

Course catalog Master in Management and Technology

In accordance with the

Qualifying Examination and Study Regulations for the Master's Degree Program in Management and Technology (TUM-BWL) at the Technical University of Munich

dated June 21, 2017

as amended by the 3rd amending statutes of April 27, 2022

**For informative use only. Only the German version has legal validity. Please
note the course catalog is only exemplary.**

II. Examination Modules

Specialization in Management

One of the following seven specializations in management can be chosen. If no specialization is chosen, a total of 24 credits should be acquired in electives chosen from the following provided examples of the different specializations. Furthermore, any seminar of the Advanced Seminars at the TUM school of management must be successfully completed in the scope of at least 6 credits.

Innovation & Entrepreneurship

In the specialization Innovation & Entrepreneurship a seminar of the Advanced Seminars Innovation & Entrepreneurship must be successfully completed in the scope of at least 6 credits.

Within the specialization Innovation & Entrepreneurship, further elective modules amounting to a total of 24 credits from a supplementary elective catalogue must also be successfully completed. The supplementary elective catalogue will be announced by the TUM School of Management in a suitable form and in good time before the start of lectures.

Module no.	Module name	Type of module	Teaching method SWS/ V Ü P	Sem. *	SWS	Credits	Type of examination, weighting ratio	Duration of examination	Language of instruction
	Innovation- & Entrepreneurship (IE)								
WIB18812_1	Advanced Seminar Innovation & Entrepreneurship: Ideation and Venture Creation	Elective	4 Se	1.-4. Sem.	4	6 Credits	Research paper	n.a.	English
WIB26995	Advanced Seminar Innovation & Entrepreneurship: strategic Entrepreneurship	Elective	4 Se	1.-4. Sem.	4	6 Credits	Research paper	n.a.	English
WI000116	Lead-User-Project	Elective	4 Se	1.-4. Sem.	4	6 Credits	Project work	n.a.	German/ English
WI001166	Advanced Topics in Innovation & Entrepreneurship: Entrepreneurial Prototyping	Elective	4 Se	1.-4. Sem.	4	6 Credits	Research paper	n.a.	German/ English
MW2245	Think. Make. Start.	Elective	4 Pr	1.-4. Sem.	4	6 Credits	Project work	n.a.	English
WI001291	Competition Law and Entrepreneurial Strategies	Elective	4 V	1.-4. Sem.	4	6 Credits	Written exam	120 min.	English
WI001147	Exploring society through future technologies	Elective	4 Se	1.-4. Sem.	4	6 Credits	Research paper	n.a.	English
WI100180	Business Plan - Advanced Course (Business Models, Sales and Finance)	Elective	4 Se	1.-4. Sem.	4	6 Credits	Research paper	n.a.	German
WI001286	Innovation Management Tools and Methods	Elective	4 Se	1.-4. Sem.	4	6 Credits	Project work	n.a.	English
WIB26001	Advanced Topics in Innovation & Entrepreneurship: Social Entrepreneurship Lab	Elective	4 Se	1.-4. Sem.	4	6 Credits	Essay + presentation	n.a.	German/ English

Management & Marketing

In the specialization of Management & Marketing, one of the seminars offered within the framework of the Advanced Seminars Management & Marketing must be successfully completed in the amount of at least 6 credits.

Within the specialization Management & Marketing, further elective modules amounting to a total of 24 credits from a supplementary elective catalogue must also be successfully completed. The supplementary elective catalogue will be announced by the TUM School of Management in an appropriate way and in good time before the start of lectures.

Module no.	Module name	Type of module	Teaching method SWS/ V Ü P	Sem.*	SWS	Credits	Type of examination, weighting ratio	Duration of examination	Language of instruction
	Management & Marketing								
WIB08001	Advanced Seminar Marketing, Strategy & Leadership: Advances in Consumer Research	Elective	4 Se	1.-4. Sem.	4	6 Credits	Presentation	n.a.	English
WI000817	Marketing Compliance	Elective	4 V	1.-4. Sem.	4	6 Credits	Written exam	120 min	German
WI001128	Strategies in MNEs	Elective	2 V + 2 Ü	1.-4. Sem.	4	6 Credits	Written exam	60 min	English
WI001140	Luxury Marketing	Elective	4 V	1.-4. Sem.	4	6 Credits	Presentation	n.a.	English
WI001116	Methods in Personnel Recruitment and Development	Elective	4 Se	1.-4. Sem.	4	6 Credits	Written exam	120 min	German/ English
WI000994	Negotiation Strategies	Elective	4 Se	1.-4. Sem.	4	6 Credits	Research paper	n.a.	German/ English
MGT001302	Customer Insights	Elective	4 V	1.-4. Sem.	4	6 Credits	Written exam	60 min.	English
WI001219	Online Marketing	Elective	2 V	1.-4. Sem.	2	3 Credits	Written exam	n.a.	English
WI001090	Behavioral Pricing: Insights, Methods, and Strategy	Elective	4 Se	1.-4. Sem.	4	6 Credits	Research paper	n.a.	English
MGT001243	Introduction to Statistics Using R	Elective	4 V	1.-4. Sem.	4	6 Credits	Research paper	n.a.	English
WI001167	Choice Architecture Applications in Consumer Behavior	Elective	2 Se	1.-4. Sem.	2	3 Credits	Presentation	n.a.	English

Operations & Supply Chain Management

In the specialization Operations & Supply Chain Management, one of the seminars offered in the Advanced Seminars Operations & Supply Chain Management must be successfully completed with at least 6 credits.

Within the specialization Operations & Supply Chain Management, additional elective modules amounting to a total of 24 credits from a supplementary elective catalogue must also be successfully completed. The supplementary elective catalogue will be announced by the TUM School of Management in a suitable way and in good time before the start of lectures.

