# Module description

<table>
<thead>
<tr>
<th>Module title</th>
<th>Abbreviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overview Analysis for Mathematical Physics</td>
<td>10-M-ANP-Ü-202-m01</td>
</tr>
</tbody>
</table>

## Module coordinator

Dean of Studies Mathematik (Mathematics)

## Module offered by

Institute of Mathematics

## ECTS

16

## Method of grading

numerical grade

## Only after succ. compl. of module(s)

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## Duration

2 semester

## Module level

undergraduate

## Other prerequisites

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## Contents

Real numbers and completeness; complex numbers; basic topological notions; convergence and divergence of sequences and series; power series and Taylor series; basics in differential calculus in one variable; basics of integral calculus in one variable (Riemann integral and improper integral).

Further topological considerations, normed and metric spaces; basics in differential calculus in several variables, Taylor’s theorem for multivariate functions, Banach’s fixed point theorem; inverse function theorem, implicit function theorem.

## Intended learning outcomes

The student knows and masters the essential methods and proof techniques of analysis and is able to apply them independently, He/She has an overview over the fundamental notions and concepts of analysis, their analytic background and geometric interpretation, and can interconnect them and express them adequately in written and oral form.

## Courses

V (4) + V (4) + Ü (2)

## Method of assessment

oral examination of one candidate each (20 to 40 minutes)

Language of assessment: German and/or English

## Allocation of places

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## Additional information

Assessment will have reference to the contents of modules 10-M-ANAP1 and 10-M-ANAP2.

## Referred to in LPO I

(examination regulations for teaching-degree programmes)

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## Module appears in

Bachelor' degree (1 major) Mathematical Physics (2020)