II. Examination Modules

1. German Track

Basics of Management, Economics, Law and Mathematics/Natural Sciences

The following required and elective modules in the Basics of Management, Economics, Law and Mathematics/Natural Sciences must be successfully completed:

Nr.	Module no.	Module name	Type of module	Teaching method SWS/ V Ü P S	Sem.	SWS	Credits	Type of examination	Duration of examination	Language of instruction*
		Basics of Business								
1	WI001058	Foundations of Entrepreneurial and Ethical Business	Compulsory	4 V	1.	4	6	open-book, remote exam	120 min	German/ English
2	WI001060	Production and Logistics	Compulsory	4 V	2.	4	6	Written exam	120 min	German/ English
3	WI001121	Strategic and International Management & Organizational Behavior	Compulsory	4 V	3.	4	6	Written exam	120 min	German/ English
4	WI000261	Empirical Research Methods	Compulsory	2 V + 2 Ü	4.	4	6	Written exam	120 min	German/ English
5	WI000820	Marketing and Innovation Management	Compulsory	4 V	4.	4	6	Written exam	120 min	German/ English
6	WI000275_E	Management Science	Compulsory	2 V + 2 Ü	1.	4	6	Written exam	60 min	German/ English
7	WI001059_E	Financial Accounting	Compulsory	2 V + 2 Ü	1.	4	6	Written exam	60-120 min	English
8	WI001057	Cost Accounting	Compulsory	2 V + 2 Ü	2.	4	6	Written exam	60 min	German/ English
9	WI000219	Investment and Financial Management	Compulsory	2 V + 2 Ü	3.	4	6	Written exam	120 min	German

Nr.	Module no.	Module name	Type of module	Teaching method SWS/ V Ü P S	Sem.	SWS	Credits	Type of examination	Duration of examination	Language of instruction*
		Basics of Economics								
10a	WI000021	Economics I - Microeconomics	Compulsory	2 V + 2 Ü	1.	4	6	Written exam	120 min	German
		and								
10b	WI000023	Economics II - Macroeconomics	Compulsory	2 V + 2 Ü	2.	4	6	Written exam	120 min	German

Nr.	Module no.	Module name	Type of module	Teaching method SWS/ V Ü P S	Sem.	SWS	Credits	Type of examination	Duration of examination	Language of instruction*
		Basics of Law								
11a	WI000027	German Business Law I	Compulsory	2 V + 2 Ü	3.	4	6	Written exam	120 min	German
		and								
11b	WI000030	German Business Law II	Compulsory	2 V + 2 Ü	4.	4	6	Written exam	120 min	German

Nr.	Module no.	Module name	Type of module	Teaching method SWS/ V Ü P S	Sem.	SWS	Credits	Type of examination	Duration of examination	Language of instruction
		Basics of Mathematics/ Natural Sciences								
12	MA9711	Mathematics in Natural and Economic Science 1	Compulsory	4 V	1.	4	6	Written exam	90 min	English
13	MA9712	Statistics for BWL	Compulsory	3 V + 1 Ü	2.	4	6	Written exam	90 min	English

Specialization in Technology (Engineering, Natural or Life Sciences Subject)

One of the following six specializations in technology must be chosen.

If **Chemistry** is chosen as specialization in technology, each module indicated must be completed successfully.

If **Computer Science** is chosen as a specialization in technology, 36 credits from the compulsory module area and at least 6 credits from the elective module area must be completed successfully. An exemplary catalogue of elective modules is attached; the valid catalogue of elective modules will be announced by the TUM School of Management in a suitable manner in due time before the start of lectures.

If **Electrical & Information Technology** is chosen as a specialization in technology, 37 credits from the compulsory module area and at least 5 credits from the elective module area must be completed successfully. An exemplary catalogue of elective modules is attached; the valid catalogue of elective modules will be announced by the TUM School of Management in a suitable manner in due time before the start of lectures.

If **Mechanical Engineering** is chosen as a specialization in technology, 37 credits from the compulsory module area and at least 5 credits from the elective module area must be completed successfully. An exemplary catalogue of elective modules is attached; the valid catalogue of elective modules will be announced by the TUM School of Management in a suitable manner in due time before the start of lectures.