Module no.	Module name	Type of module	Teaching method SWS/ V Ü P	Sem.*	SWS	Credits	Type of examination, weighting ratio	Duration of examination	Language of instruction
	Operations & Supply Chain Management								
WIB34001	Advanced Seminar Operations & Supply Chain Management	Elective	4 Se	1.-4. Sem.	4	6 Credits	Research paper	n.a.	English
WI000979	Inventory Management	Elective	4 VI	1.-4. Sem.	4	6 Credits	Written exam	90 min	English
WI000976	Logistics and Operations Strategy	Elective	4 VI	1.-4. Sem.	4	6 Credits	Written exam	90 min	English
WI200541	Planning and Scheduling of Complex Operations: Models, Methods and Applications	Elective	4 VI	1.-4. Sem.	4	6 Credits	Exercise performance	60 min	English
WI001034	Healthcare Operations Management	Elective	4 VI	1.-4. Sem..	4	6 Credits	Exercise performance	60 min	English
WI000836	Advanced Planning in Supply Chains - Illustrating the Concepts and methodology using SAP IBP	Elective	4 VI	1.-4. Sem.	4	6 Credits	Written exam	90 min.	English
WI100967	Designing and Scheduling Lean Manufacturing Systems	Elective	4 VI	1.-4. Sem.	4	6 Credits	Written exam	120 min	English
WI000819	Discrete Optimization	Elective	4 Se	1.-4. Sem.	4	6 Credits	Exercise performance	n.a.	English
WI001206	Modelling Future Mobility Systems	Elective	4 Se	1.-4. Sem.	4	6 Credits	Research paper	n.a.	English
WIB22001	Sustainable Supply Chain Management	Elective	4 VI	1.-4. Sem.	4	6 Credits	Research paper	n.a.	English

Finance & Accounting

In the Finance & Accounting specialization one of the seminars offered within the framework of the Advanced Seminars Finance & Accounting must be successfully completed in the amount of at least 6 credits.

Within the Finance & Accounting specialization further elective modules amounting to a total of 24 credits from a supplementary elective catalogue must also be successfully completed. The supplementary elective catalogue will be announced by the TUM School of Management in a suitable way and in good time before the start of lectures.

Module no.	Module name	Type of module	Teaching method SWS/ V Ü P	Sem.*	SWS	Credits	Type of examination, weighting ratio	Duration of examination	Language of instruction
	Finance & Accounting								
WIB23005	Advanced Seminar Finance & Accounting: Behavioral and Experimental Economics	Elective	4 Se	1.-4. Sem.	4	6 Credits	Research paper	n.a.	German/English
WI000232	Derivatives	Elective	2 V + 2 Ü	1.-4. Sem.	2	6 Credits	Written exam	90 min	English
WI000231	Asset Management	Elective	2 V + 2 Ü	1.-4. Sem.	4	6 Credits	Written exam	120 min	English
WI000998	Group Accounting and IFRS	Elective	4 VI	1.-4. Sem.	4	6 Credits	Written exam	120 min	English
WI000234	Value Based Management	Elective	2 V + 2 Ü	1.-4. Sem.	4	6 Credits	Written exam	120 min	English
WI000233	Management Accounting	Elective	2 V + 2 Ü	1.-4. Sem.	4	6 Credits	Written exam	120 min	German/English
WI001187	Private Equity	Elective	2 V + 2 Ü	1.-4. Sem.	4	6 Credits	Written exam	60 min	English
WI001089	Capital Markets Law	Elective	2 V	1.-4. Sem.	2	3 Credits	Written exam	60 min	English
WI001263	Alternative Investments	Elective	2 V + 2 Ü	1.-4. Sem.	4	6 Credits	Written exam	120 min	English
WI001087	Banking Law and Credit Collaterals	Elective	2 V	1.-4. Sem.	2	3 Credits	Written exam	60 min	English
WI001259	Behavioral Finance	Elective	4 VI	1.-4. Sem.	4	6 Credits	Written exam	60 min	English
WIB33002	Venture Capital Lab	Elective	4 Se	1.-4. Sem.	4	6 Credits	Research paper	n.a.	English

Economics & Econometrics

In the Economics & Econometrics specialization one seminar of the Economics & Econometrics Advanced Seminars must be successfully completed with at least 6 credits.

Within the Economics & Econometrics specialization, further elective modules amounting to a total of 24 credits from a supplementary elective catalogue must also be successfully completed. The TUM School of Management will announce the supplementary elective catalogue in a suitable way and in good time before the start of lectures.

Module no.	Module name	Type of module	Teaching method SWS/ V Ü P	Sem. *	SWS	Credits	Type of examination, weighting ratio	Duration of examination	Language of instruction
	Economics & Econometrics								
WIV05001	Advanced Seminar in Economics and Policy: Economics of innovation	Elective	4 Se	1.-4. Sem.	4	6 Credits	Research paper	n.a.	German/ English
WI000100	Advanced Microeconomics	Elective	4 VI	1.-4. Sem.	4	6 Credits	Written exam	120 min	German/ English
WI001145	Energy Economics	Elective	2 V + 2 Ü	1.-4. Sem..	4	6 Credits	Research paper	120 min	English
WI001221	International Trade I	Elective	2 V + 2 Ü	1.-4. Sem.	4	6 Credits	Research paper	n.a.	English
WI001220	Network Economics I	Elective	2 V + 2 Ü	1.-4. Sem.	4	6 Credits	Research paper	n.a.	English
WZ1561	Value Chain Economics	Elective	4 VI	1.-4. Sem.	4	6 Credits	Research paper	n.a.	English
WZ0041	Economics of Technology and Innovation	Elective	2 V + 2 Ü	1.-4. Sem.	4	5 Credits	Written exam	120 min	English
WI000258	Empirical Research in Management and Economics	Elective	4 VI	1.-4. Sem.	4	6 Credits	Written exam	120 min	English
WZ1705	Applied Statistics and Econometrics	Elective	2 V + 2 Ü	1.-4. Sem.	4	5 Credits	Written exam	120 min	English
WI001133	Advanced Seminar Economics & Policy: Strategic Interaction - in Theory, Lab, and Field	Elective	4 Se	1.-4. Sem.	4	6 Credits	Research paper	n.a.	German/ English
WI001250	Advanced Seminar Economics & Policy: Current Topics in Value Chain Economics	Elective	4 Se	1.-4. Sem.	4	6 Credits	Research paper	n.a.	German/ English

