

Updated Elective Module Catalogs for the Master's Degree Program Intelligent Manufacturing at
 Technische Universität Clausthal (Technical University of Clausthal), Faculty of Mathematics/Computer Science and
 Mechanical Engineering,
 AFB of July 11th, 2022 as amended by the 1st amendment of April 23rd, 2024
 for WiSe 2024/2025 and SuSe 2025
 Status: June 18th, 2024

On June 18th, 2024, the faculty of Mathematics/Computer Science and Mechanical Engineering adopted the following compulsory elective module catalogs for the Master's degree program in Intelligent Manufacturing in the version of the implementation regulations dated July 11th, 2022 in the version of the 1st amendment dated 23.04.2024 for the academic year winter semester 2024/2025 and summer semester 2025 in accordance with Section 13 (1) APO in conjunction with the program-specific implementation regulations:

Color code:

Newly selectable modules or courses

~~Deleted modules or courses~~ (these are no longer selectable)

Updates

Elective module catalog „Flexible and Intelligent Products and Processes“

The list of modules offered can be updated annually for the following academic year by resolution of the faculty board. The updated lists are announced publicly by the study center:

<https://www.tu-clausthal.de/studieninteressierte/studiengaenge/master-studiengaenge/intelligent-manufacturing>

Title of the module or lecture	LV-No.	LV-Type, SWS	CP	Exam form	Weighting	Graded ?	Exam type	Responsible examiner	WiSe 24/25	SuSe 25
Module Additive Manufacturing using Polymers		4	6		6/Σ					
Additive Manufacturing using Polymers	S 7985	4S/P	6	K od. M	1	ben.	MP	Steuernagel		X
Module Applied Computational Engines		4	6		6/Σ					
Applied Computational Engines	S 1634	3V/1Ü	6	K od. M	1	ben.	MP	Ehlers		X
Homework to Applied Computational Engines		0	0	HA	0	unben.	PV	Ehlers		X
Module Design for Industry 4.0		4	6		6/Σ					
Design for Industry 4.0	S 8183	2V	3	K od. M	2/5	ben.	MTP	Inkermann		X
Lab Design for Industry 4.0	S 8161	2P	3	PA	3/5	ben.	MTP	Inkermann		X

Module Laser Sensors		4	6		6/Σ					
Laser Sensors	W 8935	4V/Ü	6	K od. M	1	ben.	MP	Rembe	X	
Module Intelligent Forming Systems		4	6		6/Σ					
Intelligent Forming Systems	W 7948	4V/P	6	PA	1	ben.	MP	Buhl	X	
Module Fundamentals of Systems Engineering		4	6		6/Σ					
Fundamentals of Systems Engineering	W 8181	2V/1Ü/ 1P	6	PA	1	ben.	MP	Inkermann	X	
Module Sustainable Industrial Ecosystems		4	6		6/Σ					
Sustainable and Circular Supply Chain Perspective	S 6204	2 V	3	SL	1	ben.	MP	Melkonyan- Gottschhalk		X
Business Model Innovations for Circularity and Sustainability	S 6205	1V/ 1P	3							X
Module System Identification (+)		4	6		6/Σ					
System Identification (+)	W 8932	3V/1Ü	6	K od. M	1	ben.	MP	Bohn	X	

Elective module catalog „Manufacturing Analytics and Optimization“

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<i>Title of the module or lecture</i>	<i>LV-No.</i>	<i>LV-Type, SWS</i>	<i>CP</i>	<i>Exam form</i>	<i>Weighting</i>	<i>Graded ?</i>	<i>Exam type</i>	<i>Responsible examiner</i>	WiSe 24/25	SuSe 25
Module Statistical Data Science		4	6		6/Σ					
Statistical Data Science	S 0425	3V/1Ü	6	K od. M	1	ben.	MP	Säfken		X
Homework to Statistical Data Science		0	0	HA	0	unben.	PV	Säfken		X
Module Optimization in Engineering		4	6		6/Σ					
Optimization in Engineering	S 8418	3V+1Ü	6	K od. M	1	ben.	MP	Bremer		X
Module Product Data Management in Industry 4.0		4	6		6/Σ					
Product Data Management in Industry 4.0	S 8184	1V	1	K od. M	1/5	ben.	MTP	Inkermann		X
Lab Product Data Management in Industry 4.0	S 8188	3P	5	PA	4/5	ben.	MTP	Inkermann		X
Module Simulation Engineering		4	6		6/Σ					
Simulation Engineering	W 1269	3V/1Ü	6	K od. M	1	ben.	MP	Durak	X	
Homework to Simulation Engineering		0	0	HA	0	unben.	PV	Durak	X	
Module Fundamentals of Systems Engineering		4	6		6/Σ					
Fundamentals of Systems Engineering	W 8181	2V/1Ü/ 1P	6	PA	1	ben.	MP	Inkermann	X	
Module Digital Entrepreneurship		4	6		6/Σ					
Digital Entrepreneurship	S 6797	4V/Ü		K od. M	1	ben.	MP	Niemand		X

Elective module catalog „Interdisciplinary and Cross-Culture Collaboration “

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<i>Title of the module or lecture</i>	<i>LV-No.</i>	<i>LV-Type, SWS</i>	<i>CP</i>	<i>Exam form</i>	<i>Weighting</i>	<i>Graded ?</i>	<i>Exam type</i>	<i>Responsible examiner</i>	WiSe 24/25	SuSe 25
Wirtschaftsenglisch I (Business English I)	W/S 9096	2Ü	2	K od. M	1/3	ben.	LN	Böhlefeld	X	X
Chinesisch I (Chinese for Beginners)	W 9200	4V	4	K od. M	2/3	ben.	LN	Cholewa	X	
Intercultural Competence	W/S 9221	2Ü	2	K od. M	1/3	ben.	LN	Böhlefeld	X	X
Technical Writing	W/S 9009	2Ü	2	ThA	1/3	ben.	LN	Schulze-Bentrop	X	X
Technical Presentations in English	W/S 9092	2Ü	2	K od. M	1/3	ben.	LN	Gür	X	X
Technisches Englisch (Technical English)	W/S 9000	4V	4	K od. M	2/3	ben.	LN	Schulze-Bentrop	X	X

Explanatory Notes:

(1) Type of Course:

E	Excursion [Exkursion]
P	Practical Course [Praktikum]
S	Seminar [Seminar]
T	Tutorial Lecture [Tutorium]
V	Lecture [Vorlesung]
Ü	Exercise [Übung]

(2) Examination Form:

K	Written Exam [Klausur]
M	Oral examination [mündliche Prüfung]
SL	Seminar performance [Seminarleistung]
PrA	Practical Work [Praktische Arbeit]
SA	Seminar Thesis [Studienarbeit]
PA	Project Thesis [Projektarbeit]
HA	Homework [Hausübungen]
Ex	Excursion [Exkursion]
Ab	Final Thesis [Abschlussarbeit]

3) Type of Examination:

LN	Certificate of performance [Leistungsnachweis]
MP	Module exam [Modulprüfung]
MTP	Module-part exam [Modulteilprüfung]
PV	Prerequisite [Prüfungsvorleistung]

(4) Further Abbreviations:

ben.	Graded performance [benotet Leistung]
unben.	Ungraded performance [unbenotet Leistung]
od.	or [oder]
LV	Course [Lehrveranstaltung]
Prüf.	Examination [Prüfung]
CP	Credit points
AFB	Regulatory statutes [Ausführungsbestimmungen]
SWS	Semester hours per week [Semesterwochenstunden]