

TUM Informatics Master – Modules offered in WS21/22 by area

This list is not official, might be incomplete or have errors, use with care!

I created this list by matching modules from TUMonline that will actually be offered with the list of elective modules. I only included lectures (VO) and lectures with integrated exercises (VI). There may be errors: For example, new courses might be missing if they are not yet associated with the correct curriculum on TUMonline.

Elective Modules of the Area "Algorithms" (ALG):

ID	Title	Term	Contact Hours	ECTS	Language	THEO
IN2211	Auction theory and market design	WS	2V+2Ü	5	EN	THEO
IN2229	Computational Social Choice	WS	3V+2Ü	6	EN	THEO
IN2003	Efficient Algorithms and Data Structures	WS	4V+2Ü	8	EN	THEO
IN2360	Advanced Algorithms	WS	3V+2Ü	6	DE/EN	

Elective Modules of the Area "Computer Graphics and Vision" (CGV):

ID	Title	Term	Contact Hours	Credits	Language	THEO
IN2354	3D Scanning & Motion Capture	WS/SS	2V+1Ü+1P	6	EN	
IN2015	Image Synthesis	WS	4V	5	EN	
IN2375	Computer Vision III: Detection, Segmentation, and Tracking	WS	2V+2Ü	6	EN	
IN2133	Principles of Computer Vision	WS	3V	4	EN	
IN2124	Basic Mathematical Methods for Imaging and Visualization	WS	2V+2Ü	5	EN	
IN2392	Machine Learning for 3D Geometry	SS	2V+1Ü+1P	6	EN	
IN0037	Game Physics	WS	3V+2Ü	6	EN	
IN2026	Visual Data Analytics	WS	3V+1Ü	5	EN	
ID	Title	Term	Contact Hours	Credits	Language	THEO
IN2389	Advanced Deep Learning for Computer Vision: Dynamic Vision	WS/SS	2V+3P	8	EN	
IN2390	Advanced Deep Learning for Computer Vision: Visual Computing	WS/SS	2V+3P	8	EN	

Elective Modules of the Area "Databases and Information Systems" (DBI):

ID	Title	Term	Contact Hours	Credits	Language	THEO
----	-------	------	---------------	---------	----------	------

Modules by Master Areas

IN2219	Query Optimization	WS	3V+2Ü	6 EN
--------	--------------------	----	-------	------

Elective Modules of the Area "Digital Biology and Digital Medicine" (DBM):

ID	Title	Term	Contact Hours	Credits	Language	THEO
IN2286	Image Guided Surgery	SS	2V+2P	6	EN	
IN2021	Computer Aided Medical Procedures	WS	4V	6	EN	
IN2292	Introduction to Surgical Robotics	WS	2V+2P	6	EN	
IN2293	Medical Augmented Reality	WS	2V+2Ü	5	EN	
IN2291	Protein Prediction II for Computer Scientists	WS	4V+2Ü	8	EN	
IN2344	Statistical Methods for Systems Genetics	WS	2V+2Ü	5	EN	

Elective Modules of the Area "Engineering Software-intensive Systems" (SE):

ID	Title	Term	Contact Hours	Credits	Language	THEO
IN2309	Advanced Topics of Software Engineering	WS	4V+2Ü	8	DE/EN	
IN2372	Introduction to Large-Scale Agile Software Development	WS	2V	3	EN	
IN2385	Safety and Security for Cyber-Physical Systems	WS	2V	3	EN	
IN2081	Patterns in Software Engineering	WS	2V+2Ü	5	EN	
IN2235	Software Engineering in an Industrial Setting	WS	2V	3	DE	
IN2089	Strategic IT Management	WS	2V	3	DE	

Elective Modules of the Area "Formal Methods and their Applications" (FMA):

ID	Title	Term	Contact Hours	Credits	Language	THEO
IN2041	Automata and Formal Languages	WS	4V+2Ü	8	EN	THEO
IN2113	Programming Languages	WS	2V+2Ü	5	DE/EN	
IN2053	Program Optimization	WS	4V+2Ü	8	EN	THEO
IN2340	Quantitative Verification	WS	3V+1Ü	5	EN	THEO
IN2055	Semantics	WS	4V+2Ü	8	EN	THEO
ID	Title	Term	Contact Hours	Credits	Language	THEO

