

## **School of Mechanical Engineering**



Study packages for incoming exchange students of the  
School of Mechanical Engineering

The School of Mechanical Engineering (German: Studiendekanat Maschinenbau) is the largest School of Study at Hamburg University of Technology (TUHH) offering plenty of courses to choose from. You can of course create your own, completely individual curriculum according to your preferences and the requirements of your sending institution. However, to help you get started, we propose the following pre-defined study packages based on our Master's programs which you may use unmodified or adapt to your liking, especially if you need to achieve a certain number of ECTS point during your stay at TUHH. For each Master's program there is typically one package for the summer and one for the winter semester.

In rare cases the timetable of a lecture course can change, therefore some of your courses might overlap. Please check for updated schedules in the current "[Course Catalogue](#)" on the homepage of TUHH. The link and a QR code can be found below.

We can of course help you checking and – if necessary – adapting your curriculum. Please also note that some few courses only allow a limited number of participants. Therefore, you should check the availability of free spots as early as possible and respect the registration deadlines of the courses. The affected course are marked with the symbol \* in the list below.

For the detailed information about modules and courses of the study packages, please visit the "[Course Catalogue](#)" and "[Module Description](#)" website of the TUHH.

### Course Catalogue

[https://intranet.tuhh.de/stud/vvz\\_eingabe.php?Lang=en](https://intranet.tuhh.de/stud/vvz_eingabe.php?Lang=en)



### Module Description

<https://intranet.tuhh.de/kvvz/index.html?Lang=en>



## Overview of the study packages

<b>Study Package 1a (Winter Semester): Product Development, Materials and Production</b>	<b>Study Package 1b (Summer Semester): Product Development, Materials and Production</b>
Environmental Protection and Management   6 ECTS	*Selected Topics of Product Development, Materials Science and Production: Reliability in Engineering Dynamics   4 ECTS
Vibration Theory   6 ECTS	Fibre-Polymer-Composites   6 ECTS
Technical Acoustics II (Room Acoustics, Computational Methods)   6 ECTS	Technical Acoustics I (Acoustic Waves, Noise Protection, Psycho Acoustics)   6 ECTS
Robotics (Modelling and Control)   6 ECTS	Mechanical Properties   6 ECTS
Finite Elements Methods   6 ECTS	High-Order FEM   6 ECTS
-	*Business & Management: Problem-based Learning: Internationalization Strategies   2 ECTS

\* Number of participants may be limited

<b>Study Package 2a (Winter Semester): Biomedical Engineering</b>	<b>Study Package 2b (Summer Semester): Biomedical Engineering</b>
*Selected Topics of Biomedical Engineering: Lecture: Nature's Hierarchical Materials   3 ECTS	*Selected Topics of Biomedical Engineering: Lecture: Experimental Methods for the Characterization of Materials   3 ECTS
BIO II: Biomaterials   3 ECTS	*Bioelectromagnetics: Principles and Applications   6 ECTS
Advanced Functional Materials   6 ECTS	Linear and Nonlinear System Identifikation   3 ECTS
Vibration Theory   6 ECTS	Nonlinear Dynamics   6 ECTS
Control Systems Theory and Design   6 ECTS	Optical and Robust Control   6 ECTS
Finite Elements Methods   6 ECTS	-

<b>Study Package 3a (Winter Semester): Materials Science</b>	<b>Study Package 3b (Summer Semester): Materials Science</b>
BIO II: Biomaterials   3 ECTS	Fibre-Polymer-Composites   6 ECTS
Microsystems Technology   4 ECTS	Optoelectronics I: Wave Optics   6 ECTS
Advanced Functional Materials   6 ECTS	High-Order FEM   4 ECTS
Optoelectronics II: Quantum Optics   4 ECTS	Methods in Theoretical Materials Science   6 ECTS
Nonlinear Structural Analysis   6 ECTS	Quantum Mechanics of Solids   6 ECTS
*German as a Foreign Language   4 ECTS	*Business & Management: Problem-based Learning: Internationalization Strategies   2 ECTS
Business & Management: Lecture: Project Management   2 ECTS *Lecture: Marketing   2 ECTS	-