If **Computer Engineering** is chosen as a specialization in technology, at least 42 credits from the elective module area must be completed successfully.

If **Medicine** is chosen as a specialization in technology, each shown module must be successfully completed. The choice of this specialization is made according to Appendix 2.

Nr.	Module no.	Module name	Type of module	Teaching method SWS/ V Ü P S	Sem.	SWS	Credits	Type of examination	Duration of examination	Language of instruction
		Chemistry								
1	CH0575	General and Inorganic Chemistry	Compulsory	4 V	2.	4	6	Written exam	90 min	German
2	CH1091	Basic Principles of Physical Chemistry 1	Compulsory	3 V + 1 Ü	3.	4	6	Written exam	90 min	German
3	CH1090	Introduction to Organic Chemistry	Compulsory	3 V + 1 Ü	4.	4	6	Written exam	90 min	German
4	CH0106	Biology for Chemists	Compulsory	2 V + 1 Ü	5.	3	6	Written exam	90 min	German
5	CH1000	Chemical Laboratory Course for TUM-BWL	Compulsory	4 P + 2 S	4.	6	6	Laboratory performance + Written exam (3:1)	90 min	German/ English
6	CH0999	Chemistry Software and Databases for TUM-BWL	Compulsory	1 V + 1 Ü	6.	2	3	Written exam	60 min	German

Nr.	Module no.	Module name	Type of module	Teaching method SWS/ V Ü P S	Sem.	SWS	Credits	Type of examination	Duration of examination	Language of instruction
7	CH0107	Analytical Chemistry	Compulsory	2 V	5.	2	3	Written exam	90 min	German
8	CH1123	Chemical Engineering for TUM-BWL	Compulsory	4 V	6.	4	6	Written exam	120 min	German/ English

Nr.	Module no.	Module name	Type of module	Teaching method SWS/ V Ü P S	Sem.	SWS	Credits	Type of examination	Duration of examination	Language of instruction
		Informatics								
		Compulsory								
1	IN0001	Introduction to Informatics 1	Compulsory	4 V	3.	4	6	Written exam	90-150 min	German
2	IN8024	Information Management for Digital Business Models	Compulsory	2 V + 2 Ü	2.	4	6	Written exam	60-125 min	English
3	IN0002	Fundamentals of Programming (Exercises & Laboratory)	Compulsory	3 P + 1 Ü	3.	4	6	Practical exercise	n/a	German
4	IN0006	Introduction to Software Engineering	Compulsory	3 V + 2 Ü	4.	5	6	Written exam	90-150 min	German/ English
5	IN0009	Basic Principles: Operating Systems and System Software	Compulsory	3 V + 2 Ü	5.	5	6	Written exam	90-150 min	German
6	IN0008	Fundamentals of Databases	Compulsory	3 V + 2 Ü	5.	5	6	Written exam	90-150 min	German
		Elective								
7	IN0003	Functional Programming and Verification	Elective	2 V + 2 Ü	5./6.	4	6	Written exam	75-125 min	English
8	MA9714	Mathematics in Natural and Economic Science 2	Elective	3 V + 1 Ü	2.-6.	4	6	Written exam	90 min	English

Nr.	Module no.	Module name	Type of module	Teaching method SWS/ V Ü P S	Sem.	SWS	Credits	Type of examination	Duration of examination	Language of instruction
		Electrical & Information Technology								
		Compulsory								
1	MA9714	Mathematics in Natural and Economic Science 2	Compulsory	3 V + 1 Ü	2.	4	6	Written exam	90 min	German/ English
2	EI29821	Principles of Information Engineering	Compulsory	2 V + 2 Ü	3.	4	5	Written exam	75 min	German
3	EI10002	Principles of Electrotechnology	Compulsory	3 V + 1 Ü	3.	4	6	Written exam	90 min	English
4	EI1289	Electrical Engineering	Compulsory	2 V + 1 Ü	4.	3	5	Written exam	90 min	German
5	EI10003	Analog Electronics	Compulsory	2 V + 1 Ü	4.	3	5	Written exam	90 min	English
6	EI2986	Telecommunication I – Signal Representation	Compulsory	2 V + 1 Ü	5.	3	5	Written exam	75 min	German
7	IN8005	Introduction into Computer Science (for non Informatics studies)	Compulsory	2 V + 2 Ü	5.	4	5	Written exam	90-150 min	English
		Elective								
8	EI0644	Photovoltaic Stand Alone Systems	Elective	3 V + 1 Ü	5./6.	4	5	Written exam	60 min	German

