, applied and consolidated through in-depth practical knowledge.

4 Entry into force

These study and examination regulations (SPO 1) shall enter into force on 1 September 2025.

Heilbronn, 30 April 2025

Signed:

Prof. Dr.-Ing. Oliver Lenzen Rector

Announcement

The examination regulations are hereby publicly announced in accordance with the announcement regulations of Heilbronn University of Applied Sciences dated 28 June 2017.

Heilbronn, 30 April 2025

For the Prorectorate for Learning and Teaching

Signed

Prof. Dr. Ulrich Brecht