

Module title		Abbreviation
Hyperspectral Remote Sensing		04-GEO-MET6-212-m01
Module coordinator		Module offered by
holder of the Professorship of Remote Sensing		Institute of Geography and Geology
ECTS	Method of grading	Only after succ. compl. of module(s)
5	numerical grade	--
Duration	Module level	Other prerequisites
1 semester	graduate	--
Contents		
<p>Spectroscopy and hyperspectral remote sensing enables to retrieve very detailed spectral information about a certain surface in dense bandwidth intervalls. Information on the “spectral fingerprints” of surfaces is then available in a near-continuous manner. This allows for the differentiation of materials, such different geologic surfaces, different urban materials, or plants of different composition and vigor. Especially field- and laboratory spectroscopy has shown many benefits, as measurements can be carried out in a controlled environment, and can be directly visualized and explained. This course provides insights into practical experiments using a field spectrometer, and subsequent data analysis to assess key environmental parameters such as plant health, soil moisture content, and geologic composition.</p>		
Intended learning outcomes		
<p>The content of this course includes both the theoretical background of field and imaging spectroscopy, as well as practical experiments and subsequent data analysis. It is the aim to gain knowledge and understanding of the following particular topics: the theoretical background of field and imaging spectroscopy, general reflectance and transmittance properties of plant leaves, canopies and soils, the quantification of biophysical and biochemical properties using spectroscopic measurements, feature parametrization and regression analysis, the advantages and challenges of existing and planned hyperspectral spaceborne sensors</p>		
Courses (type, number of weekly contact hours, language – if other than German)		
S (1) + Ü (1) Module taught in: English		
Method of assessment (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>		
Allocation of places		
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Additional information		
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Workload		
150 h		
Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Module appears in		
Master's degree (1 major) Applied Earth Observation and Geoanalysis (EAGLE) (2021)		