

<b>Module title</b>		<b>Abbreviation</b>
Remote Sensing of Urban Areas		04-GEO-APP7-212-m01
<b>Module coordinator</b>		<b>Module offered by</b>
holder of the Professorship of Remote Sensing		Institute of Geography and Geology
<b>ECTS</b>	<b>Method of grading</b>	<b>Only after succ. compl. of module(s)</b>
5	numerical grade	--
<b>Duration</b>	<b>Module level</b>	<b>Other prerequisites</b>
1 semester	graduate	--
<b>Contents</b>		
<p>The drivers of this global process of urbanization from demographic to economic and the related structural changes cities are facing will be discussed in this course. Remote sensing is one crucial data source in this dynamic transformation and its products are highly relevant for urban planning, as well as environmental management. Within this course different approaches and techniques are covered focusing on deriving relevant information about urbanized areas on different levels of detail. Uni-temporal-, multi-temporal-, and time series based image classification, segmentation, the analyses of point patterns, GIS analyses to assess spatial context and dependencies, as well as analyses in the 3D domain will be addressed in this course. This will be done providing and discussing example applications from different regions globally (e.g. urban sprawl analysis of megacities, the development of new dimensions of urban landscapes such as mega-regions, the rearrangement of business districts within the urban landscape, etc.). You will learn what capabilities Earth observation data, methods and products have for urban research and applications and how to design remote sensing based urban analysis, how to avoid caveats, troubleshoot errors and interpret the results.</p>		
<b>Intended learning outcomes</b>		
<p>Aim of this course is to provide you with an overview on geographic processes of urbanization, the related demographic and structural changes of cities, and data analyses methods using remote sensing data for applications in urban geography.</p>		
<b>Courses</b> (type, number of weekly contact hours, language – if other than German)		
S (1) + Ü (1) Module taught in: English		
<b>Method of assessment</b> (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)		
<p>a) presentation (approx. 30 minutes) or b) preparing a poster (approx. 10 hours total) or c) term paper (approx. 15 pages) Assessment offered: Once a year, summer semester Language of assessment: English or German (assessment will be held in English; in addition, the examiner may, where possible, decide to hold assessment in German) creditable for bonus</p>		
<b>Allocation of places</b>		
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<b>Additional information</b>		
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<b>Workload</b>		
150 h		
<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)		
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<b>Module appears in</b>		
Master's degree (1 major) Applied Earth Observation and Geoanalysis (EAGLE) (2021)		