Energy Markets

In the specialization Energy Markets, a seminar of the Advanced Seminar Energy Markets must be successfully completed in the scope of at least 6 credits.

Within the Energy Markets specialization, further elective modules amounting to a total of 24 credits from a supplementary elective catalogue must also be successfully completed. The supplementary elective catalogue will be announced by the TUM School of Management in a suitable way and in good time before the start of lectures.

Module no.	Module name	Type of module	Teaching method SWS/ V Ü P	Sem. *	SWS	Credits	Type of examination, weighting ratio	Duration of examination	Language of instruction
	Energy Markets								
WIB29001	Advanced Seminar Energy Markets: Electricity Market Economics	Elective	4 Se	1.-4. Sem.	4	6 Credits	Research paper	n.a.	German/ English
WI000992	Energy Trading	Elective	2 V + 2 Ü	1.-4. Sem.	4	6 Credits	Written exam	60 min	English
WI000946	Energy Markets I	Elective	2 V + 2 Ü	1.-4. Sem.	4	6 Credits	Written exam	60 min	English
WI001125	Energy Markets II	Elective	2 V + 2 Ü	1.-4. Sem.	4	6 Credits	Written exam	60 min	English
WI001223	Challenges in Energy Markets	Elective	2 V	1.-4. Sem.	2	3 Credits	Written exam	60 min	German/ English
WI001254	Advanced Seminar Energy Markets: Economics of Energy and Technology	Elective	4 Se	1.-4. Sem.	4	6 Credits	Research paper	n.a.	German/ English
WI001145	Energy Economics	Elective	2 V+ 2 Ü	1.-4. Sem.	4	6 Credits	Written exam	120 min	English
WI001227	Network Economics II	Elective	2 V+ 2 Ü	1.-4. Sem.	4	6 Credits	Research paper	n.a.	English
WI001220	Network Economics I	Elective	2 V+ 2 Ü	1.-4. Sem.	4	6 Credits	Research paper	n.a.	English

Life Sciences Management & Policy

In the specialization Life Sciences Management & Policy a seminar of the Advanced Seminars Life Sciences Management & Policy must be successfully completed in the scope of at least 6 credits.

Within the Life Sciences Management & Policy specialization, further elective modules amounting to a total of 24 credits from a supplementary elective catalogue must also be successfully completed. The supplementary elective catalogue will be announced by the TUM School of Management in a suitable way and in good time before the start of lectures.

Module no.	Module name	Type of module	Teaching method SWS/ V Ü P	Sem.*	SWS	Credits	Type of examination, weighting ratio	Duration of examination	Language of instruction
	Life Sciences Management & Policy								
WIB14002	Advanced Seminar Life Sciences & Management: Sustainable Entrepreneurship – Theoretical Foundations	Elective	4 Se	1.-4. Sem.	4	6 Credits	Research paper	180 min.	English
WI000836	Advanced Planning in Supply Chains - Illustrating the Concepts Using an SAP IBP	Elective	4 VI	1.-4. Sem.	4	6 Credits	Written exam	90 min.	English
WI000948	Food Economics	Elective	4 VI	1.-4. Sem.	4	6 Credits	Written exam	60 min	English
WI100311	Food & Agribusiness Marketing	Elective	4 Se	1.-4. Sem.	4	6 Credits	Research paper	n.a.	German/ English
WI000926	International Environmental Governance and Conflict Management	Elective	4 V	1.-4. Sem.	3	5 Credits	Research paper	n.a.	English
WZ1467	Current challenges in the management in the agriculture, building materials and energy industry	Elective	4 V	1.-4. Sem.	4	5 Credits	Oral exam	30 min.	German
WZ1561	Value Chain Economics	Elective	4 VI	1.-4. Sem.	4	5 Credits	Research paper	n.a.	English
WZ1700	Agribusiness Governance	Elective	2 V + 2 Ü	1.-4. Sem.	4	5 Credits	Written exam	90 min.	English
WZ1705	Applied Statistics and Econometrics	Elective	2 VO + 2 Ü	1.-4. Sem.	4	5 Credits	Written exam	120 min.	English
WI000739	Consumer Behavior	Elective	4 VI	1.-4. Sem.	4	6 Credits	Written exam	120 min.	English

WZ1564	Econometric Impact Analysis	Elective	4 V	1.-4. Sem.	4	6 Credits	Exercise performance	60 min.	English
WI001194	Who is responsible for food and health? Social and cultural perspective on food, health, and technology	Elective	2 Se	1.-4. Sem.	4	6 Credits	Research paper	n.a.	English

Specialization in Technology

Each student must choose an engineering or a natural science specialization and successfully complete modules amounting to 30 credits. Depending on the chosen engineering/scientific specialization the regulations of that subject apply.

Mechanical Engineering

Depending on their previous knowledge, students can choose basic modules or advanced modules in mechanical engineering.

Within the selected competence module catalogue, modules amounting to at least 30 credits from an elective module offer must be successfully completed. This exemplary elective module catalogue will be continuously updated, the current elective module catalogue will be announced by the TUM School of Management in a suitable way and in good time before the start of lectures.