Nr.	Module no.	Module name	Type of module	Teaching method SWS/ V Ü P S	Sem.	SWS	Credits	Type of examination	Duration of examination	Language of instruction
9	EI0602	Audio Communication	Elective	2 V + 1 Ü	5./6.	3	5	Written exam	60 min	German

Nr.	Module no.	Module name	Type of module	Teaching method SWS/ V Ü P S	Sem.	SWS	Credits	Type of examination	Duration of examination	Language of instruction
		Mechanical Engineering								
		Compulsory								
1	IN8005	Introduction into Computer Science (for non Informatics studies)	Compulsory	2 V + 2 Ü	3.	4	5	Written exam	90-150 min	English
2	MA9714	Mathematics in Natural and Economic Science 2	Compulsory	3 V + 1 Ü	2.	4	6	Written exam	90 min	German/ English
3	MW2385	CAD and Machines Drawing (Specialization/ Application Area)	Compulsory	2 V + 2 Ü + 3 P	5./6.[1]	7	5	Exercise performances (academic performances) Written exam	90 min	German
4	MW2447	Introduction to Manufacturing Technology	Compulsory	2 V	4.	2	3	Written exam	60 min	German
5	MW1108	Engineering Mechanics for Technology Management	Compulsory	2 V + 2 Ü	3.	4	6	Written exam	120 min	German
6	MW1694	Machine Elements – Basics, Manufacturing, Application	Compulsory	2 V + 3 Ü	5.	5	7	Written exam	120 min	German
7	BV350007	Materials in Mechanical Engineering	Compulsory	2 V + 2 Ü	4.	4	5	Written exam	90 min	German
		Elective								
8	MW2156	Metal-cutting Manufacturing Processes	Elective	2 V + 1 Ü	5./6.	3	5	Written exam	90 min	German
9	MW1903	Bioprocess Engineering	Elective	3 V	5./6.	3	5	Written exam	90 min	German

Nr.	Module no.	Module name	Type of module	Teaching method SWS/ V Ü P S	Sem.	SWS	Credits	Type of examination	Duration of examination	Language of instruction
		Computer Engineering								
1	IN8005	Introduction into Computer Science (for non Informatics studies)	Elective	2 V + 2 Ü	2.-6.	4	5	Written exam	90-150 min	English
2	IN8024	Information Management for Digital Business Models	Elective	2 V + 2 Ü	2.-6.	4	6	Written exam	60-125 min	English
3	MA9714	Mathematics in Natural and Economic Science 2	Elective	3 V + 1 Ü	2.-6.	4	6	Written exam	90 min	English
4	IN2161	Networks for Monetary Transactions	Elective	2 V	2.-6.	4	3	Written exam	60 min	English
5	IN2339	Data Analysis and Visualization in R	Elective	2 V + 4 Ü	2.-6.	6	6	Written exam	90-150 min	English
6	IN2113	Programming Languages	Elective	2 V + 2 Ü	2.-6.	4	6	Written exam	75-125 min	English
7	EI10001	Principles of Information Engineering	Elective	2 V + 1 Ü	2.-6.	3	6	Written exam	75 min	English
8	EI10002	Principles of Electrotechnology	Elective	3 V + 1 Ü	2.-6.	4	6	Written exam	90 min	English
9	EI10003	Analog Electronics	Elective	2 V + 1 Ü	2.-6.	3	5	Written exam	90 min	English
10	EI5183	Control Theory (MSE)	Elective	2 V + 1 Ü	2.-6.	3	4	Written exam	90 min	English
11	IN0003	Functional Programming and Verification	Elective	2 V + 2 Ü	2.-6.	4	6	Written exam	75-125 min	English

