

<b>Module code</b> (1.)	<b>Module description</b> (2.)	<b>Category</b> (3.)
MBI 2520 Stand: 07.10.2021	Ground Improvement and Piling	Int. Master
	<b>Degree program</b> (4.)	Sustainable Engineering of Infrastructure
	<b>Faculty</b> (5.)	Civil Engineering and Conservation / Restoration

<b>Module supervisor</b> (6.)	Prof. Dr.-Ing. Wolfgang Wehr
<b>Type of module</b> (7.)	P (obligatory)
<b>Frequency</b> (8.)	Annually
<b>Standard semester of study</b> (9.)	2nd semester
<b>Credits (ECTS)</b> (10.)	5 ETCS
<b>Assessment</b> (11.)	Colloquium
<b>Language of instruction</b> (12.)	English
<b>Admission requirements</b> (13.)	-
<b>Module is a requirement for</b> (14.)	-
<b>Module duration</b> (15.)	1 semester
<b>Mandatory registration</b> (16.)	No
<b>Applicability of module</b> (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 Ground Improvement and Piling	Prof. Dr. Wehr	Lecture	25	1	2	30	30	
2 Ground Improvement and Piling	Prof. Dr. Wehr	Tutorial	25	1	2	30	60	
Total					<b>4</b>	<b>60</b>	<b>90</b>	
<b>Workload for the module</b> (26.)							<b>150</b>	

<b>Learning objectives</b> (27.)	Theory and practice of ground improvement and piling techniques. Carbon calculator.
<b>Course contents</b> (28.)	<p>Ground improvement techniques – execution and design</p> <ul style="list-style-type: none"> <li>• vertical drains</li> <li>• vibro compaction</li> <li>• vibro stone columns, vibro concrete columns</li> <li>• deep mixing</li> <li>• rigid inclusions</li> <li>• jet grouting</li> </ul> <p>Piling techniques</p> <ul style="list-style-type: none"> <li>• bored piles</li> <li>• driven piles</li> </ul>

	<ul style="list-style-type: none"> <li>• micropiles</li> </ul> <p>Comparison of piling and ground improvement techniques with the carbon calculator.</p>
<b>Preliminary requirements and assessment</b>	<p style="text-align: right;">(29.)</p> <ul style="list-style-type: none"> <li>• The module is assessed by means of an oral examination in the form of a colloquium</li> </ul>
<b>Literature</b>	<p style="text-align: right;">(30.)</p> <ul style="list-style-type: none"> <li>• Handbuch Geotechnik (Boley)</li> <li>• Ground improvement (Kirsch)</li> </ul>