

## Selecting compulsory elective subjects for the master's programme Electrical Engineering and Information Technology

The selected compulsory elective subjects must encompass a minimum 15 awardable ECTS credits. Students wishing to switch their area of specialisation at DIT from that of their bachelor's degree programme must select the harmonisation courses and also one subject with a minimum 5 awardable ECTS credits. Courses attended in other faculties will be reviewed to determine if they meet the evaluation criteria determined by this Faculty and will be accepted for these courses by the examination board overseeing the master's programme Electrical Engineering and Information Technology. Please note: High-Frequency Electronics, Communications Engineering 2, Power Electronics and Control Techniques 2 may only be selected as compulsory elective subjects if you did not take the subject in question as part of your bachelor's degree programme!!

Please note: If German is specified as the language of instruction for an elective subject, then the exam will also be conducted exclusively in German!

PO	No.	Module/Subject	ETCS	Language	From study prog.	Sem
ET-B_WS25/26	ET-34/ ET-37	Harmonisierungskurs ENS (verbindlich nur wenn Bachelorvertiefungsrichtung nicht NT oder TE war) Fächer: Hochfrequenzelektronik und Nachrichtenübertragungstechnik 2	5+5	DEUTSCH	Bachelor Electrical Engineering and Information Technology	SS
	ET-26/ ET-30	Harmonisierungskurs AT (verbindlich nur wenn Bachelorvertiefungsrichtung nicht AUT oder EAT war) Fächer: Leistungselektronik und Regelungstechnik 2	5+5	DEUTSCH		SS
	ET-34	Hochfrequenzelektronik als Wahlpflichtfach	5	DEUTSCH		SS
	ET-37	Nachrichtenübertragungstechnik 2 als Wahlpflichtfach	5	DEUTSCH		SS
	ET-26	Regelungstechnik 2 als Wahlpflichtfach	5	DEUTSCH		SS
	ET-30	Leistungselektronik als Wahlpflichtfach	5	DEUTSCH		SS

ET-M_WS20/21	MET-08	Selected topics in Optoelectronics and Laser Technology (only for VR AT)	5	ENGLISH	Master Electrical Engineering and Information Technology	SS
	MET-09	Selected topics in Micro- and Nanoelectronics (only for VR AT)	5	ENGLISH		WS
	MET-10	Modern RF and Radio Systems (only for VR AT)	5	ENGLISH		WS
	MET-11	Special Devices and Circuits (only for VR AT)	5	ENGLISH		WS
	MET-12	Signals and Systems in Communication Technology (only for VR AT)	5	ENGLISH		WS
	MET-13	Advanced Modelling and Simulation (only for VR ENS)	5	ENGLISH		SS
	MET-14	Selected Topics in Control Engineering (only for VR ENS)	5	ENGLISH		WS
	MET-16	Automotive and Industrial Drive Systems (only for VR ENS)	5	ENGLISH		WS

	MET-17	Advanced Automation (only for VR ENS)	5	ENGLISH		WS
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ET-M_WS20/21	MET-04	Project for Electrical Engineering 1 – Requirement: topic approved by lecturer	5		Pool for Master in Electrical Engineering and Information Technology	SS/WS
	MET-04	Project for Electrical Engineering 2 – Requirement: topic approved by lecturer	5			SS/WS
	MET-04	Renewable Energies (Generation and Distribution)	5	ENGLISH		WS
	MET-04	Advanced Circuits Lab (Circuitry Hands-On Training) (only for international students!!)	5	ENGLISH		SS/WS
	MET-04	Imaging Physics	5	ENGLISH		WS
	MET-04	Hydrogen Technology	5	ENGLISH		WS
	MET-04	Simulation and Modeling of Electric Transport Systems	5	ENGLISH		WS
	MET-04	Fundamentals of Advanced Driver Assistance Systems	5	ENGLISH		WS

AI-M_SS2025	MAI-01	Theoretical Computer Science	8	ENGLISH	Master Applied Computer Science	SS
	MAI-02	Practical Computer Science	8	ENGLISH		SS
	MAI-03	Selected Topics in Embedded Software Development	5	ENGLISH		SS
	MAI-11	FPGA Programming	5	ENGLISH		SS

AID-M_SS2024	AID-01	Artificial Intelligence and Software Development	5	ENGLISH	Master's Artificial Intelligence and Data Science	SS
	AID-02	Theoretical Foundations of Artificial Intelligence and Data Science	8	ENGLISH		SS
	AID-03	Advanced Machine Learning	5	ENGLISH		SS

MMC-M_SS2024	MMC-01	Module: Cyber Physical Systems <b>(in person at Campus Cham)</b> <ul style="list-style-type: none"> <li>• MCS 1101 Structure and Functions of Cyber Physical Systems</li> <li>• MCS 1102 Business Models for CPS</li> </ul>	5	ENGLISH	Master Mechatronics and Cyber Physical Systems	WS
	MMC-05	Advanced Modelling and Simulation	5	ENGLISH		WS
	MMC-06	Case Study Mechatronic System Simulation	5	ENGLISH		WS
	MMC-07	Human Machine Interfaces -VR/AR <b>(in person at Campus Cham)</b>	5	ENGLISH		WS

