

<b>Module level</b> Master	<b>Creditpoints</b> 6	<b>Language</b> English	<b>Return</b> annual
<b>Module designation</b>			
Control and Operational Management for Wind Turbines and Wind Farms			
<b>Course(s)</b>			
Control and Operational Management for Wind Turbines and Wind Farms			
<b>Code</b>	<b>Subtitle</b>		
<b>Person responsible for the module</b>	Prof. Dr. rer. nat. Clemens Hoffmann		
<b>Lecturer</b>	Boris Fischer, Melanie Hau		
<b>Workload</b>	180 h (30 h contact time, 60 h homework / presentation, 90 h private study)		
<b>Relation to curriculum</b>	Specialist studies, Electrical Systems Technology, elective		
<b>Type of teaching, contact hours</b>	Online–units, virtual classrooms, online presentations		
<b>Requirements according to examination regulations</b>	None		
<b>Recommended prerequisites</b>	None		
<b>Module objective / intended learning outcomes</b>			
<p>This course deals with control related topics of both wind turbines and wind parks. At the end of the course, the students should be familiar with main control problems in wind energy and should be able to apply common solutions. This comprises the following fields.</p> <ul style="list-style-type: none"> <li>• Aims of control and important interactions, e.g. turbine control system – structural loads, wind park control – electrical grid</li> <li>• Systematic controller design</li> <li>• Insight into advanced research topics</li> </ul>			
<b>Content</b>			
<ul style="list-style-type: none"> <li>• Modeling of wind turbines and wind parks for control applications</li> <li>• Grid codes and basics of grid control</li> <li>• Strategies for controlling <ul style="list-style-type: none"> <li>○ Wind turbines below and above rated wind speed</li> <li>○ Wind farms for active and reactive power provision</li> </ul> </li> <li>• Certification guidelines and common simulation tools</li> </ul>			
<b>Study and examination requirements and forms of examination</b>	Homework (12–15 ) and Online Presentation and Examination: multiple choice test (30 min, 33% of the grade), oral exam (20 min, 66% of the grade)		
<b>Media employed</b>	online script		
<b>Reading list</b>			
Reading list will be provided by lecturer via Moodle online platform.			