

Modulbezeichnung/ module notation	<b>13. River Morphology</b>
Modulniveau/ module level	Master
Studiensemester/ semester	2
Kürzel/ abbreviation	RM
Lehrveranstaltungen/ courses	13.1 River Morphology
	13.2 Sediment transport
	13.3 Planning and Projects
	13.4 Sedimentation and Erosion
Modulverantwortlicher/ module responsible	Prof. Dr.-Ing. Bernd Ettmer
Dozent(in)/ lecturer	Dr.-Ing. Francisco Nuñez-Gonzalez Prof. Dr.-Ing. Juan P. M. Vide Prof. Dr.-Ing. Oscar Link Prof. Dr.-Ing. Jochen Aberle, Prof. Dr.-Ing. Bernd Ettmer
Sprache/ language	english
Zuordnung zum Curriculum/ correlation to curriculum	Optional course
Lehrform/SWS/ teaching form/contact hours	6 SWS lecture
Arbeitsaufwand/ amount of work	180 h
Kreditpunkte/ credit points	6
Voraussetzungen nach Prüfungsordnung/ requirements	Bachelor degree
Empfohlene Voraussetzungen/ recommended requirements	Hydraulics, Hydrology, Fluid Mechanics and Physics
Form der Prüfung/ form of exam	Homework or written examination
Angestrebte Lernergebnisse/ target educational objective	Students are able to describe and analyse morphological processes in rivers and reservoirs. They are able to calculate and predict morphological processes.
13.1: River Morphology (Nuñez, Vide)	Basics in river morphology. Definition of sediment particles, Calculation of initiation of motion of sediment particles, calculation of settling velocities, Erosion and sedimentation basics, sharp bents, scouring and deposition.
13.2: Sediment transport (Link)	Sediment transport processes in rivers and reservoirs, Calculation and prediction of sediment transport by using typical approaches and equations. Differentiation between bed load and suspension load calculations.

13.3: Planning and Projects (Ettmer)	Application of sedimentation and erosion processes to an international hydraulic engineering project. Calculation, interpretation and prediction of morphological processes. Using a 1D-model for morphological calculation.
13.4: Sedimentation and Erosion (Aberle)	Understanding of sediment transport mechanisms and basic concepts for gravel bed rivers, Classification of sediment transport processes, Critical shear stress concept and incipient motion for granular material, Armour layer development, Examples of Bed load and Suspended sediment transport and Reservoir sedimentation.
Medienformen/ used media	Script, Powerpoint presentation, White board
Literatur/ literature	