

Modulbezeichnung	Microbial Ecology
Modulbezeichnung (eng.)	Microbial Ecology
Semester (Häufigkeit)	5 (jedes Wintersemester)
ECTS-Punkte (Dauer)	4 (1 Semester)
Art	Pflichtmodul / Compulsory Subject
Sprache(n)	English or German
Studentische Arbeitsbelastung	45 h Kontaktzeit + 75 h Selbststudium
Voraussetzungen (laut BPO)	
Empf. Voraussetzungen	
Verwendbarkeit	BBT, BBTPV
Prüfungsart und -dauer	Vorlesung: Klausur 1 h oder mündliche Prüfung (Prüfungsleistung) und Referat (20 Minuten): (Studienleistung) / written exam 1 h and oral presentation (20 minutes)
Lehr- und Lernmethoden	Vorlesung, Seminar / lecture, seminar
Modulverantwortliche(r)	C. Gallert

Qualifikationsziele

After completion of the module students will be able to ...

- assign reactions of the most important material cycles to corresponding microorganisms and to estimate their turnover potential,
- assess the genetic basis necessary for substance transformation processes and the corresponding regulatory mechanisms,
- select and use basic terms of microbial ecology in the appropriate context

by ...

- assigning metabolic activities to corresponding enzymes and relevant microbial actors
- evaluating regulatory mechanisms in terms of their hierarchies and differences
- searching relevant and current literature about topics from the corresponding lecture and communicating in short presentations

In order to ...

- generate and reflect on an in-depth knowledge of microorganisms and their metabolic performance in different ecosystems
- be able to assess potential applications of microbial ecosystem services and to plan different technical application processes
- be able to evaluate and assess practical examples from the literature

Lehrinhalte

The course is held in English or German. The language will be determined with the students at the beginning of the semester.

Microbial reactions in carbon- (mineralization, methanogenesis), nitrogen-, sulfur- and iron- cycles, levels of regulation in procaryotic metabolism (from DNA structure to post-translation regulation), syntrophy, competition, cooperation, R and K strategy, threshold, biofilms.

Literatur

Walter Reineke, Michael Schlömann: Environmental Microbiology, Springer Spektrum Berlin, Heidelberg, 1st ed., 2023.

David L. Kirchman: Processes in Microbial Ecology, Oxford University Press, 2nd ed., 2018.

Up-to-date papers from diverse journals.

Lehrveranstaltungen

Dozenten/-innen	Titel der Lehrveranstaltung	SWS
C. Gallert	Microbial Ecology, Lecture	2
C. Gallert	Microbial Ecology, Seminar	1