



Faculty of Health, Science and Technology  
Biology

# Syllabus

## Scientific Methods in Freshwater Ecology

<b>Course Code:</b>	BIAD12
<b>Course Title:</b>	Scientific Methods in Freshwater Ecology <i>Vetenskapliga metoder i sötvattensekologi</i>
<b>Credits:</b>	15
<b>Degree Level:</b>	Master's level
<b>Progressive Specialisation:</b>	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 2012-03-08, and is valid from the Autumn semester 2012 at Karlstad University.

### Prerequisites

At least 75 completed course credits in Biology, including 15 ECTS cr in ecology (or equivalent) and a Degree Project 15 ECTS cr.

### Learning Outcomes

Upon completion of the course, students should be able to:

- plan and complete water sampling and electrofishing in accordance with research guidelines and with the requirements of certification,
- use and explain ecological models, for example, population dynamics and genetic models, and evaluate these models scientifically,
- use theories of manipulative and non-manipulative experiments and field studies in order to plan such explorations,
- suggest suitable statistical analysis models, means of illustration and oral and written techniques of presenting collected research data in limnic environments.

### Content

Instruction is project-based with regard to five themes:

1. Experimental design of manipulative experiments as well as non-manipulative investigations
2. Sampling in fresh water environments
3. Using ecological models
4. Scientific analysis, statistics, and academic writing and oral presentation
5. Academic writing of project and application planning

In each theme lectures, excursions, group exercises and individual writing assignments alternate and are treated in seminar.

**Reading List**

See separate document.

**Examination**

The certification components are assessed on the basis of mandatory attendance while all other assessments are based on written individual reports and essays, reviewed and discussed in seminars with fellow-students and teachers.

**Grades**

One of the grades Fail (U), Pass (G), or Distinction (VG) is awarded in the examination of the course. Assessment criteria for the grade of Distinction are stated in the study guides.

**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.

Excursions may entail extra costs for the students.