Nr.	Module no.	Module name	Type of module	Teaching method SWS/ V Ü P S	Sem.	SWS	Credits	Type of examination	Duration of examination	Language of instruction
		Medicine								
		Compulsory								
1	MEDWI001	Chemistry – Basic knowledge with clinical links	Compulsory	online (vhb)	2.	4	6	Exercise	N/A	German
2	WZ8057	Biology Part 1	Compulsory	2 V	3.	2	3	Written exam	60-120 min	German
3	SG120020	Composition and Function of the Human Body	Compulsory	4 V + 2 Ü	3.	6	7	Written exam	90-120 min	German
4	SG120025	Human Biology	Compulsory	4 V + 1 Ü + 1 S	4.	6	7	Written exam	90-120 min	German
5	MEDWI002	Medical terminology	Compulsory	1 V + 1 Ü	3.	2	3	Written exam	60 min	German
6	MEDWI003	Medical Focus	Compulsory	5 V + 1 Ü	5.	6	7	Written exam + Written exam (3:2)	90 min + 60 min	German
7	MEDWI004	Medical Science and Practics	Compulsory	1 V + 3 P	5./6.	4	4	Report	N/A	German

| 8 | IN8005 | Introduction into Computer Science (for non-Informatics studies) | Compulsory | 2 V + 2 Ü | 5. | 4 | 5 | Written exam | 90-150 min | English |

Electives in Management and/or Technology

Within the Electives in Management and/or Technology, students take 18 credits from the bachelor's courses offered at the School of Management and/or modules from the areas of the engineering, nature or life science specializations that are part of the Bachelor's program in Management and Technology (with the exception of medicine modules) or management or technical modules which are taken during a semester abroad. These examinations may not have already been taken elsewhere in the curriculum. The catalog of elective modules will be announced by the TUM School of Management in good time before the start of lectures. Attached below is an **exemplary catalog of elective modules**.

Nr.	Module no.	Module name	Type of module	Teaching method SWS/ V Ü P S	Sem.	SWS	Credits	Type of examination	Duration of examination	Language of instruction
1	WIB19807	Topics in Operations & Supply Chain Management I	Elective	4 V	4./5./6.	4	6	Written exam	120 min.	English
2	WI001028	Basic Principles and international Aspects of Corporate Management	Elective	2 V + 2 Ü	4./5./6.	4	6	Written exam	120 min	German
3	WI001083	Controlling	Elective	2 V + 2 Ü	4./5./6.	4	6	Written exam	60 min	German
4	WI000026	Advanced Technology and Innovation Management	Elective	4 V	4./5./6.	4	6	Written exam	120 min	English
5	WI001192	Evidence Based Decisions Using Big Data Analytics	Elective	4 V	4./5./6.	4	6	Written exam	60 min	German
6	WI001108	Law of Business Association 2	Elective	2 V	4./5./6.	2	3	Written exam	60 min	German
7	WI001143	Intellectual Property Management in the Global Market Place	Elective	2 V	4./5./6.	2	3	Written exam	60 min	English
8	WI000285	Innovative Entrepreneurs – Leadership of High-Tech Organizations	Elective	2 V	4./5./6.	2	3	Project work	N/A	German
9	WI000996	High Performance Leadership	Elective	4 V	4./5./6.	4	6	Written exam	90 min	German
10	WI001183	Energy & Climate Policy	Elective	4 V	4./5./6.	4	6	Written exam	120 min	English

International Experience & Communication Skills

The module „International Experience" must be completed by successfully passing a written exam. For the module „Communication Skills" one course out of an additional catalog of elective modules must be successfully completed. The additional catalog of elective modules will be announced by the TUM School of Management in good time before the start of lectures.