Students who have already successfully completed their Bachelor's degree in Mechanical Engineering, can only choose the major modules in Mechanical Engineering.

Module no.	Module name	Type of module	Teaching method SWS/ V Ü P	Sem. *	SWS	Credits	Type of examination , weighting ratio	Duration of examination	Language of instruction
	Mechanical Engineering basic modules (minor)								
MW2016	Basics of Machines Drawing and Computer Aided Design 1	Elective	1 V + 1 Ü + 1 PR	1.-4. Sem.	2	2 Credits	Exercise performances	n.a.	German
MW2013	Basics of Machines Drawing and Computer Aided Design 2	Elective	1 V + 1 Ü + 1 PR	1.-4. Sem.	2	2 Credits	Exercise performances , written exam	90 min	German
MW1108	Engineering Mechanics for Technology Management	Elective	2 V + 2 Ü	1.-4. Sem.	4	6 Credits	Written exam	120 min	German
MW1694	Machine Elements – Basics, Manufacturing, Application	Elective	2 V + 3 Ü	1.-4. Sem.	5	7 Credits	Written exam	120 min	German
BV350007	Materials in Mechanical Engineering	Elective	4 VI	1.-4. Sem.	4	6 Credits	Written exam	90 min	German
MW2021	Fluid Mechanics I	Elective	3 V + 3 Ü	1.-4. Sem.	4	5 Credits	Written exam	90 min	German
MW1903	Bioprocess Engineering	Elective	3 V	1.-4. Sem.	3	5 Credits	Written exam	90 min	German
MW1918	Industrial Software Engineering	Elective	2 V + 1 Ü	1.-4. Sem.	3	5 Credits	Written exam	90 min	German
MW1932	Basics of Casting and Metal Forming	Elective	3 V	1.-4. Sem.	3	5 Credits	Written exam	90 min	German
MW2015	Basics of Thermodynamics	Elective	3 V + 2 Ü + 2 Ü	1.-4. Sem.	5	6 Credits	Written exam	120 min	German
MW2156	Metal-cutting Manufacturing Processes	Elective	2 V + 1 Ü	1.-4. Sem.	3	5 Credits	Written exam	90 min	German
MW2022	Automatic Control	Elective	3 V + 2 Ü + 2 Ü + 1 Ü + 1 Ü	1.-4. Sem.	5	5 Credits	Written exam	90 min	German

	Mechanical engineering advanced modules (major)								
MW1921	Material Flow and Logistics	Elective	2 V + 1 Ü	1.-4. Sem	3	5 Credits	Written exam	90 min	German
MW0102	Production Ergonomics	Elective	2 V + 1 Ü	1.-4. Sem	3	5 Credits	Written exam	90 min	German
MW0068	Material Flow Systems	Elective	2 V + 1 Ü	1.-4. Sem	3	5 Credits	Written exam	90 min	German
MW0097	Layout Planning of Logistical Systems	Elective	3 V + 1 Ü	1.-4. Sem	3	5 Credits	Written exam	90 min	German
MW2129	Ergonomics	Elective	2 V + 1 Ü	1.-4. Sem	n.a.	5 Credits	Written exam	90 min	German
MW0049	Joining Technologies	Elective	2 V + 1 Ü	1.-4. Sem	3	5 Credits	Written exam	90 min	German
MW0010	System Engineering for Vehicle Drive Lines	Elective	3 VI	1.-4. Sem	3	5 Credits	Written exam	90 min	German
MW1911	Basics of Motor Vehicle Construction	Elective	3 V	1.-4. Sem	3	5 Credits	Written exam	90 min	German
MW1919	Lightweight Structures	Elective	2 V + 1 Ü	1.-4. Sem	3	5 Credits	Written exam	90 min	German
MW0101	Product Ergonomics	Elective	2 V + 1 Ü	1.-4. Sem	3	5 Credits	Written exam	90 min	German
MW2023	Heat Transfer Phenomena	Elective	2 V + 1 Ü	1.-4. Sem	3	4 Credits	Written exam	90 min	German
MW2244	Energy from Biomass and Residuals with Seminar	Elective	2 V + 1 Ü	1.-4. Sem	3	5 Credits	Oral examination	30 min	German
MW2428	Solar Engineering	Elective	2 V + 1 Ü	1.-4. Sem	3	6 Credits	Written exam	90 min	German

Informatics

Depending on their previous knowledge, students can choose basic modules or advanced modules in computer science.

Within the selected competence module catalog, modules amounting to at least 30 credits from an elective module offer must be successfully completed. This exemplary elective module catalog will be continuously updated, the current elective module catalog will be announced by the TUM School of Management in a suitable way and in good time before the start of lectures.

Students who have already successfully completed the engineering/scientific subject of informatics in the bachelor's program can only choose the major modules in informatics.

Module no.	Module name	Type of module	Teaching method SWS/ V Ü P	Sem.*	SWS	Credits	Type of examination, weighting ratio	Duration of examination	Language of instruction
	Informatics basic modules (minor)								
IN0001	Introduction to Informatics 1	Elective	4 V	1.-4. Sem.	4	6 Credits	Written exam	120 min	German
IN8024	Information Management for Digital Business Models	Elective	4 VI	1.-4. Sem.	4	6 Credits	Written exam	90min	German/ English
IN0004	Introduction to Computer Organization and Technology – Computer Architecture	Elective	4 V + 2 Ü	1.-4. Sem.	6	8 Credits	Written exam	120 min	German
IN0002	Fundamentals of Programming (Exercises & Laboratory)	Elective	4 PR	1.-4. Sem.	4	6 Credits	Exercise performance	n.a.	German
IN0006	Introduction to Software Engineering	Elective	3 V + 2 Ü	1.-4. Sem.	5	6 Credits	Written exam	90 min	German
IN0009	Basic Principles: Operating Systems and System Software	Elective	3 V + 2 Ü	1.-4. Sem.	5	6 Credits	Written exam	90 min	German
IN0008	Fundamentals of Databases	Elective	3 V + 2 Ü	1.-4. Sem.	5	6 Credits	Written exam	90 min	German
IN0003	Introduction to Informatics 2	Elective	2 V + 2 Ü	1.-4. Sem.	4	5 Credits	Written exam	120 min	German
IN2113	Programming Languages	Elective	2 V + 2 Ü	1.-4. Sem.	4	5 Credits	Written exam	90 min	German/ English
IN0042	IT Security	Elective	4 V + 1 Ü	1.-4. Sem.	5	5 Credits	Written exam	60 min	German

