



- a. Overview of the climate, paleoecology and ecosystem dynamics during the Quaternary
  - b. Migration and colonization on a regional and continental scale; glacial (micro- and cryptic) refugia
  - c. Late Quaternary history of ecosystems in western Europe
  - d. The interplay between the concentration of greenhouse gasses and ecosystems during glacial-interglacial cycles
  - e. The interplay between humans and nature
- 3 Temporal dynamics of ecosystems on a time-scale between 10s to 100s of years
- a. Interactions between rare disturbances, natural succession and metapopulation dynamics
  - b. Re-organisation of stable states

#### Initial competences

Passed the exams of 'Ecology (Ba1)', 'Biogeography (2Ba)' and 'Community and systems ecology (3Ba)' or obtained the relevant knowledge within similar courses

#### Final competences

- 1 Demonstrating an advanced knowledge on the causes and timing of Quaternary climate changes (natural and anthropogenic) in relation to the long-term history of the biosphere.
- 2 Demonstrating an advanced insight into the importance of (non-linear) temporal dynamics for ecosystem processes, the distribution and evolution of biota and the biotic components of biogeochemical cycles on time scales ranging from hours to millions of years.
- 3 Demonstrating an advanced knowledge on the historical interactions between humans, climate and nature.

#### Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

#### Conditions for exam contract

This course unit cannot be taken via an exam contract

#### Teaching methods

Seminar, Lecture, Independent work

#### Extra information on the teaching methods

on campus lectures, online directed PC exercises, self-directed learning

#### Study material

Type: Slides

Name: Slides ecosystem dynamics

Indicative price: € 15

Optional: no

Language : English

Oldest Usable Edition : 2023

Available on Ufora : Yes

Online Available : No

Available in the Library : No

Available through Student Association : No

#### References

'The Holocene: an environmental history' by Neil Roberts (Blackwell, 1998, ISBN 0-631-18638-7).

Ecosystem Dynamics: From the past to the future' by Richard H.W. Bradshaw & Martin T. Sykes (Wiley Blackwell, 2014, ISBN 978-1-1199-7077-4).

#### Course content-related study coaching

Individual feedback with lecturers, directed online PC exercises with time for interaction between the student and the supervisor

#### Assessment moments

end-of-term and continuous assessment

#### Examination methods in case of periodic assessment during the first examination period

Written assessment with open-ended questions

**Examination methods in case of periodic assessment during the second examination period**

Written assessment with open-ended questions

**Examination methods in case of permanent assessment**

Participation, Peer and/or self assessment, Assignment

**Possibilities of retake in case of permanent assessment**

examination during the second examination period is possible in modified form

**Extra information on the examination methods**

Questions regarding the knowledge and insights in the course content during the periodic exam and evaluation of the oral report for the non-periodic evaluation.

Permanent evaluation during the practical courses.

**Calculation of the examination mark**

75% exam and 25% non-periodic evaluation