

Modul 2-38: SMART GRIDS					ETIT-296	
Turnus	Dauer	Studienabschnitt	LP	Präsenzanteil	Eigenstudium	
Jährlich zum SS	1 Semester	2. Semester	6	55 h	125 h	
<b>1</b>	<b>Modulstruktur</b>					
	<b>Nr.</b>	<b>Element / Lehrveranstaltung</b>	<b>LSF-Nr.</b>	<b>Typ</b>	<b>SWS</b>	
	1	Smart Grids Lecture	08 0102	V	3	
	2	Smart Grids Practical works	08 0103	P	1	
<b>2</b>	<b>Lehrveranstaltungssprache</b> Englisch					
<b>3</b>	<b>Lehrinhalte</b> This course will handle the following aspects of the changing electrical energy network: <ol style="list-style-type: none"> <li>1. Energy transition</li> <li>2. New Distribution Grid Users</li> <li>3. Electro-mobility.</li> <li>4. Conventional Distribution Grid and their Transformation</li> <li>5. State Estimation</li> <li>6. Congestion Management (Voltage CM and Thermal CM)</li> <li>7. Protection and control functions</li> <li>8. Timeseries Based Planning</li> <li>9. Grid Automation and future trends</li> </ol>					
<b>4</b>	<b>Kompetenzen</b> The students successfully finishing the course should be able to <ul style="list-style-type: none"> <li>• understand the challenges in today's and future electrical energy distribution grids</li> <li>• comprehend the multiple areas of research done in the distribution grids</li> <li>• develop new solution approaches for energy system problems based on their acquired knowledge through lectures and practical works</li> </ul>					
<b>5</b>	<b>Prüfungen</b> <i>Modulprüfung:</i> oral exam (max. 30 minutes) oder written exam (max. 120 minutes) * <i>Studienleistungen:</i> Active participation in practical works (laboratory tasks, presentations, etc.) is also a prerequisite to participate in the examination  * The responsible lecturer will announce the mode of the examination two weeks after the start of the lecture at the very latest.					
<b>6</b>	<b>Prüfungsformen und -leistungen</b> <input checked="" type="checkbox"/> Modulprüfung <input type="checkbox"/> Teilleistungen					
<b>7</b>	<b>Teilnahmevoraussetzungen</b> Basic knowledge in Electrical Energy Engineering					
<b>8</b>	<b>Modultyp und Verwendbarkeit des Moduls</b> Wahlpflichtmodul im Masterstudiengang „Elektrotechnik und Informationstechnik“, Studienschwerpunkte „Elektrische Energietechnik“					
<b>9</b>	<b>Modulbeauftragte/r</b> Dr.-Ing. Ulf Häger		<b>Zuständige Fakultät</b> Fakultät für Elektrotechnik und Informationstechnik			