Modules by Master Areas

IN2358	Lambda Calculus	unreg	2V+2Ü	5 EN	THEO
--------	-----------------	-------	-------	------	------

Elective Modules of the Area "Machine Learning and Analytics" (MLA):

ID	Title	Term	Contact Hours	Credits	Language	THEO
IN2346	Introduction to Deep Learning	SS	2V+2Ü	6 EN		
IN2395	Legal Data Science and Informatics	WS/SS	4V	6 EN		
IN2361	Natural Language Processing	WS	4V	6 EN		
IN2349	Advanced Deep Learning for Robotics	SS	2V+2P	6 EN		

ID	Title	Term	Contact Hours	Credits	Language	THEO
IN2028	Business Analytics and Machine Learning	WS	2V+2Ü	5 EN		
IN2339	Data Analysis and Visualization in R	WS	2V+4Ü	6 EN		
IN2030	Data Mining and Knowledge Discovery	WS	2V	3 EN		

ID	Title	Term	Contact Hours	Credits	Language	THEO
IN2064	Machine Learning	WS	4V+2Ü	8 EN		

Elective Modules of the Area "Computer Architecture, Computer Networks and Distributed Systems" (RRV):

ID	Title	Term	Contact Hours	Credits	Language	THEO
IN2324	Connected Mobility Basics	WS	4V+2Ü	8 EN		
IN2097	Advanced Computer Networking	WS	3V+1Ü	5 EN		
IN2315	Network Coding	WS	3V+2Ü	6 DE/EN		THEO
IN2076	Advanced Computer Architecture	WS	4V	6 EN		
IN2259	Distributed Systems	WS	3V+1Ü	5 EN		
IN2125	Virtualization Techniques	WS	2V+2Ü	5 EN		

Elective Modules of the Area "Robotics" (ROB):

ID	Title	Term	Contact Hours	Credits	Language	THEO
IN2060	Real-Time Systems	WS	3V+2Ü	6 DE/EN		
IN2062	Techniques in Artificial Intelligence	WS	3V+1Ü	5 DE/EN		

Modules by Master Areas

IN2067	Robotics	WS	3V+2Ü	6 EN
IN2068	Sensor-based Robotic Manipulation and Locomotion	WS	2V	3 EN
IN2071	Knowledge-based Systems for Industrial Applications	WS	3V	4 EN

Elective Modules of the Area "Security and Privacy" (SP):

ID	Title	Term	Contact Hours	Credits	Language	THEO
IN2209	IT Security	WS	4V+1Ü	7	DE	
IN2101	Network Security	WS	3V+1Ü	5	EN	

Elective Modules of the Area "Scientific Computing and High Performance Computing" (HPC):

ID	Title	Term	Contact Hours	Credits	Language	THEO
IN2381	Introduction to Quantum Computing	unreg	2V+2Ü	5	EN	THEO
IN2252	High Performance Computing σ Algorithms and Applications	WS	2V+1Ü	4	DE/EN	THEO
IN2012	Parallel Numerics	WS	2V+2Ü	5	EN	THEO
IN2311	Turbulent Flow Simulation on HPC-Systems	WS	2V+1Ü	5	EN	THEO

Elective Modules not Assigned to any Area:

ID	Title	Term	Contact Hours	Credits	Language	THEO
IN2093	eLearning - Techniques and Infrastructures	WS	2V	3	DE/EN	

Modules present in TUMonline, but not yet mentioned above:

IN9048	Innovation Generation in The Healthcare Domain
IN3300	Selected Topics in Distributed Systems, Computer Networks, and Security
IN0009	Basic Principles: Operating Systems and System Software
IN2189	Computer Architecture and Networks
IN0015	Discrete Structures
IN2093	eLearning - Techniques and Infrastructures
IN0003	Functional Programming and Verification
IN2157	Fundamental Algorithms (CSE)
IN0008	Fundamentals of Databases
IN0004	Introduction to Computer Architecture
IN0001	Introduction to Informatics
IN2369	Machine Vision
IN0019	Numerical Programming