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

Spectroscopy and hyperspectral remote sensing enables to retrieve very detailed spectral information about a certain surface in dense bandwith 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.

Intended learning outcomes

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

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)

a) presentation (approx. 30 minutes) or
b) preparing a poster (approx. 10 hours total) or
c) term paper (approx. 15 pages)
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)
Assessment offered: Once a year, summer semester
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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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)

JMU Würzburg • generated 18.04.2025 • Module data record 140028