Module no.	Module name	Type of module	Teaching method SWS/ V Ü P	Sem.*	SWS	Credits	Type of examination, weighting ratio	Duration of examination	Language of instruction
	Informatics advanced modules (major)								
IN0010	Introduction to Computer Networking and Distributed Systems	Elective	3 V + 2 Ü	1.-4. Sem.	5	6 Credits	Written exam	90 min	German
IN2028	Business Analytics	Elective	2 V + 2 Ü	1.-4. Sem.	4	5 Credits	Written exam	90 min	English
IN2031	Application and Implementation of Database Systems	Elective	3 V + 2 Ü	1.-4. Sem.	5	6 Credits	Written exam	90 min	German
IN2040	Virtual Machines	Elective	3 V + 2 Ü	1.-4. Sem.	5	6 Credits	Written exam	90 min	English
IN2062	Techniques in Artificial Intelligence	Elective	3 V + 1 Ü	1.-4. Sem.	4	5 Credits	Written exam	90 min	German/English
IN2067	Robotics	Elective	3 V + 2 Ü	1.-4. Sem.	5	6 Credits	Written exam	90 min	English
IN2076	Advanced Computer Architecture	Elective	4 V	1.-4. Sem.	4	6 Credits	Written exam	90 min	English
IN2089	Strategic IT Management	Elective	2 S	1.-4. Sem.	2	3 Credits	Written exam	75 min	German
IN2101	Network Security	Elective	4 VI	1.-4. Sem.	4	5 Credits	Written exam	75 min	English
IN2222	Cognitive Systems	Elective	3 VI	1.-4. Sem.	4	5 Credits	Written exam	75 min	English
IN2309	Advanced Topics of Software Engineering	Elective	4 V + 2 Ü	1.-4. Sem.	6	8 Credits	Written exam	100 min	German/English

Chemistry

Depending on their previous knowledge, students can choose basic modules or advanced modules in chemistry.

In the competence module Catalog "Basic Modules (minor)" 18 credits in the compulsory area and at least 12 credits from the elective area must be successfully completed.

In the Competence Module Catalog Major, modules of at least 30 credits from the elective modules must be successfully completed. This exemplary elective module catalog is continuously updated, the current elective module catalog is announced by the TUM School of Management in a suitable way and in good time before the start of lectures.

Students who have already successfully completed the bachelor's degree course in engineering or natural sciences in chemistry can only choose the major modules in chemistry.

Module no.	Module name	Type of module	Teaching method SWS/ V Ü P	Sem.*	SWS	Credits	Type of examination, weighting ratio	Duration of examination	Language of instruction
	Chemistry basic modules (minor)								
	Compulsory modules								
CH6202	General and Inorganic Chemistry	Compulsory	2 V + 1 Ü	1.-4. Sem.	4	6 Credits	Written exam	90 min	German
CH1090	Introduction to Organic Chemistry	Compulsory	3 V + 1 Ü	1.-4. Sem.	4	6 Credits	Written exam	90 min	German
CH1091	Basic Principles of Physical Chemistry 1	Compulsory	3 V + 1 Ü	1.-4. Sem.	4	6 Credits	Written exam	90 min	German
	Elective modules								
CH0106	Biology for Chemists	Elective	3 VI	1.-4. Sem.	3	6 Credits	Written exam	90 min	German
CH1123	Chemical Engineering for TUM-BWL	Elective	4 V	1.-4. Sem.	4	6 Credits	Written exam	120 min	German/ English
CH0107	Analytical Chemistry	Elective	2 V	1.-4. Sem.	2	3 Credits	Written exam	60 min	German
CH0999	Chemistry Software and Databases for TUM-BWL	Elective	2 VI	1.-4. Sem.	2	3 Credits	Written exam	60 min	German
CH0124	Toxicology and Legal Studies for Chemists	Elective	2 V	1.-4. Sem.	2	3 Credits	Written exam	90 min	German
CH4107	Inorganic Solid State and Organometallic Chemistry	Elective	3 V+ 1 Ü	1.-4. Sem.	4	5 Credits	Written exam	90 min	German
CH4103	Molecular Inorganic Chemistry	Elective	3 V+ 1 Ü	1.-4. Sem.	4	5 Credits	Written exam	90 min	German
CH4117	Biochemistry	Elective	2 V + 1 Ü	1.-4. Sem.	2	5 Credits	Written exam	90 min	German

