Study plan Bachelor Mathematics
Start of studies as of winter semester 2023/24

Please note: the Bachelor's program Mathematics at TUM is a program in German. This study plan only provides a brief overview of the program. Legally binding information can be found in the examination regulation.

Semester	Modules					Credits
1.	Analysis 1￼9 CP	Linear Algebra 1￼9 CP	Math. Foundations￼5 CP	Math. Studying￼6 CP	Minor Subject￼6 – 9 CP	30
2.￼GOP	Analysis 2￼9 CP	Lin. Alg. 2￼6 CP	Discrete Math.￼4 CP		Minor Subject￼6 – 9 CP	30
3.	Analysis 3￼9 CP	Numerics￼9 CP	Introd. to Prob. and Statistics￼9 CP		Intro. to Programming￼3 CP	30
4.	Intro. to Optimization￼9 CP	Algebra￼9 CP	Geometry￼9 CP	Professional Internship￼6 CP	Minor Subject￼6 – 9 CP	30
		2 out of 3 modules				
5.	Math. Specialization				Seminar￼3 CP	30
6.	Math. Specialization		Interdisciplinary Courses￼4 CP		Bachelor's Thesis￼12 CP	30
Legend:	Grey: Compulsory modules in the basic area￼Light blue: Elective mathematical modules in the advanced and specialization areas￼Dark blue: Thesis, seminar and professional internship￼Light green: Modules in the minor subject area (elective and/or compulsory)￼Orange: Interdisciplinary courses (elective)					

Basic and orientation examination (GOP) and progress check

The GOP gives all students the opportunity to orient themselves on the basis of subject-specific content. By passing the exam, students also demonstrate that they have acquired the essential mathematical foundations that are a prerequisite for continuing their studies and an excellent indicator of academic success. This gives students clarity about the requirements of their degree course during their first year of study. Students who are unsuccessful in the GOP must leave the degree program.

The GOP comprises

- the four foundation modules (written): *Analysis 1*, *Linear Algebra 1*, *Analysis 2* and *Linear Algebra 2* and
- the module *Mathematical Foundations* (oral).

By the end of the second semester, at least one of the two analysis modules (*Analysis 1*, *Analysis 2*), at least one of the two Linear Algebra modules (*Linear Algebra 1*, *Linear Algebra 2*) and the oral *Mathematical Foundations* examination must have been passed. Students have two attempts for

each of these. After this, students have an unlimited number of retakes for a maximum of two of the four written foundation modules.

In addition, the examination modules specified in the FPSO must be completed:
at least 30 credits by the end of the third semester,
at least 60 credits by the end of the fourth semester,
at least 90 credits by the end of the fifth semester,
at least 120 credits by the end of the sixth semester,
at least 150 credits by the end of the seventh semester and
at least 180 credits by the end of the eighth semester.

Credit requirements in the elective areas

The elective area is devided into *advanced modules* (Introduction to Optimization, Algebra, Geometry), *spezialization modules* and *modules in minor subjects*. The area of minor modules can include both compulsory and elective modules. The following conditions apply:

Area	Credit requirement		
Advanced modules	at least 18 CP	at least 50 CP	77 CP
Spezialization modules	at least 23 CP		
Minor subject	18 – 27 CP		

Specialization modules and recommendations for elective modules for specializations

The current elective catalog with all specialization modules can be found in the study tree in TUMonline.

Minor subject

The minor subjects Electrical Engineering and Information Technology, Computer Science, Physics and Economics are offered without overlap.

All further information can be found in the FPSO and the study tree in TUMonline.