



Faculty of Health, Science and Technology
Biology

Syllabus

Landscape Ecology

Course Code:

BIAD16

Course Title:

Landscape Ecology
Landskapsekologi

Credits:

15

Degree Level:

Master's level

**Progressive
Specialisation:**

Second cycle, has only first-cycle course/s as entry requirements (A1N)

Major Field of Study:

BIA (Biology)

Course Approval

The syllabus was approved by the Faculty of Health, Science and Technology 2025-08-25, and is valid from the Spring semester 2026 at Karlstad University.

Prerequisites

75 ECTS credits in Biology, including 15 ECTS credits in Ecology at the G2F or advanced level, and upper secondary level English 6 or English level 2, or equivalent

Learning Outcomes

Upon completion of the course, in order to receive a Pass (G), students should be able to:

1. demonstrate knowledge of landscape ecological theories and the effects of time and space and use it to discuss various conservation issues,
2. apply landscape ecological theories and methods to analyses of flora and fauna at the landscape level,
3. conduct and critically review a landscape ecological investigation based on a specific problem,
4. apply basic GIS tools to study landscape ecology issues,
5. demonstrate knowledge of goals and regulations related to landscape ecology issues and

relevant conservation issues, and

6. summarise and present the content of scientific literature related to landscape ecology.

Upon completion of the course, in order to receive a Pass with Distinction (VG), students should also be able to:

- A. apply their knowledge of landscape ecological theories and the effects of time and space to formulate problems related to various conservation issues,
- B. apply their knowledge to critically examine and communicate theories, complex problems, and research results related to issues covered in the course, and
- C. integrate knowledge and analyse, evaluate, and present data from complex studies in this area of research.

Content

The course treats how changes in the landscape affect ecosystems and species distribution, how the composition, structure, and function of the landscape change, and how humans manage landscapes. The course highlights how landscape ecology, with its focus on spatial patterns, is important for various conservation issues.

The course starts with a theoretical component in which landscape ecological concepts and theories are presented. Different approaches to gathering field data at the landscape level are compared. The course also addresses the basics of GIS and remote sensing for application in landscape ecology and relevant regulations related to landscape ecological issues.

A large part of the course is devoted to conducting a landscape ecological study. In groups, students collect landscape ecological data using GIS and write a report that is presented in groups. To gain a deeper understanding, students read and critically review scientific articles and chapters from the course literature that are then discussed in seminar groups.

The course comprises

- a theoretical component based on lectures on selected parts of the course literature
- practical exercises
- literature seminars where selected parts of the course literature or scientific articles are discussed
- a project in which landscape ecological data are processed, analyzed, and reported orally and in writing
- an individual written exam on landscape ecological theories.

Reading List

See separate document.

Examination

Learning outcomes 1, A, and B are assessed based on an individual written exam.

Learning outcomes 2, 3, 4, and C are assessed based on written and oral group presentations of the study project.

Learning outcomes 5, 6, and B are assessed based on individual assessment of seminar performance and exercises.

If students have a decision from Karlstad University entitling them to Targeted Study Support due to a documented disability, the examiner has the right to give such students an adapted examination or to examine them in a different manner.

Grades

One of the grades Distinction (VG), Pass (G), or Fail (U) is awarded in the examination of the course.

Quality Assurance

Follow-up relating to learning conditions and goal-fulfilment takes place both during and upon completion of the course in order to ensure continuous improvement. Course evaluation is partly based on student views and experiences obtained in accordance with current regulations and partly on other data and documentation. Students will be informed of the result of the evaluation and of any measures to be taken.

Course Certificate

A course certificate will be provided upon request.

Additional information

The local regulations for studies at the Bachelor and Master levels at Karlstad University stipulate the obligations and rights of students and staff.