Module title			Abbreviation
Ordinary Differential Equations and Complex Analysis			10-M-DFT-072-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)
14	numerical grade	--

Duration	Module level	Other prerequisites
2 semester	undergraduate	--

Contents

Existence and uniqueness theorems on solutions of ordinary differential equations, solution theorems on systems of linear diffferential equations, introduction to the problem of systems of nonlinear differential equations, basic notions in the qualitative theory of ordinary differential equations, basic properties of holomorphic functions, meromorphic functions and conformal maps, basic proof methods in differential equations and complex analysis, applications in computer science, physics, engineering science and other fields of mathematics.

Intended learning outcomes

The student is acquainted with the fundamental concepts and methods of the theory of ordinary differential equations and holomorphic functions. He/she is able to interconnect these concepts 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)

This module comprises 3 module components. Information on courses will be listed separately for each module component.

- 10-M-DFT-1-072: V + Ü (no information on SWS (weekly contact hours) and course language available)
- 10-M-DFT-2-072: V + Ü (no information on SWS (weekly contact hours) and course language available)
- 10-M-DFT-P-072: M (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)

Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments.

Assessment in module component 10-M-DFT-1-072: Ordinary Differential Equations Ordinary Differential Equations

- 5 ECTS, Method of grading: (not) successfully completed
- a) written examination (approx. 90 minutes; usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes)
- Language of assessment: German, English if agreed upon with the examiner

Assessment in module component 10-M-DFT-2-072: Introduction to Complex Analysis Introduction to Complex Analysis

- 7 ECTS, Method of grading: (not) successfully completed
- a) written examination (approx. 90 minutes; usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes)
- Language of assessment: German, English if agreed upon with the examiner

Assessment in module component 10-M-DFT-P-072: Examination in Ordinary Differential Equations and Complex Analysis

- 2 ECTS, Method of grading: numerical grade
- oral examination of one candidate each (approx. 30 minutes)
- Language of assessment: German, English if agreed upon with the examiner
- Only after successful completion of module components: 10-M-DFT-1 or 10-M-DFT-2

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 (2007)