Module no.	Module name	Type of module	Teaching method SWS/ V Ü P	Sem.*	SWS	Credits	Type of examination	Duration of examination	Language of instruction
	Chemistry advanced modules (major)								
CH4107	Inorganic Solid State and Organometallic Chemistry	Elective	2 V + 2 Ü	1./3. Sem.		5 Credits	Written exam	90 min	German
CH3153	Construction Chemicals I	Elective	2 V + 1 PR	1.-4. Sem.	3	5 Credits	Written exam	90 min	German
CH4103	Molecular Inorganic Chemistry	Elective	3 V + 1 Ü	1.-4. Sem.	4	5 Credits	Written exam	90 min	German
CH1019	Laboratory Course in Chemical Engineering	Elective	2 PR	1.-4. Sem.	3	3 Credits	Laboratory performance	n.a.	German
CH0124	Toxicology and Legal studies for Chemists	Elective	2 V	1.-4. Sem.	2	3 Credits	Written exam	90 min	German
CH4117	Biochemistry	Elective	2 V + 1 Ü	1.-4. Sem.	3	5 Credits	Written exam	90 min	German
CH6204	Material Flows in Industry and Nature	Elective	2 V	1.-4. Sem.	2	3 Credits	Project work	n.a.	German
CH4115	Advanced Analytical Techniques	Elective	4 V	1.-4. Sem.	4	5 Credits	Written exam	90 min	German
CH3154	Nano Materials	Elective	2 V + 1 PR	1.-4. Sem.	3	5 Credits	Written exam	90 min	German
CH0226	Molecular Medicine	Elective	2 V + 1 Se	1.-4. Sem.	3	5 Credits	Written exam	90 min	German
CH3037	Molecular Biotechnology	Elective	2 V + 1 Se	1.-4. Sem.	3	5 Credits	Written exam	90 min	German
CH0867	Food Chemistry I	Elective	2 V + 1 Ü	1.-4. Sem.	3	5 Credits	Written exam	90 min	German
CH3095	Industrial Chemical Processes II - Petrochemical Processes	Elective	3 VI	1.-4. Sem.	3	5 Credits	Written exam	90 min	German
CH3094	Industrial Chemical Processes I - Refining	Elective	3 VI	1.-4. Sem.	3	5 Credits	Written exam	90 min	German
CH5108	Industrial Relevant Activation of Small Molecules	Elective	2 V	1.-4. Sem.	3	5 Credits	Written exam	90 min	German
CH0115	Reactivity of Organic Compounds	Elective	3 V + 1 Ü	1.-4. Sem.	4	5 Credits	Written exam	90 min	German

Electrical Engineering and Information Technology

Depending on their previous knowledge, students can choose basic modules or advanced modules in electrical engineering and information technology.

In the competence module catalog basic modules (minor) at least 10 credits from elective area 1 and at least 20 credits from elective area 2 have to be successfully completed.

One of the two specializations ("Electrical Engineering and Information Technology" or "Information Technology and Electronics") must be selected in the competence module catalogue major. In the chosen specialization, modules of at least 30 credits must be successfully completed. This exemplary catalog of elective modules will be continuously updated, the current catalog of elective modules will be announced by the TUM School of Management in a suitable way and in good time before the start of lectures.

Students who have already successfully completed the electrical engineering and information technology engineering subject in the bachelor's program can only choose the advanced modules (majors) in information technology and electronics or energy technology.

Module no.	Module name	Type of module	Teaching method SWS/ V Ü P	Sem.*	SWS	Credits	Type of examination	Duration of examination	Language of instruction
	Electrical engineering and information technology								
	Basic modules (minor)								
	Elective field 1 (10 credits)								
EI29821	Principles of Information Engineering	Elective	4 V	1.-4. Sem.	3	5 Credits	Written exam	75 min	German
EI10002	Principles in Electrotechnology	Elective	3 V + 1 Ü	1.-4. Sem.	4	6 Credits	Written exam	90 min	English
EI1289	Electrical Engineering (LB-BF-MT)	Elective	3 VI	1.-4. Sem.	3	5 Credits	Written exam	90 min	German
	Elective field 2 (20 credits)								
EI10003	Analog Electronics	Elective	2 V + 1 Ü	1.-4. Sem.	3	5 Credits	Written exam	90 min	English
EI2986	Telecommunication I – Signal Representation	Elective	3 VI	1.-4. Sem.	3	5 Credits	Written exam	75 min	German
EI0625	Communication Networks	Elective	4 VI	1.-4. Sem.	4	5 Credits	Written exam	90 min	German/English
EI3199	Laboratory Analog Electronics for TUM-BWL	Elective	4 Pr	1.-4. Sem.	4	5 Credits	Research Paper	n.a.	German/English
EI4802	Basics of High-Frequency Engineering	Elective	4 VI	1.-4. Sem.	4	5 Credits	Written exam	90 min	German/English
EI2988	Telecommunication II	Elective	3 VI	1.-4. Sem.	3	5 Credits	Written exam	k.A.	German/English
EI1286	Devices and Installations in Electrical Power Systems	Elective	3 VI	1.-4. Sem.	3	5 Credits	Written exam	30 min	German/English
EI05551	Internet Communication	Elective	5 VI	1.-4. Sem.	4	6 Credits	Written exam + Exercise (3:2)	75 min	German/English
EI0644	Photovoltaic Stand Alone Systems	Elective	3 V + 1 Ü	1.-4. Sem.	4	5 Credits	Written exam	60 min	German/English
EI0602	Audio Communication	Elective	3 VI	1.-4. Sem.	4	5 Credits	Written exam	60 min	German/English
EI0636	Nanoelectronics	Elective	5 VI	1.-4. Sem.	5	5 Credits	Written exam	60 min	English