Module no.	Module name	Type of module	Teaching method SWS/ V Ü P S	Sem.	SWS	Credits	Type of examination	Duration of examination	Language of instruction
	International Experience & Communication Skills								

WI001197	International Experience	Compulsory		4.-6. [1]		3	Written exam (SL)	60 120 min	English
WI001198	Communication Skills	Compulsory		4.-6. [1]	2	3	SL		German/English

Project Studies

Module no.	Module name	Type of module	Teaching method SWS/ V Ü P S	Sem.	SWS	Credits	Type of examination	Duration of examination	Language of instruction
	Project Studies								
WI000684	Project Studies	Compulsory		5. [1]		12	Project work		German/English

Bachelor's Thesis

	Bachelor's Thesis								
WI000693	Bachelor's Thesis	Compulsory		6. [1]		12			German/English

Explanations:
Sem. = Semester; SWS = Semesterwochenstunden (weekly hours per semester); V = Vorlesung (lecture); Ü = Übung. (exercise); P = Praktikum (internship); S = Seminar

Comments:

[1] This module can take two semesters.
* The language of instruction will be announced at the start of the lectures according to § 37 (3).

2. English Track

Basics of Management, Economics, Law and Mathematics/Natural Sciences

The following required and elective modules in the Basics of Management, Economics, Law and Mathematics/Natural Sciences must be successfully completed:

Nr.	Module no.	Module name	Type of module	Teaching method SWS/ V Ü P S	Sem.	SWS	Credits	Type of examination	Duration of examination	Language of instruction
		Basics of Business								
1	WI001058	Foundations of Entrepreneurial and Ethical Business	Compulsory	4 V	1.	4	6	Open-book, remote exam	120 min	English
2	WI001060	Production and Logistics	Compulsory	4 V	2.	4	6	Written exam	120 min	English
3	WI001121	Strategic and International Management & Organizational Behavior	Compulsory	4 V	3.	4	6	Written exam	120 min	English
4	WI000261	Empirical Research Methods	Compulsory	2 V + 2 Ü	4.	4	6	Written exam	120 min	English
5	WI000820	Marketing and Innovation Management	Compulsory	4 V	4.	4	6	Written exam	120 min	English
6	WI000275_E	Management Science	Compulsory	2 V + 2 Ü	1.	4	6	Written exam	60 min	English

Nr.	Module no.	Module name	Type of module	Teaching method SWS/ V Ü P S	Sem.	SWS	Credits	Type of examination	Duration of examination	Language of instruction
7	WI001059_E	Financial Accounting	Compulsory	2 V + 2 Ü	1.	4	6	Written exam	60-120 min	English
8	WI001057_E	Cost Accounting	Compulsory	2 V + 2 Ü	2.	4	6	Written exam	60 min	English
9	WI000219_E	Investment and Financial Management	Compulsory	2 V + 2 Ü	3.	4	6	Written exam	120 min	English
		Basics of Economics								
10a	WI000021_E	Economics I – Microeconomics	Compulsory	2 V + 2 Ü	1.	4	6	Written exam	120 min	English
		und								
10b	WI000023_E	Economics II – Macroeconomics	Compulsory	2 V + 2 Ü	2.	4	6	Written exam	120 min	English
		Basics of Law								
11a	WI001119	Business Law I	Compulsory	2 V + 2 Ü	3.	4	6	Written exam	120 min	English
		und								
11b	WI001120	Business Law II	Compulsory	2 V +2 Ü	4.	4	6	Written exam	120 min	English
		Basics of Mathematics/ Natural Science								
12 neu	MA9711	Mathematics in Natural and Economic Science 1	Compulsory	4 V	1.	4	6	Written exam	90 min	English
13	MA9712	Statistics for Business Administration	Compulsory	3 V + 1 Ü	2.	4	6	Written exam	90 min	English

Specialization in Technology (Engineering, Natural or Life Sciences Subject)

For **Computer Engineering** as specialization in technology, you must successfully complete at least 42 credits from the elective module area.

