

## § XX Mechanical Systems Engineering Study Program

- (1) The program comprises seven semesters and is divided into two study phases. The first study phase comprises semesters 1 and 2, and the second study phase comprises semesters 3 through 7.
- (2) Examinations are generally to be taken within the respective study phases to which they are assigned.
- (3) All modules are considered passed only if every individual examination requirement has been met and all coursework has been completed.
- (4) For a report (BE), a term paper (HA), a lab report (LA), a seminar paper (ST), a practical assignment (PA), a project (PR), or a thesis (AA), the student may also be required to defend the content of the work orally. Presentations (RE) may also need to be submitted in written form.
- (5) The grouping into modules, their chronological sequence, their time allocation in semester hours per week (SWS), the credits (C) awarded for them, and the associated coursework and examination requirements are shown in the overview in the following tables.
- (6) The first stage of study, which concludes with the intermediate examination, comprises the first and second semesters.

**Table 1:** Required modules of the first stage of study (1st and 2nd semesters)

Modules		Type	SWS and assigned semester		Course credit (ungraded)	Exam	Credits	
			Sem. 1	Sem. 2				
MSE-B 01	Mathematics 1	V	6			K90	6	
MSE-B 02	Mechanics 1	V+L	5		PA	K90	6	
MSE-B 03	Design 1	V+L	6		PA	K90	6	
MSE-B 04	Digital Science	V+L	5		PA	PA	6	
MSE-B 05	Languages 1 / Electives 1	as posted in the 1st semester						6
MSE-B 06	Mathematics 2	V		6		K90	6	
MSE-B 07	Mechanics 2	V+L		5	PA	K90	6	
MSE-B 08	Materials	V+L		6	LA	K90	6	
MSE-B 09	Thermodynamics	V		6		K120	6	
MSE-B 10	Languages 2 / Electives 2	as posted in the 2nd semester						6
<b>Total SWS</b>			<b>27</b>	<b>28</b>				
<b>Total credits</b>			<b>30</b>	<b>30</b>			<b>60</b>	

- (7) The second stage of the program, which concludes with the final examination, covers semesters 3 through 7 and is structured as follows:
  - a. Required modules (in the 3rd, 4th, and 6th semesters)
  - b. Practical semester (in the 5th semester)
  - c. Elective courses (in the 7th semester)
  - d. Bachelor's thesis (in the 7th semester)

**Table 2:** Required modules of the second stage of study (3rd to 7th semesters)

Modules		Type	Credit hours and corresponding semester					Course credit (ungraded)	Exam	Credits
			3	4	5	6	7			
MSE-B 11	Robotics and Manufacturing	V+L	6					PA	K90	6
MSE-B 12	Mechatronics	V	6						K90	6
MSE-B 13	Mechanics 3	V+L	5					PA	K90	6
MSE-B 14	Modeling and Simulation (CAE)	V+L	6						PA <sub>1</sub> + PA <sub>2</sub> <sup>1)</sup>	6
MSE-B 15	Languages 3 / Electives 3	as posted in the 3rd semester								6
MSE-B 16	Systems Engineering	V+L		4				PA	K60	6
MSE-B 17	Fluid Engineering and Heat Transfer	V		6					K120	6
MSE-B 18	Mechanics 4	V+L		5				PA	K90	6
MSE-B 19	Design 2	V+L		6				PA	K90	6
MSE-B 20	Languages 4 / Electives 4	as posted in the 4th semester								6
MSE-B 21	Internship Semester	P+WA			-			BE	ST	30
MSE-B 22	Measurement and Control Engineering	V+L				6		LA	K90	6
MSE-B 23	Product Life Cycle Management	S				4			PA	6
MSE-B 24	Numerical Methods in Engineering	V+L				4		PA	K60	6
MSE-B 25	Applied Fluid Engineering	V+L				6		PA	K60	6
MSE-B 26	Languages 5 / Electives 5	as posted in the 6th semester								6
MSE-B 27	Electives	as posted in the 7th semester								12
MSE-B 28	Scientific Writing and Bachelor's Thesis	S+WA			3			RE	AA+KO <sup>2)</sup>	18
<b>Sum SWS</b>			<b>28</b>	<b>26</b>	<b>-</b>	<b>25</b>	<b>3</b>			
<b>Total Credits</b>			<b>30</b>	<b>30</b>	<b>30</b>	<b>30</b>	<b>30</b>			<b>150</b>

1) Weighting: 2/3 PA<sub>1</sub> + 1/3 PA<sub>2</sub>

2) Weighting: 4/5 AA + 1/5 KO

- (8) Admission to the practical study semester in the 5th semester is granted in accordance with § 4 (6) only to those who have passed all coursework and examinations from the first stage of study ("interim examination"). A practical placement that complies with the regulations must be submitted for approval. Exceptions to this may be approved by the chair of the examination committee upon written request. For the practical study semester, a work report must be prepared and a work certificate submitted. These documents are evaluated by the head of the relevant internship office. In addition, a graded term paper is prepared, which is evaluated by the supervising professor. The module contributes 6 credits to the final grade.
- (9) A total of 12 credits are required in the elective area. At least 6 credits must be earned from modules with graded examinations. A maximum of 4 credits may be earned from language courses. The course offerings will be announced before the start of the semester. Elective modules may be taken starting in the third semester.
- (10) In the MSE-B 28 module, the course "Scientific Work" must be taken in the third or fourth semester. The duration of the bachelor's thesis (workload equivalent to 12 credits) is six months and must be presented in the form of a colloquium presentation. A prerequisite for admission to the colloquium presentation is attendance at a minimum of 20 presentations as part of the M+V departmental colloquium.

- (11) Upon submission of the declaration for the final transcript, proof of German language proficiency at least at level B1 according to the Common European Framework of Reference for Languages (CEFR) must be provided. The Language 1/2/3/4/5 modules, the practical study semester, and the bachelor's thesis are designed to help students achieve German language proficiency (Level B1). The language courses in the Language Modules 1/2/3/4/5 must be selected in such a way that an improvement from the respective starting level is achieved in every case. If German language proficiency at the B2 level is already present (evidenced by German as a native language or a high school diploma from a German-speaking country [where German is the language of instruction and learning]), students must take elective courses or additional language courses within the Language 1/2/3/4/5 modules.

draft / preliminary till final accreditation