

Syllabus

Kursbeschreibung

Titel der Lehrveranstaltung	Umweltgeomatik und Fernerkundung
Code der Lehrveranstaltung	40202
Zusätzlicher Titel der Lehrveranstaltung	
Wissenschaftlich-disziplinärer Bereich	AGRI-04/C
Sprache	Italienisch
Studiengang	Bachelor in Agrar-, Lebensmittel- und Bergumweltwissenschaften
Andere Studiengänge (gem. Lehrveranstaltung)	
Dozenten/Dozentinnen	dr. Massimiliano Schiavo, Massimiliano.Schiavo@unibz.it https://www.unibz.it/en/faculties/agricultural-environmental-food-sciences/academic-staff/person/51418
Wissensch. Mitarbeiter/Mitarbeiterin	
Semester	Zweites Semester
Studienjahr/e	3
KP	6
Vorlesungsstunden	36
Laboratoriumsstunden	24
Stunden für individuelles Studium	90
Vorgesehene Sprechzeiten	18
Inhaltsangabe	The course is based on theoretical and practical learning of topics related to Environmental Geomatics and Remote Sensing. The course objectives are to acquire (i) basic knowledge for understanding and using geospatial data; (ii) notions of geomatics, geodesy, and topography; (iii) ability to analyze geospatial information, like geomatics/topographic, environmental, geological, urbanistic, and agronomic data; (iv) basic skills in topographic

	georeferenced surveying and measurements in the field; (v) ability to process information for the preparation of technical reports.
Themen der Lehrveranstaltung	- basics of geodesy, cartography, and topography - use of raster and vector data - analysis of territorial and geospatial data - theoretical foundations and practical application of GPS survey systems and their use in conjunction with territorial data
Stichwörter	GIS, geomatics, geodesy, topography, raster data, vectorial data, GPS, territorial datasets
Empfohlene Voraussetzungen	- fundamentals of logic, mathematics, and physics - basic use of Microsoft Excel
Propädeutische Lehrveranstaltungen	no
Unterrichtsform	- frontal lectures, pc exercises, field application - didactic material: frontal lectures, slides, blackboard, and personal notes to be taken during the lectures
Anwesenheitspflicht	no
Spezifische Bildungsziele und erwartete Lernergebnisse	Knowledge and understanding - Know the main methods and tools, both optical and digital, of geomatics and remote sensing; - Know the types of existing digital data (optical and LiDAR) and the main methods for acquiring them; - Know how to apply and use geomatics and georeferenced spatial information for land planning and management. Ability to apply knowledge and understanding - Know the difference between raster and vector data - Know the properties of raster and vector data, their spatial resolution, and the reference system - Import, manage, and use digital raster and vector data from the main digital data acquisition systems; - Analyze data using free specialized geomatics software (QGIS) and numerical calculations (Microsoft Excel, MATLAB). - Access digital territorial databases, download data, and use them on GIS platforms. - Be able to use basic GPS tools in the field to acquire georeferenced points, use field points for basic topographic and agronomic measurements, and integrate field data with

	information from databases. Making independent judgments - Ability to identify methods for acquiring, analyzing, and using geospatial data. - Ability to integrate geomatics, topographic, environmental, geological, urban planning, and agronomic data to prepare technical reports on territorial issues. Communication skills - Use technical language. - Ability to structure and implement technical documentation related to project activities. Learning skills Ability to independently study and critically evaluate data types and the tools and methods used to collect and process them in territorial analysis.
Spezifisches Bildungsziel und erwartete Lernergebnisse (zusätzliche Informationen)	
Art der Prüfung	written test
Bewertungskriterien	- Independent judgment, analysis, and evaluation of territorial datasets - Ability to use basic techniques on the QGIS platform and, if necessary, reprocess them in other computing environments - Ability to connect different topics to solve case studies based on real data
Pfichtliteratur	(personal) lecture notes and slides provided by the teacher
Weiterführende Literatur	any bibliographical support will be communicated in class by the teacher
Weitere Informationen	
Ziele für nachhaltige Entwicklung (SDGs)	Sauberes Wasser und Sanitär-Einrichtungen, Bezahlbare und saubere Energie, Industrie, Innovation und Infrastruktur, Leben an Land, Nachhaltiger Konsum und Produktion, Maßnahmen zum

	Klimaschutz, Nachhaltige Städte und Gemeinden
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