MB-M_SS2018	DM-1	Höhere Mathematik	7	DEUTSCH	Master Mechanical Engineering	SS
	DM-2	Technische Datenbanken	5	DEUTSCH		WS
	DM-3	Fluid-/Thermodynamik	6	DEUTSCH		SS
	DM-4	Dynamische Systeme	5	DEUTSCH		SS
	DM-5	FEM/MKS	7	DEUTSCH		SS
	DM-6	Numerische Methoden	7	DEUTSCH		WS

	DM-7	Antriebssystemtechnik	5	DEUTSCH		WS
	DM-8	CAD / CAM <ul style="list-style-type: none"> <li>DM2105 CAD/CAM und Rapid Prototyping (5 ETCS)</li> <li>DM2106 CAD/CAM-Praktikum (2ETCS)</li> </ul>	7	DEUTSCH		WS
	DM-9	Virtuelles Testen	6	DEUTSCH		WS
	DM-10	Innovationsmanagement	5	DEUTSCH		SS

TEM-M-WS 2021/22	TE-1	Innovation in Start-Ups & etablierten Unternehmen <ul style="list-style-type: none"> <li>TE1101 Systematische Innovation (2 ECTS)</li> <li>TE1102 Fallstudie Innovation (6 ECTS)</li> </ul>	8	DEUTSCH	Master Technology Management	WS
	TE-2	Unternehmensführung <ul style="list-style-type: none"> <li>TE1103 Strategisches Management (4 ETCS)</li> <li>TE1104 Business Development und Marktforschung (2 ETCS)</li> </ul>	6	DEUTSCH		WS
	TE-3	Produktplanung <ul style="list-style-type: none"> <li>TE1105 Produktkonzeption und FMEA (4 ETCS)</li> <li>TE1106 Fallstudie Produkt-konzeption und FMEA (6 ETCS)</li> </ul>	10	DEUTSCH		WS
	TE-4	Befähiger für die Produktentstehung <ul style="list-style-type: none"> <li>TE1107 Qualitätsmanagement (2 ETCS)</li> <li>TE1108 Controlling (2 ETCS)</li> <li>TE1109 Projektmanagment (2 ETCS)</li> </ul>	6	DEUTSCH		WS
	TE-5	Engineering im Unternehmen <ul style="list-style-type: none"> <li>TE2101 Werkzeuge zur Entwicklung (4 ETCS)</li> <li>TE2102 Fallstudie Engineering (3 ETCS)</li> </ul>	7	DEUTSCH		SS
	TE-6	Produktionstechnik <ul style="list-style-type: none"> <li>TE2103 Ausgewählte Themen zur Produktion (4 ETCS)</li> <li>TE2104 Fallstudie Produktions-optimierung (5 ETCS)</li> </ul>	9	DEUTSCH		SS
	TE-7	Statistik & Logistik im Unternehmen <ul style="list-style-type: none"> <li>TE2105 Statistik im Unternehmen (4 ETCS)</li> <li>TE2106 Logistik (2 ETCS)</li> </ul>	6	DEUTSCH		SS
	TE-9	Führungskultur & intelligente Produktionsprozesse <ul style="list-style-type: none"> <li>TE3101 Werte und Strategientwicklung (2 ETCS)</li> <li>TE3102 Methoden der Prozesssteuerung und Optimierung (4 ETCS)</li> </ul>	6	DEUTSCH		WS

BU-M_SS2025	MBU-13	Recycling und Entsorgung	5	DEUTSCH	Master civil and environmental engineering	WS
	MBU-27W	Regenerative Energien 2	5	DEUTSCH		WS

LSI-M_WS2025/26	LSI-12	Data Visualization	5	ENGLISH	Master Life Science Informatics	SS
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HPC/QC-M_WS2021/22	HPC-01	Physics for HPC/QC	5	ENGLISH	Master High Performance Computing/Quantum Computing	SS
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ASE-M_SS2025	ASE-03	Advanced Driver Assistance Systems	5	ENGLISH	Master Automotive Software Engineering	SS
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X-Katalog FWP	AIX-1	Mobile and Wireless Networks (4SWS). Students should have a basic understanding of computer networks.  In case it is used at Master Level, Students must complete an additional Seminar part, where they will present a research paper of their choice that is related to the course content and lead a discussion about it.	5	ENGLISH	AI -X - Fachspezifische Wahlpflichtfächer	WS
	AIX-4	Quantum Computing (4SWS) Prerequisites and/or recommended background knowledge in: <ul style="list-style-type: none"> <li>• Programming</li> <li>• Algorithms and data structures</li> <li>• Mathematics, in particular linear algebra</li> </ul>	5	ENGLISH		WS
	FWP-10	Imaging Physics (4SWS) „Scientific Discoveries expressed as Images“ Prerequisites and/or recommended background knowledge in: <ul style="list-style-type: none"> <li>• Differential Analysis/Mathematics</li> <li>• Basics Computer Science and C. Vision</li> <li>• Basics Solid State Physics</li> </ul>	5	ENGLISH		WS
	AIX-B-9	Hardwareentwurf mit VHDL(4SWS)	5	DEUTSCH		WS
	AIX-M-3	Computer Vision	5	ENGLISH		SS

### **Abbreviations:**

- PstA Project assignment  
VR Area of specialization  
\* Approved by lecturer