

Mathematical and Theoretical Physics

The faculties of Physics and of Mathematics have established a new interdisciplinary two year master program Mathematical and Theoretical Physics (MTP). The program has officially started this summer term 2014 after being accredited. This master program is open to international students and following the curriculum in English is possible. Eligible candidates should have a bachelor degree in mathematics or in physics, with sufficiently many credit points covering both mathematics and theoretical and experimental physics.

Admission requirements and application

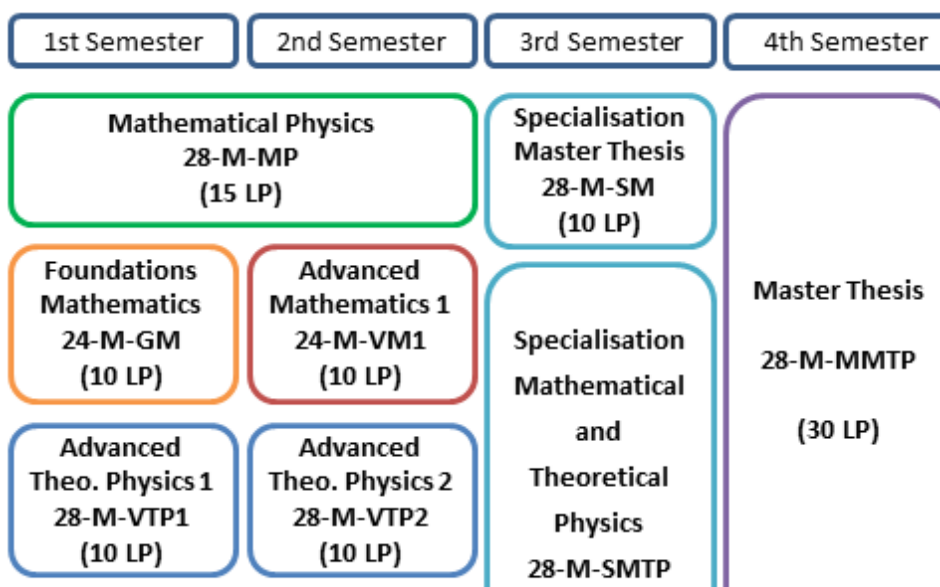
This interdisciplinary Master programme is open to students with a bachelor's degree in physics or in mathematics, with a strong record in the complementary field. In mathematics we require at least 32 credits (ECTS) in analysis, linear algebra, and measure and integration theory. At least 48 credits in total are required in physics, consisting of theoretical physics (mechanics, electrodynamics, special relativity and quantum mechanics), experimental physics (mechanics, electrodynamics, optics, thermodynamics and atomic physics) and physics laboratories. Further advanced studies of at least 20 credit points in theoretical physics, mathematics or both are also required. Under certain criteria conditional admission may be granted for other applicants, with compensatory studies required. We recommend to start in the winter semester (mid-October) of each year. For further information on application deadlines and to download the application form go to:

www.uni-bielefeld.de/application

[The official document where these entry criteria are specified can be found here \(in German\).](#)

In the following, the degree programs for the two tracks are pictured.

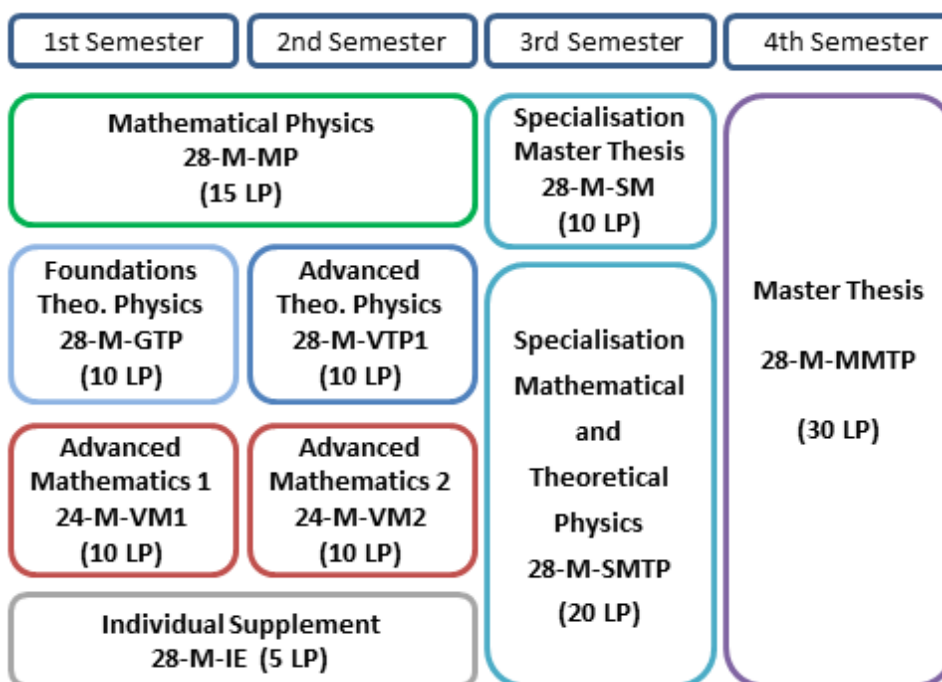
Track Theoretical Physics



Individual Supplement
28-M-IE (5 LP)

(20 LP)

Track Mathematics



List of Modules

| Code | Title of Module | Credite Points | Number of Study Performances | Number of Examinations | |
|----------|---|----------------|------------------------------|------------------------|------------|
| | | | | marked | not marked |
| 28-M-MP | Mathematical Physics | 15 | 1 | 1 | 1 |
| 24-M-GM | Foundations Mathematics | 10 | 1 | 1 | |
| 28-M-GTP | Foundations Theoretical Physics | 10 | 1 | 1 | |
| 24-M-VM1 | Advanced Mathematics 1 | 10 | 1-2* | 1 | |
| 24-M-VM2 | Advanced Mathematics 2 | 10 | 1-2* | 1 | |

| | | | | |
|-----------|--|----|------|---|
| 28-M-VTP1 | Advanced Theoretical Physics 1 | 10 | 1-2* | 1 |
| 28-M-VTP2 | Advanced Theoretical Physics 2 | 10 | 1-2* | 1 |
| 28-M-IE | Individual Supplement | 5 | | |
| 24-M-SM | Spezialisierung Master Thesis | 10 | | 1 |
| 28-M-SMTP | Spezialisierung Mathematical and Theoretical Physics | 20 | 2-4* | 1 |
| 28-M-MMTP | Master Thesis | 30 | | 1 |

Track "Theoretical Physics"

Track "Mathematics"

* Number of study performances and examinations depends on the chosen modules and/or courses

Research Areas

We have identified several core research areas in [mathematics](#) and in [theoretical physics](#) where we foster a fruitful interaction amongst topics as

- Dynamical and Integrable Systems
- Lattice Gauge Theory and Numerical Analysis
- Non-Linear Differential Equations and Early Universe
- Probability Theory and Random Matrices
- Quantum Field Theory and Representation Theory
- Stochastic Analysis and Statistical Mechanics

For the courses on offer during the current and coming semester please follow:

http://ekvv.uni-bielefeld.de/kvv_publ/publ/vvz?id=44334093

Poster Mathematical and Theoretical Physics