<b>Study Package 4a (Winter Semester): Energy Systems</b>	<b>Study Package 4b (Summer Semester): Energy Systems</b>
Finite Element Methods   6 ECTS	Boundary Element Methods   6 ECTS
Vibration Theory   6 ECTS	Fibre-Polymer-Composites   6 ECTS
Control Systems Theory and Design   6 ECTS	Numerical Treatment of Ordinary Differential Equations   6 ECTS
Innovative CFD Approaches   6 ECTS	Optimal and Robust Control   6 ECTS
*German as a Foreign Language   4 ECTS	Technical Acoustics I (Acoustic Waves, Noise Protection, Psycho Acoustics)   6 ECTS
Business & Management: Lecture: Project Management   2 ECTS	-

\* Number of participants may be limited

<b>Study Package 5a (Winter Semester): Aircraft Systems Engineering</b>	<b>Study Package 5b (Summer Semester): Aircraft Systems Engineering</b>
Advanced Topics in Control   6 ECTS	Fibre-Polymer-Composites   6 ECTS
Technical Acoustics II (Room Acoustics, Computational Methods)   6 ECTS	Technical Acoustics I (Acoustic Waves, Noise Protection, Psycho Acoustics )   6 ECTS
Industrial Process Automation   6 ECTS	Optimal and Robust Control   6 ECTS
Robotics   6 ECTS	Embedded Systems   6 ECTS
*German as a Foreign Language   4 ECTS	*German as a Foreign Language   4 ECTS
*Business & Management: Lecture: Marketing   2 ECTS	*Business & Management: Problem-based Learning: Internationalization Strategies   2 ECTS

<b>Study Package 6a (Winter Semester): Naval Architecture and Ocean Engineering</b>	<b>Study Package 6b (Summer Semester): Naval Architecture and Ocean Engineering</b>
Ship Vibration   6 ECTS	Not enough courses with compatible schedules available for this specialization during summer term
Structural Analysis of Ships and Offshore Structures   6 ECTS	
Fatigue Strength of Ships and Offshore Structures   6 ECTS	
*Arctic Technology   6 ECTS	
Vibration Theory   6 ECTS	

<b>Study Package 7a (Winter Semester): Theoretical Mechanical Engineering - Numerics and Computer Science</b>	<b>Study Package 7b (Summer Semester): Theoretical Mechanical Engineering - Numerics and Computer Science</b>
3D Computer Vision   6 ECTS	Boundary Element Methods   6 ECTS
Digital Processing and Digital Filters   6 ECTS	Numerical Treatment of Ordinary Differential Equations   6 ECTS
Intelligent Autonomous Agents and Cognitive Robotics   6 ECTS	Machine Learning and Data Mining   6 ECTS
Mathematical Image Processing   6 ECTS	Pattern Recognition and Data Compression   6 ECTS
Soft Computing   6 ECTS	Numerical Mathematics II   6 ECTS

\* Number of participants may be limited

<b>Study Package 8a (Winter Semester): Mechanical Engineering and Management</b>	<b>Study Package 8b (Summer Semester): Mechanical Engineering and Management</b>
Marketing and Communication   6 ECTS	Economics   6 ECTS
Computer Aided Design and Computation   6 ECTS	Fibre-Polymer-Composites   6 ECTS
Robotics   6 ECTS	*Technology Entrepreneurship   6 ECTS
Selected Topics of Mechanical Engineering and Management: *International Law for Engineers   2 ECTS	*Selected Topics of Mechanical Engineering and Management: Advanced Research Seminar   2 ECTS
Accounting   4 ECTS	
Business & Management: *Lecture: Marketing   2 ECTS	Rapid Production   6 ECTS
*German as a Foreign Language   4 ECTS	*German as a Foreign Language   4 ECTS

<b>Study Package 9a (Winter Semester): Mechatronics</b>	<b>Study Package 9b (Summer Semester): Mechatronics</b>
*Design and Implementation of Software Systems   6 ECTS	*Mechatronic Systems   6 ECTS
Finite Elements Methods   6 ECTS	*Selected Topics of Mechatronics: Process Measurement Engineering   4 ECTS
Robotics   6 ECTS	Linear and Nonlinear System Identification   3 ECTS
Control Systems Theory and Design   6 ECTS	Nonlinear Dynamics   6 ECTS
Vibration Theory (GES)   6 ECTS	Embedded Systems   6 ECTS
-	Software for Embedded Systems   6 ECTS

\* Number of participants may be limited