Module no.	Module name	Type of module	Teaching method SWS/ V Ü P	Sem.*	SWS	Credits	Type of examination	Duration of examination	Language of instruction
	EI- Information technology and Electronics Advanced modules (major)								
EI05381	Multimedia Laboratory	Elective	5 Pr	1.-4. Sem.	5	6 Credits	Project work	n.a.	German
EI4585	Project: Economic aspects of Nanotechnology	Elective	4 FOPr	1.-4. Sem.	4	5 Credits	Oral exam	n.a.	German
EI0631	Media Technology	Elective	4 VI	1.-4. Sem.	4	5 Credits	Written exam	90 min	German
EI7585	Clinical Applications of Computational Medicine	Elective	2 V	1.-4. Sem.	2	6 Credits	Project work	n.a.	English
EI7331	Algorithm for Digital Circuit Design	Elective	2 V	1.-4. Sem.	2	5 Credits	Written exam	60 min	German
EI0622	Semiconductor Sensors	Elective	4 VI	1.-4. Sem.	4	5 Credits	Written exam	60 min	German
EI73871	Practical Aspects of Technical Acoustics	Elective	4 VI	1.-4. Sem.	43	6 Credits	Written exam	90 min	German
EI7355	Nanosystems	Elective	4 VI	1.-4. Sem.	4	5 Credits	Written exam and presentation	30 min	English
EI7624	Techno-Economic Analysis of Telecommunication Networks	Elective	4 VI	1.-4. Sem.	4	5 Credits	Written exam and project	90 min	English
EI73141	Brain, Mind and Cognition (Seminar)	Elective	3 Se	1.-4. Sem.	3	5 Credits	Research project	n.a.	English
EI1291	Transmission of Electrical Energy - High Voltage Engineering	Elective	2 V + 1 Ü	1.-4. Sem.	3	5 Credits	Written exam	60 min	English
EI74042	Mathematical Methods of Circuit Design	Elective	4 VI	1.-4. Sem.	4	5 Credits	Written exam	60 min	English

Module no.	Module name	Type of module	Teaching method SWS/ V Ü P	Sem.*	SWS	Credits	Type of examination	Duration of examination	Language of instruction
	EI- Power Engineering advanced modules (major)								
EI7135	Industrial Energy Economy	Elective	2 V	1.-4. Sem.	2	3 Credits	Written exam	60 min	German
EI0611	Basics of Electrical Energy Storage	Elective	3 V +1 Ü	1.-4. Sem.	3	5 Credits	Written exam	60 min	German
EI0620	Fundamentals of Electrical Machines	Elective	4 VI	1.-4. Sem.	4	5 Credits	Written exam	90 min	German
EI7513	Ecomanagement and Life Cycle Analysis	Elective	2 V	1.-4. Sem.	2	3 Credits	Written exam	60 min	German
EI0610	Electrical Drives – Fundamentals and Applications	Elective	3 VI	1.-4. Sem.	3	5 Credits	Written exam	90 min	German
EI0628	Power Electronic – Fundamentals and Applications	Elective	3 VI + 1 Pr	1.-4. Sem.	3	5 Credits	Written exam	90 min	German
EI7328	Electromagnetic Compatibility in the Field of Power Engineering	Elective	4 VI	1.-4. Sem.	4	5 Credits	Oral exam	30 min	German
EI7329	Energy Application Technology	Elective	4 VI	1.-4. Sem.	4	5 Credits	Written exam	60 min	German
EI0612	Electrical Small Power Machines	Elective	3 VI	1.-4. Sem.	3	5 Credits	Written exam	60 min	German
EI4585	Project: Economic Aspects of Nanotechnology	Elective	FOPr	1.-4. Sem.	4	5 Credits	Report	n.a.	German
EI7624	Techno-Economic Analysis of Telecommunication Networks	Elective	4 VI	1.-4. Sem.	4	5 Credits	Written exam, report	90 min	English
EI70330	Data Networking	Elective	4 VI	1.-4. Sem.	4	5 Credits	Written exam	90 min	English
EI70810	Battery Storage	Elective	3 VO + 1 Ü	1.-4. Sem.	4	5 Credits	Written exam	60 min	English

Computer Engineering

Depending on their previous knowledge, students can choose basic modules or advanced modules in Computer Engineering.

Within the selected competence module catalog, modules amounting to at least 30 credits from an elective module offer must be successfully completed. This exemplary elective module catalog will be continuously updated, the current elective module catalog will be announced by the TUM School of Management in an appropriate way and in good time before the start of lectures.

Students who have already successfully completed the engineering or scientific subject of Computer Engineering in the Bachelor's program can only choose the major modules in Computer Engineering.

Module no.	Module name	Type of module	Teaching method SWS/ V Ü P	Sem.*	SWS	Credits	Type of examination	Duration of examination	Language of instruction
	Computer engineering basic modules (minor)								
IN8005	Introduction into Computer Science (for non Informatics studies)	Elective	2 V + 2 Ü	1.-4. Sem.	4	5 Credits	Written exam	90 - 150 min	English
IN8024	Information Management for Digital Business Models	Elective	2 V + 2 Ü	1.-4. Sem.	4	6 Credits	Written exam	90 - 150 min	German/English
IN8029	–Informatik Bachelor-Praktika für Management	Elective	6 PR	1.-4. Sem.	6	10 Credits	Project	n.a.	German/English
IN2113	Programming Languages	Elective	2 V + 2 Ü	1.-4. Sem.	4	5 Credits	Written exam	90 min	German/English
EI10001	Principles of Information Engineering	Elective	3 VI	1.-4. Sem.	3	6 Credits	Written exam	75 min	English
EI10002	Principles in Electrotechnology	Elective	3 V + 1 Ü	1.-4. Sem.	4	6 Credits	Written exam	90 min	English
EI10003	Analog Electronics	Elective	2 V + 1 Ü	1.-4. Sem.	3	5 Credits	Written exam	90 min	English
EI5183	Control Theory (MSE)	Elective	3 V	1.-4. Sem.	3	4 Credits	Written exam	90 min	n.a.
IN0006	Introduction to Software Engineering	Elective	3 V + 2 Ü	1.-4. Sem.	5	6 Credits	Written exam	90 min	English
IN0003	Functional Programming and Verification	Elective	2 V + 2 Ü	1.-4. Sem.	4	5 Credits	Written exam	120 min	English
IN2339	Data Analysis and Visualization in R	Elective	2 V + 4 Ü	1.-4. Sem.	6	6 Credits	Written exam	90 min.	English

