## Module Title

**Basic Differential Equations**

### Module Coordinator

Dean of Studies Mathematik (Mathematics)

### Module Offered by

Institute of Mathematics

### ECTS

5

### 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

Examples and natural appearances of ordinary differential equations, existence and uniqueness theorems (Picard-Lindelöf, Peano), systems of linear differential equations, applications and examples.

### Intended Learning Outcomes

The student is acquainted with methods and concepts of ordinary differential equations. He/She is able to comprehend the central proof methods, can perform easy mathematical arguments and present them in written form. He/She can analyse basic mathematical problems and employ methods of differential equations to solve them.

### Courses

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### Method of Assessment

Written examination (approx. 60 to 90 minutes).

If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate).

### 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

- First state examination for the teaching degree Grundschule Mathematics (2015)
- First state examination for the teaching degree Realschule Mathematics (2015)
- First state examination for the teaching degree Mittelschule Mathematics (2015)