Module title
Overview Numerical Mathematics 1 and Stochastics 1

Abbreviation
10-M-NUST-Ü-152-m01

Module coordinator
Dean of Studies Mathematik (Mathematics)

Module offered by
Institute of Mathematics

ECTS
12

Method of grading
numerical grade

Only after succ. compl. of module(s)
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Duration
1 semester

Module level
undergraduate

Other prerequisites
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Contents
Solution of systems of linear equations and curve fitting problems, nonlinear equations and systems of equa-
tions, interpolation with polynomials, splines and trigonometric functions, numerical integration; combinatorics,
Laplace models, selected discrete distributions, elementary measure and integration theory, continuous distribu-
tions: normal distribution, random variable, distribution function, product measures and stochastic indepen-
dence, elementary conditional probability, characteristics of distributions: expected value and variance, limit
theorems: law of large numbers, central limit theorem.

Intended learning outcomes
The student is acquainted with fundamental concepts and methods in numerical mathematics and stochastics.
He/She is able to relate these concepts with one another, and realises the advantages of thinking across the
borders of different branches in mathematics.

Courses
(type, number of weekly contact hours, language — if other than German)
V (4) + Ü (2)

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 (20 to 40 minutes)
Assessment will have reference to two topics in applied mathematics as agreed upon with the examiner. Each to-
pic may only be selected as the subject of one examination in the sub-fields Gesamtüberblick (Overview).
Language of assessment: German and/or English

Allocation of places
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Additional information
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Referred to in LPO I
(examination regulations for teaching-degree programmes)
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Module appears in
Bachelor' degree (1 major) Mathematics (2015)