

Data:	GEOTOP MA / Examination number: 10110	Version: 02.07.2024	Start Year: WiSe 2022
Module Name:	Geometry and Topology		
(English):			
Responsible:	Schneider, Friedrich Martin / Prof. Dr.		
Lecturer(s):	Schneider, Friedrich Martin / Prof. Dr.		
Institute(s):	Institute of Discrete Mathematics and Algebra		
Duration:	1 Semester(s)		
Competencies:	<p>Die Studierenden verstehen grundlegende und weiterführende Methoden der Geometrie und Topologie. Sie verfügen über ein Grundverständnis der Zusammenhänge mit anderen Gebieten der Mathematik und besitzen die Fähigkeit, diese Zusammenhänge zur Problemlösung zu nutzen.</p> <p>Students understand basic and advanced methods of geometry and topology. They apprehend connections to other fields of mathematics and acquire the ability to use those connections for problem solving.</p>		
Contents:	<p>Das Modul bietet eine Einführung in Themen der Geometrie und Topologie und behandelt dabei Verknüpfungen mit und Anwendungen in Dynamik, mathematischer Datenanalyse und theoretischer Informatik.</p> <p>The module provides an introduction to a topic within geometry and topology, comprising links to and applications in dynamics, mathematical data analysis, and theoretical computer science.</p>		
Literature:	<p>Burago, D., Burago, Y., Ivanov, S.: A Course in Metric Geometry, American Mathematical Society, 2001.</p> <p>Pestov, V.: Dynamics of Infinite-Dimensional Groups: The Ramsey-Dvoretzky-Milman Phenomenon, AMS Press, 2006.</p> <p>Roe, J.: Lectures on Coarse Geometry, AMS Press, 2003.</p> <p>Shioya, T.: Metric Measure Geometry, European Mathematical Society, 2016.</p> <p>Todorčević, S.: Topics in Topology, Springer, 1997.</p>		
Types of Teaching:	<p>S1 (WS): Lectures (2 SWS)</p> <p>S1 (WS): Exercises (1 SWS)</p>		
Pre-requisites:	<p>Recommendations:</p> <p>Grundlagen der Diskreten Mathematik und Algebra 1, 2021-05-03</p> <p>Grundlagen der Diskreten Mathematik und Algebra 2, 2021-05-03</p> <p>Lineare Algebra 1, 2021-05-03</p> <p>Lineare Algebra 2, 2021-05-03</p>		
Frequency:	yearly in the winter semester		
Requirements for Credit Points:	<p>For the award of credit points it is necessary to pass the module exam.</p> <p>The module exam contains:</p> <p>MP [30 min]</p>		
Credit Points:	6		
Grade:	<p>The Grade is generated from the examination result(s) with the following weights (w):</p> <p>MP [w: 1]</p>		
Workload:	The workload is 180h. It is the result of 45h attendance and 135h self-studies.		