Module title
Overview Ordinary Differential Equations and Partial Differential Equations for Mathematical Physics

Abbreviation
10-M-GDPA-PÜ-152-m01

Module coordinator
Dean of Studies Mathematik (Mathematics)

Module offered by
Institute of Mathematics

ECTS
13

Method of grading
Only after succ. compl. of module(s)

Duration
1 semester

Module level
undergraduate

Other prerequisites
--

Contents
Existence and uniqueness theorem, continuous dependence of solutions on initial values, systems of linear differential equations, matrix exponential series, linear differential equations of higher order; examples of partial differential equations and partial differential equations of first order, existence and uniqueness theorems, basic equations of mathematical physics, boundary value problems, maximum principle and Dirichlet problem.

Intended learning outcomes
The student is acquainted with fundamental concepts and methods in the theory of ordinary and partial differential equations. 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 pure mathematics as agreed upon with the examiner. Each topic may only be selected as the subject of one examination in the sub-field Gesamtüberblick Mathematische Methoden (Overview Mathematical Methods) or in module group Ergänzung Mathematik (Supplementary Topics in Mathematics).
Language of assessment: German and/or English

Allocation of places
--

Additional information
--

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

Module appears in
Bachelor' degree (1 major) Mathematical Physics (2015)
Bachelor' degree (1 major) Mathematical Physics (2016)