Module number	Module name	Module coordinator
BIW-MA-<mark>AC-O-XXX</mark>	Structural health monitoring – digital maintenance	Prof. Dr.-Ing. Steffen Marx
Learning goals	Students know the basic processes of infrastructure maintenance and options for its digitalization. They are able to design a shm-system for continuous supervision of damage processes in road and bridge constructions. They know methods of sensor data acquisition and processing as well as gathering measurement-based information on current condition and its prediction.	
Content	Introduction in Infrastructure maintenance of road and railway systems, legal requirements, digital twins and their possibilities for predictive maintenance, physical and data-based prediction models of condition indicators, basic physical principles for building-related measurements, typical sensors in shm systems and their conditions of use, design of monitoring systems and their integration into maintenance processes	
Teaching and learning methods	4 SWS lectures, 2 SWS exercises, self studies, laboratory testing, excursion	
Prerequisites	Prerequisites are knowledge in the field of numerical-mathematical analysis, programming as well as structural enginering on the level of a bachelor study.	
Applicability		
Requirements for earning credit points		
Credit points and grades		
Module frequency		
Workload		

Module duration	
Recommended reading list	