

Modulbezeichnung	Sustainability of chemical processes	
Modulbezeichnung (eng.)	Sustainability of chemical processes	
Semester (Häufigkeit)	null (jedes Wintersemester)	
ECTS-Punkte (Dauer)	5 (1 Semester)	
Art	Pflichtmodul	
Studentische Arbeitsbelastung	60 h Kontaktzeit + 90 h Selbststudium	
Voraussetzungen (laut BPO)		
Empf. Voraussetzungen		
Verwendbarkeit	DEL	
Prüfungsform und -dauer	Mündliche Prüfung oder Klausur 1,5h	
Lehr- und Lernmethoden	Vorlesung	
Modulverantwortliche(r)	M. Rüsç gen. Klaas	
Qualifikationsziele At the end of the semester the students are able to • compare the energetic and material sustainability of different chemical processes leading to equivalent products • relate new processes to existing ones and understand their function in the interdependent net of the chemical industry, by • the knowledge of the main inorganic and organic chemical processes in chemical industry, • the understanding of their interdependency, • the ability to properly apply the principles of green chemistry • the application of qualitative and quantitative methods to compare the material and energetic sustainability of chemical processes, to • develop more sustainable processes while taking into account industrial requirements.		
Lehrinhalte Fundamentals of the chemical industry, the primacy of selectivity, co- and byproducts, atom utilization, efficiency factor, thermodynamic and kinetic energy requirements, catalysis, downstream processing, energy and material crosslinks, the sustainability of current inorganic processes (e.g. technical gases, ammonium, sulfuric acid, phosphoric acid, sodium hydroxide, soda), the sustainability of petrochemistry (steam cracker, basic organics and selected intermediates), sustainability of oxidation processes, strategies for improvement, nature's alternatives.		
Literatur A detailed list of literature is supplied to the students and will be explained at the beginning of the module.		
Lehrveranstaltungen		
Dozenten/-innen	Titel der Lehrveranstaltung	SWS
M. Rüsç gen. Klaas	Sustainability of chemical processes, Vorlesung	4