

## **Practical-oriented track (“P-Profil”) in the Bachelor’s programme in mathematics**

In the following, C stands for credits. All in all, 180 C over the course of 6 semesters have to be acquired, so about 30 C per semester. In each semester, other modules of the key competencies or the minor subject should be chosen besides the mathematics courses, to reach this number of approx. 30 C.

### **Mathematics modules in the semesters 1 and 2:**

For all three tracks, these modules are obligatory:

- B.Mat.0011: Analysis I (9 C) (*“Differential and Integral Calculus I”*)\*
- B.Mat.0021: Analysis II (9 C) (*“Differential and Integral Calculus II”*)
- B.Mat.0012: Analytic Geometry and Linear Algebra I (9 C)
- B.Mat.0022: Analytic Geometry and Linear Algebra II (9 C)

**B.Mat.0011 and B.Mat.0012 have to be successfully completed until the end of the fourth semester of study.**

### **Mathematics modules from semester 3:**

In the practical-oriented track, the following basic lectures are obligatory:

- B.Mat.1420: Stochastics (9 C)
- B.Mat.1300: Foundations of Numerical Mathematics (9 C) (*„Numerical Mathematics I“*)
- B.Mat.1400: Foundations of Measure and Probability Theory (9 C) (*„Measure and Probability Theory“*)

Additionally, one of the following two modules has to be completed successfully:

- B.Mat.1100: Foundations of Analysis, Geometry and Topology (9 C)
  - o *This has to be completed by taking “Differential and Integral Calculus III” or “Complex Analysis”.*
- B.Mat.1200: Foundations of Algebra, Geometry and Number Theory (9 C) (*„Algebra“*)

**In this profile only the fields of study SP 3 or SP 4 can be chosen.**

### **Mathematics modules from semester 4 on:**

- B.Mat.2400: Applied Statistics (9 C) is obligatory.
- A mathematical proseminar or seminar is obligatory.
- Additionally, at least one of the following two modules has to be completed successfully:
  - o B.Mat.2300: Foundations of Numerical Mathematics II (9 C)
  - o B.Mat.2310: Optimisation (9 C)
- 27 C have to be selected from these continuative mathematical modules:
  - o B.Mat.2100: Partial Differential Equations (9 C)
  - o B.Mat.2110: Functional Analysis (9 C)
  - o B.Mat.2120: Complex Analysis (9 C)
  - o B.Mat.2200: Modern Geometry (9 C)
  - o B.Mat.2210: Numbers and Number Theory (9 C)
  - o B.Mat.2300: Foundations of Numerical Mathematics II (9 C)
  - o B.Mat.2310: Optimisation (9 C)
  - o B.Mat.0720: Mathematical Application Software (3 C)
  - o B.Mat.0730: Practical Course in Scientific Computing (9 C)
  - o B.Mat.0740: Practical Course in Stochastics (9 C, 6 SWS)
  - o B.Mat.1310: Methods for Numerical Mathematics (4 C)
  - o B.Mat.3031: Scientific Computing (6 C)
  - o B.Mat.3041: Non-Life Insurance Mathematics (3 C)
  - o B.Mat.3042: Actuarial Mathematics (3 C)
  - o All modules with numbers of the form B.Mat.3XXX

**Minor subject (30 C):** Please observe these hints: [www.uni-goettingen.de/en/482917.html](http://www.uni-goettingen.de/en/482917.html)

### **Schlüsselkompetenzen (18 C):**

- One programming course is obligatory, the following is recommended: B.Inf.1801: Programming (5 C)
- One of the following three modules has to be completed successfully:
  - o B.Mat.0970: Internship (8 C)
  - o B.Mat.0730: Practical Course in Scientific Computing (9 C)
  - o B.Mat.0740: Practical Course in Stochastics (9 C)
- To collect a total of 18 C, you have to choose from the following:  
[www.uni-goettingen.de/en/485026.html](http://www.uni-goettingen.de/en/485026.html) or [www.uni-goettingen.de/en/192579.html](http://www.uni-goettingen.de/en/192579.html)

**Bachelor’s thesis (12 C):** Only possible in SP3 (Numerical and applied mathematics) or SP 4 (Mathematical stochastic)

\* In some cases, the course belonging to the module is in the brackets after the module names.