Module code	1.	Module description	2.	Category	3.
MBI 2510 Stand: 15.06.2023		Geodesign		Int. Master	
		Degree program	4.	Sustainable Engineering of Infrastructure	
		Faculty	5.	Civil Engineering and Conservation / Restoration	

Module supervisor	6.	Prof. Dr.-Ing. Robert Kaden
Type of module	7.	P (obligatory)
Frequency	8.	Annually
Standard semester of study	9.	2nd semester
Credits (ECTS)	10.	5 ETCS
Assessment	11.	Practical task/exercise (continuous assessment) Practical work with report/proof of attendance
Language of instruction	12.	English
Admission requirements	13.	-
Module is a requirement for	14.	-
Module duration	15.	1 semester
Mandatory registration	16.	No
Applicability of module	17.	Civil Engineering

Course 18.	Lecturer 19.	Type 20.	No. of students (max.) 21.	No. of courses per week 22.	Contact hours per week 23.	Workload	
						Face-to-face 24.	Self-study 25.
1 Geoinformation Technology	Prof. Dr. Kaden	Seminar	25	1	2	30	30
2 Geodesign Project	Prof. Dr. Kaden	Seminar	25	1	2	30	60
					Total	**4**	**60**	**90**
				Workload for the module	26.		**150**

Learning objectives	27.	After successful participation in the course, the students are familiar with the concepts and methods of geoinformatics, they are familiar with Geographic Information Systems (GIS) and are trained in the use of multi-layered and differently structured, open geodata (data models and formats). In addition, the students are able to include spatio-semantic aspects of a design of a planned infrastructure in a GIS and to analyse its inventions to the environment and visualise the results e.g. for decision support.
Course contents	28.	The contents of the module are as follows: • Basic concepts and methods of geoinformatics

		- Principles and functions of Geographic Information Systems - Structure, content and sources of (open) geodata - Geo Web Services and Geodata Infrastructures (GDI) - Object-oriented geodata models (UML) and derivation of relational database schemes - Geodata analysis of raster and vector data - Design and layout of thematic maps
Preliminary exam requirements and assessment	29.	- Practical exercises (min. 80%) - Project work and written report
Literature	30.	- Bill: Grundlagen der Geoinformationssysteme, Wichmannverlag - Kraus: Photogrammetrie III: Topographische Informationssysteme, Dümmler