Nr.	Module no.	Module name	Type of module	Teaching method SWS/ V Ü P S	Sem.	SWS	Credits	Type of examination	Duration of examination	Language of instruction
		Computer Engineering								
1	IN8005	Introduction into Computer Science (for non Informatics studies)	Elective	2 V + 2 Ü	2.-6.	4	5	Written exam	90-150 min	English
2	IN8024	Information Management for Digital Business Models	Elective	2 V + 2 Ü	2.-6.	4	6	Written exam	60-125 min	English
3	MA9714	Mathematics in Natural and Economic Science 2	Elective	3 V + 1 Ü	2.-6.	4	6	Written exam	90 min	English
4	IN2161	Networks of Monetary Transactions	Elective	2 V	2.-6.	2	3	Written exam	60 min	English
5	IN2339	Data Analysis and Visualization in R	Elective	2 V + 4 Ü	2.-6.	6	6	Written exam	90-150 min	English
6	IN2113	Programming Languages	Elective	2 V + 2 Ü	2.-6.	4	6	Written exam	75-125 min	English
7	EI10001	Principles of Information Engineering	Elective	2 V + 1 Ü	2.-6.	3	6	Written exam	75 min	English
8	EI10002	Principles of Electrotechnology	Elective	3 V + 1 Ü	2.-6.	4	6	Written exam	90 min	English

Nr.	Module no.	Module name	Type of module	Teaching method SWS/ V Ü P S	Sem.	SWS	Credits	Type of examination	Duration of examination	Language of instruction
9	EI10003	Analog Electronics	Elective	2 V + 1 Ü	2.-6.	3	5	Written exam	90 min	English
10	EI5183	Control Theory (MSE)	Elective	2 V + 1 Ü	2.-6.	3	4	Written exam	90 min	English
11	IN0003	Functional Programming and Verification	Elective	2 V + 2 Ü	2.-6.	4	6	Written exam	75-125 min	English

Electives in Management and/or Technology

Within the Electives in Management and/or Technology, students take 18 credits from the bachelor's courses offered at the School of Management and/or modules from the areas of the engineering, nature or life science specializations that are part of the Bachelor's program in Management and Technology (with the exception of medicine modules) or management or technical modules which are taken during a semester abroad. These examinations may not have already been taken elsewhere in the curriculum. The catalog of elective modules will be announced by the TUM School of Management in good time before the start of lectures. Attached below is an **exemplary catalog of elective modules**.

Nr.	Module no.	Module name	Type of module	Teaching method SWS/ V Ü P S	Sem.	SWS	Credits	Type of examination	Duration of examination	Language of instruction
1	WIB19807	Topics in Operations & Supply Chain Management I	Elective	4 V	4./5./6.	4	6	Written exam	120 min.	English
2	WI000026	Advanced Technology and Innovation Management	Elective	4 V	4./5./6.	4	6	Written exam	120 min	English
3	WI000264	Project Management	Elective	2 V + 2 Ü	4./5./6.	4	6	Written exam	60-120 min	English
4	WI000978	Transportation Logistics	Elective	2 V + 2 Ü	4./5./6.	4	6	Written exam	90 min	English
5	WI001183	Energy & Climate Policy	Elective	4 V	4./5./6.	4	6	Written exam	120 min	English
6	WI000091	Corporate Finance	Elective	2 V + 2 Ü	4./5./6.	4	6	Written exam	120 min	English

International Experience & Communication Skills

The module „International Experience" must be completed by successfully passing a written exam. For the module „Communication Skills" one course out of an additional catalog of elective modules must be successfully passed. The additional catalog of elective modules will be announced by the TUM School of Management in good time before the start of lectures.

Module no.	Module name	Type of module	Teaching method SWS/ V Ü P S	Sem.	SWS	Credits	Type of examination	Duration of examination	Language of instruction
	International Experience & Communication Skills								
WI001197	International Experience	Compulsory		4.-6. [1]		3	Written exam (SL)	60-120 min	English
WI001198	Communication Skills	Compulsory		4.-6. [1]	2	3	SL		German/ English

Project Studies

Module no.	Module name	Type of module	Teaching method SWS/ V Ü P S	Sem.	SWS	Credits	Type of examination	Duration of examination	Language of instruction
	Project Studies								
WI000684	Project Studies	Compulsory		5. [1]		12	Project work		English

Bachelor's Thesis

	Bachelor's Thesis								
WI000693	Bachelor's Thesis	Compulsory		6. [1]		12			English

Explanations:
Sem. = Semester; SWS = Semesterwochenstunden (weekly hours per semester); V = Vorlesung (lecture); Ü = Übung (exercise); P = Praktikum (internship); S = Seminar.

Comments:
[1] This module can take two semesters.