Module no.	Module name	Type of module	Teaching method SWS/ V Ü P	Sem.*	SWS	Credits	Type of examination, weighting ratio	Duration of examination	Language of instruction
	Computer engineering advanced modules (major)								
IN2028	Business Analytics	Elective	2 V + 2 Ü	1.-4. Sem.	4	5 Credits	Written exam	90 min	English
IN2062	Techniques in Artificial Intelligence	Elective	3 V + 2 Ü	1.-4. Sem.	4	6 Credits	Written exam	90 min	German/English
IN2067	Robotics	Elective	5 VI	1.-4. Sem.	5	6 Credits	Written exam	90 -min	English
IN2222	Cognitive Systems	Elective	4 VI	1.-4. Sem.	4	5 Credits	Written exam	75 min	English
IN2309	Advanced Topics of Software Engineering	Elective	4 V + 2 Ü	1.-4. Sem.	6	8 Credits	Written exam	100 min	German/English
EI0697	Mobile Communications	Elective	4 VI	1.-4. Sem.	4	5 Credits	Written exam	90 min	English
EI0636	Nanoelectronics	Elective	5 VI	1.-4. Sem.	5	5 Credits	Written exam	60 min	English
EI70240	Statistical Signal Processing	Elective	4 VI	1.-4. Sem.	4	6 Credits	Written exam	n.a.	English
EI73141	Brain, Mind and Cognition (Seminar)	Elective	3 Se	1.-4. Sem.	3	5 Credits	Research project	n.a.	English
EI7480	Data-Driven Innovation	Elective	2 V + 1 Ü	1.-4. Sem.	3	5 Credits	Written exam, project + homework	n.a.	English
EI7581	Inside my iphone – Technology Analysis of a Smart Phone	Elective	4 Se	1.-4. Sem.	4	6 Credits	Research project	n.a.	English
EI7352	Multimedia Communications	Elective	4 VI	1.-4. Sem.	4	5 Credits	Written exam + homework	90 min	English
EI7624	Techno-Economic Analysis of Telecommunication Networks	Elective	4 VI	1.-4. Sem.	4	5 Credits	Written exam + projekt	90 min	English

Industrial Engineering

Within the selected competence module catalog, modules amounting to at least 30 credits from an elective module offer must be successfully completed. This exemplary elective module catalogue will be continuously updated, the current elective module catalog will be announced by the TUM School of Management in a suitable way and in good time before the start of lectures.

Modules from the elective catalog Industrial Engineering (minor) cannot be included in the OSCM specialization at the same time.

Module no.	Module name	Type of module	Teaching method SWS/ V Ü P	Sem.*	SWS	Credits	Type of examination, weighing ratio	Duration of examination	Language of instruction
	Industrial engineering basic modules (minor)								
WI100967	Designing and Scheduling Lean Manufacturing Systems	Elective	4 VI	1.-4. Sem.	4	6 Credits	written exam	120 min	English
WI200541	Planning and Scheduling of Complex Operations: Models, Methods and Applications	Elective	4 VI	1.-4. Sem.	4	6 Credits	exercise performance 1:1	60 min	English
IN2028	Business Analytics	Elective	2 V + 2 Ü	1.-4. Sem.	4	6 Credits	Written exam	90 min	English
IN2211	Auction Theory and Market Design	Elective	2 V + 2 Ü	1.-4. Sem.	4	6 Credits	Written exam	90 min	English
MA4800	Foundations of Data Analysis	Elective	4 V + 2 Ü	1.-4. Sem.	6	8 Credits	Written exam	90 min	English
IN8005	Introduction into Computer Science (for non Informatics studies)	Elective	2 V + 2 Ü	1.-4. Sem.	4	6 Credits	Written exam	90 min	English

Electives in Management and/or Technology

Within the framework of the electives in Management and/or Technology, students will perform examinations in the management or technological field in the amount of 30 credits. Of these, 12 credits can be earned as part of a the module "project study" in accordance with § 37a.

In the electives in Management and/or Technology, students have access to all courses of the management specializations at Master level as well as all electives in Technology modules of the Master's program Management & Technology. Instead of examination performances at the TUM, subject-related examination performances amounting to 30 credits can be performed at a foreign university within the scope of a stay abroad. The student, together with a mentor appointed by the faculty, prepares an individual semester study plan, which must be approved at least three weeks before the performance of the examination. The corresponding courses must be selected from the range offered by the foreign university.

The catalog of elective modules will be announced by the TUM School of Management in good time before the start of lectures.

Students who have already successfully completed basic modules of an engineering or natural science subject in the Bachelor's degree program are not permitted to bring these also into the Master's degree program in Management & Technology.

Module no.	Module name	Type of module	Teaching method SWS/ V Ü P	Sem.*	SWS	Credits	Type of examination	Duration of examination	Language of instruction
	Project Studies								
WI900685	Project Studies	Elective		1.-4. Sem.	8	12 Credits	Project work	n.a.	German/ English

Master's Thesis

	Master's Thesis								
WI900249	Master's Thesis	Compulsory		4. Sem		30 Credits			German/ English

Explanations:

Sem. = semester; SWS = Semesterwochenstunden (weekly hours per semester); V = Vorlesung (lecture); Ü = Übung (exercise); P = Praktikum (internship), Se = seminar.

For written examinations, the duration of the examination in minutes is listed in the column 'Duration of examination'.

Comments:

* Recommended semester depending on the chosen management specialization and the engineering/scientific subject.