Module title  
Advanced Analysis  
Abbreviation  
10-M-VAN-082-m01

Module coordinator  
Dean of Studies Mathematik (Mathematics)

Module offered by  
Institute of Mathematics

ECTS  
8

Method of grading  
Numerical grade

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

Module level  
Undergraduate

Other prerequisites  
Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew.

Contents  
Lebesgue integral in several variables, including theorems on convergence and Fubini's theorem, $L^p$-spaces and elementary Fourier theory in $L^2$, Gauss's theorem.

Intended learning outcomes  
The student is acquainted with advanced topics in analysis. Taking the example of the Lebesgue integral, he or she is able to understand the construction of a complex mathematical concept.

Courses  
(No information on SWS (weekly contact hours) and course language available)

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Method of assessment  
Written examination (approx. 90 minutes); if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes).

Language of assessment: German, English if agreed upon with the examiner

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's degree (1 major, 1 minor) Mathematics (Minor, 2008)
Bachelor's degree (1 major) Economathematics (2009)
Bachelor's degree (1 major) Economathematics (2008)
Bachelor's degree (1 major) Mathematical Physics (2009)
Bachelor's degree (1 major) Computational Mathematics (2009)
Bachelor's degree (1 major) Physics (2010)
Bachelor's degree (1 major) Physics (2011)
Bachelor's degree (1 major) Nanostructure Technology (2011)
Bachelor's degree (1 major) Nanostructure Technology (2010)
First state examination for the teaching degree Gymnasium Mathematics (2009)