HOCHSCHULE HEILBRONN

Master's degree programme:
Intelligent Mechatronic Systems (IMS)

The following study and examination regulations
were examined and adopted in the 461st meeting
of the Senate on 10 December 2025.

Only the German version of this document is legally binding!

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

Master's degree programme
Intelligent Mechatronic Systems (IMS)

1 Course structure

1.1 Total scope

The total scope of the compulsory, advanced and elective courses required for successful completion of the programme leads to the acquisition of 90 ECTS credits. The standard period of study is three semesters.

1.2 Structure of the programme

The courses required for successful completion of the programme and the associated coursework and examinations are listed in Table 1. The courses are assigned to individual modules, which are awarded ECTS credits.

1.3 Language of instruction

All compulsory courses are held in English (§3 (4), SPO AT Master 3sem). Electives may also be offered in German.

1.4 Examination board

The responsible examination board is the Examination Board for the Master's in Intelligent Mechatronic Systems at the Faculty of Technology.

1.5 Degree

Heilbronn University awards the academic degree Master of Engineering, abbreviated M. Eng., upon successful completion of the Master's examination.

2 Master's programme

2.1 Subjects of the Master's programme

The courses offered in the Master's programme in Intelligent Mechatronic Systems are listed in Table 1.

Table 1: Master's programme in Intelligent Mechatronic Systems[1]

Semester overview Master's: Intelligent Mechatronic Systems								
Semester	Course					Examination		ECTS
	Module	No	Course title	Type	SWS	Type	Duration	
1	M1	617010	**Methods and Processes 1**					
			Electives according to Section 2.2.1			Lx		5
	M3	617030	**Electives 1**					
			Electives according to Section 2.2.2			Lx		10
	M4	617040	**Engineering Project**					
		617041	Engineering Project	L	1	LA		5
	M5	617050	**Languages**					
			Electives according to Section 2.2.3			Lx		5
	M6	617060	**Recommended studies**					
			Advised Studies according to Section 2.2.2			Lx		5
Totals 1st semester								**30**
2	M2	617020	**Methods and Processes 2**					
			Electives according to Section 2.2.1			Lx		5
	M3	617030	**Electives 1**					
			Electives according to Section 2.2.2			Lx		15
	M4	617040	**Engineering Project**					
		617041	Engineering Project	L	1	LA		5
		617042	Colloquium Engineering Project	S	1	SR		2.5
		617043	Academic and Professional Skills	V/Ü	2	LA		2.5
Totals 2nd semester								**30**
3	M9	617070	**Master's thesis**					
		617071	Master's thesis		0	PT		28
		617072	Master's Thesis Colloquium	S	0	SR		2
Totals 3rd semester								**30**

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

2.2 Compulsory and elective subjects

2.2.1 Compulsory subjects of the Methods and Processes 1 (M1) and 2 (M2) modules

The subjects in Table 2 can be selected in the Methods and Processes 1 and Methods and Processes 2 modules, with a total of 5 ECTS per module. It is not possible to count the same examination more than once.

Table 2: Compulsory subjects of the Methods and Processes 1 (M1) and 2 (M2) modules

Course				Examination		ECTS points
No	Designation	Type	Scope SWS	Type	Duration in minutes	
617401	Numerical and Optimisation Methods	V/Ü	2	LP		2.5
617402	Statistical Methods	V/Ü	2	LK	60	2.5
617403	Selected Topics of Mathematics	V/Ü	2	LK	60	2.5
617404	Design of Experiments	V/Ü	2	LK	90	2.5

2.2.2 Subjects of the Electives 1 module (M3) and the Advised Studies module (M6)

To fulfil the examination requirements of the **Electives 1 (M3) module,** students select from the WF catalogue totalling 25 ECTS.

The WF catalogue is part of the module handbook and is made available on the homepage of the degree programme and the official digital learning platform of the university by the end of the previous semester at the latest. Subjects from other degree programmes outside the faculty of Heilbronn University or another university can be recognised by the examination board upon request. Only engineering, computer science or natural science subjects from a master's degree programme (at least level 7 of the German Qualifications Framework - DQR) that take into account the competence objectives of the degree programme, can be recognised. Participation in subjects from the WF catalogue may be limited for capacity reasons.

Changes to the WF catalogue are approved by the examination board upon application by the teacher 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. These must correspond to at least level 7 of the German Qualifications Framework. Multiple credits for subjects are not permitted.

In the subject **Advised Studies (M6)**, individual knowledge for compulsory or advanced subjects is to be acquired. To this end, at the request of the student, the examination board must approve corresponding courses or suitable online courses at a minimum level of DQR 7, totalling 5 ECTS. The selection of subjects is approved by the module coordinator. The contents are published in the module handbook for the degree programme.

2.2.3 Subjects in the Languages module (M5)

In the **Languages** module **(M5),** students take the German Language course worth 5 ECTS credits. Students with German language skills at DSH1 level or equivalent, or who have completed their schooling in German, take a language course in a language other than German worth a total of 5 ECTS credits.

2.3 Module examinations in the Master's programme

The module examinations for the Master's examination, the associated examination requirements and the weightings of the grades for the individual examination requirements and module grades as well as the Master's thesis are shown in Table 3.

Table 3: Module examinations in the Master's programme in Intelligent Mechatronic Systems – weightings of the grades for the individual examination components and module grades

Module grades Master's: Intelligent Mechatronic Systems			
Module	**No**	**Module name** **Examination performance**	**Weighting of the module grade for the grade in accordance with § 24**
M1	**617010**	**Methods and Processes 1**	**5**
		Electives according to Section 2.2.1	
M2	**617020**	**Methods and Processes 2**	**5**
		Electives according to Section 2.2.1	
M3	**617030**	**Electives 1**	**25**
		Electives according to Section 2.2.2	
M4	**617040**	**Engineering Project**	**15**
	617041	Engineering Project	
	617042	Colloquium Engineering Project	
	617043	Academic and Professional Skills	
M5	**617050**	**Languages**	**5**
		Electives according to Section 2.2.3	
M6	**617060**	**Recommended studies**	**5**
		Advised Studies according to Section 2.2.2	
M7	**617070**	**Master's Thesis**	**30**
	617071	Master's Thesis	
	617072	Colloquium Master's Thesis	
Total			**90**

2.4 Master's Examination

The Master's certificate contains the module grades for all module examinations listed in Table 3, including the Master's thesis. If several performance assessments take place at course level within a module, the module grade is determined according to an ECTS-weighted arithmetic mean of the individual performances contained in the module. The module grade for the module examination is the weighted arithmetic mean of the grades for the examinations in the courses belonging to the respective module examination. The overall grade for the Master's degree certificate is calculated from the weighted arithmetic mean of the module grades and the grade for the Master's thesis, with the weights for the individual grades being determined on the basis of the ECTS from Table 3.

3 Entry into force and transitional provisions

3.1 Entry into force

These study and examination regulations shall enter into force on 1 September 2026.

Heilbronn, 10 December 2025

Signed

Prof. Dr Oliver Lenzen

- Rector -

Announcement

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

Heilbronn, 10 December 2025

Signed:

Prof. Dr. Ulrich Brecht

Vice-Rector for Learning and Teaching