

Modulbezeichnung	Biomass
Modulbezeichnung (eng.)	Biomass
Semester (Häufigkeit)	5 (jedes Wintersemester)
ECTS-Punkte (Dauer)	5 (1 Semester)
Art	Pflichtmodul
Sprache(n)	English
Studentische Arbeitsbelastung	60 h Kontaktzeit + 90 h Selbststudium
Voraussetzungen (laut BPO)	
Empf. Voraussetzungen	
Verwendbarkeit	BEEEE
Prüfungsart und -dauer	Mündliche Prüfung oder Klausur 1,5 h (PL)
Lehr- und Lernmethoden	Vorlesung, Praktikum
Modulverantwortliche(r)	M. Rüscher gen. Klaas

Qualifikationsziele

At the end of the semester the students are able to

- use various approaches of energy production from biomass,
- align properties of various types of biomass to utilization techniques,
- estimate the limitation of energy production from biomass

by

- the knowledge of structures and properties of various biomass types,
- differentiating between waste and agricultural production,
- understanding the basics of biomass production,
- understanding and selecting appropriate conversion techniques,
- preparing a liquid fuel from waste biomass in the lab and analyzing its properties

to

- integrate the energy production from biomass in e.g. industrial, communal and agro energy systems

Lehrinhalte

Biomass types and their origins, photosynthesis and its efficiency, lignocellulose biomass, lipid biomass, carbohydrate biomass, bio refineries, biomass as a solid fuel, charcoal, the C,H,O triangle, gasification and hydrogenation, biogas, 1st and 2nd generation liquid fuels, Fischer-Tropsch and related processes, biomass use and land use, carbon dioxide impact of biomass use, food vs. fuel.

The module is completely in English.

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. Rüscher gen. Klaas	Biomass, Vorlesung	2
M. Rüscher gen. Klaas	Biomass, Praktikum	2