| Module title | | | Abbreviation |
|---|---|---|---|
| **Overview Applied Mathematics** | | | 10-M-ANW-Ü-131-m01 |

| Module coordinator | Module offered by |
|---|---|
| Dean of Studies Mathematik (Mathematics) | Institute of Mathematics |

| ECTS | Method of grading | Only after succ. compl. of module(s) |
|---|---|---|
| 12 | numerical grade | -- |

| Duration | Module level | Other prerequisites |
|---|---|---|
| 1 semester | undergraduate | -- |

**Contents**

Two of the following topics in applied mathematics:
**Numerical Mathematics 1** (Solution of systems of linear equations and curve fitting problems, nonlinear equations and systems of equations, interpolation with polynomials, splines and trigonometric functions, numerical integration)
**Numerical Mathematics 2** (Solution methods and applications for eigenvalue problems, linear programming, initial value problems for ordinary differential equations, boundary value problems)
**Stochastics 1** (Combinatorics, Laplace models, selected discrete distributions, elementary measure and integration theory, continuous distributions: normal distribution, random variable, distribution function, product measures and stochastic independence, elementary conditional probability, characteristics of distributions: expected value and variance, limit theorems: law of large numbers, central limit theorem)
**Stochastics 2** (Elements of data analysis, statistics of data in normal and other distributions, elements of multivariate statistics)

**Intended learning outcomes**

The student knows and masters the fundamental methods and notions of some field in applied mathematics. He/She is acquainted with the central concepts and algorithms in this field, can apply them independently and knows about the possibilities and limitations of their applicability.

**Courses** (type, number of weekly contact hours, language — if other than German)

V + Ü (no information on SWS (weekly contact hours) and course language available)

**Method of assessment** (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)

oral examination of one candidate each (approx. 30 minutes); assessment will have reference to the sub-field dealt with in module 10-M-ANW-G as well as an additional sub-field of applied mathematics as selected by the candidate
Language of assessment: German, English

**Allocation of places**

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**Additional information**

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**Workload**

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**Teaching cycle**

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**Referred to in LPO I** (examination regulations for teaching-degree programmes)

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**Module appears in**

Bachelor's degree (1 major) Mathematics (2014)