



Board of Teacher Education
Biology

Syllabus

Biology and Biology Teaching 5

Course Code:	BIAL92
Course Title:	Biology and Biology Teaching 5 <i>Biologi med didaktisk inriktning 5</i>
Credits:	22.5
Degree Level:	Master's level
Progressive Specialisation:	Second cycle, has second-cycle course/s as entry requirements (A1F)

Major Field of Study:

Course Approval

The syllabus was approved by the Board of Teacher Education 2015-05-19, and is valid from the Autumn semester 2016 at Karlstad University.

Prerequisites

BIGL01, BIGL02 and BIGL03, or equivalent.

Learning Outcomes

The aim of the course is that students deepen their understanding of their future profession as teachers and develop sound and relevant knowledge of biology and sustainable development on the basis of a subject-specific educational perspective. On the basis of subject knowledge students are expected to develop skills in stimulating greater understanding for the importance of a natural science approach to issues of social relevance.

Module 1 and Module 2a are taken by students whose first programme subject was biology and whose second subject included a 15 ECTS-credit independent project. Students who have not completed an independent 15-credit project take module 1 and module 2b.

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

Module 1, Teaching and Learning for Sustainable Development, 7.5 ECTS cr.

1. describe and give an account of the concept sustainable development and its different aspects such as ecological, economic and social perspectives,
2. give an account of and discuss various research theories of global development issues and environmental problems, climate change as well as ecological processes and ecosystem services,
3. discuss how we affect ecological processes, exploit natural resources, and how lifestyles impact on global environmental problems and a sustainable society in terms of science theories,
4. reflect on sustainable development in relation to intercultural, global and democratic issues as well as to aspects of equity and equality,
5. describe and give an account of educational theories on sustainable development, global environment issues and how national and international guidelines affect teaching,
6. discuss the concept of sustainable development in relation to the teaching profession.

Module 2a, Floristics and Faunistics, 15 hp

1. determine plants, lichens, macroscopic fungi and algae with the help of literature,
2. without aids identify common Nordic vascular plants, their kinship and identify a number of common mosses, lichens, fungi and algae,
4. describe different plant communities,
5. with the help of literature determine animals and animal groups belonging to the Nordic fauna,
6. without the help of literature identify common animals and animal groups in the Nordic fauna,
7. describe different habitats and adaptations among common animals and animal groups in the Nordic fauna
8. plan and conduce teaching on the basis of theories on outdoor teaching,
9. discuss and reflect on what is meant by the concept ecological literacy and analyse the impact of pupils' conception of the concept on their interpretations of nature observations,
10. discuss and reflect on how models, representations and visualisations are used in biology education and analyse the potentials and limitations of the use with a focus on digital media,
11. discuss and reflect on the structure of the biology subject at different organisational levels and systems and give an account of the importance attributed to this structure in relation to biology education theories.

Module 2b Independent Project, 15 ECTS cr

1. independently identify and formulate research issues in the field of biology/biology education,
2. independently plan and carry out an individual research project in the field of biology/biology education within given time frames,
3. conduct literature search and data collection in the field of biology/biology education,
4. analyse and compile the data and information and make relevant assessments on the basis of research data and information,
5. describe and explain methods, result, analysis and conclusions in writing, and
6. orally present and defend their project and critically review the works of others in the field of biology/biology education.

Content

Module 1, Teaching and Learning for Sustainable Development, 7.5 ECTS cr.

The course is linked to subject teaching and future teaching practice. In the education components the importance of curricula to the teaching of sustainable development is analysed and educational theories in the area are studied. The course takes a holistic approach to sustainability issues based on social, ecological and economic perspectives, and this provides a view of the role of various actors in efforts towards sustainable development centrally. The perspectives of democracy, equity and equality are treated as are global and local survival issues, which are linked to natural resource utilisation and lifestyle issues.

Module 2a, Floristics and Faunistics, 15 ECTS cr

Floristics, 7.5 ECTS cr

Students practise identifying different types of algae, lichens, mosses and vascular plants using different types identification literature. The module covers knowledge of group and species for the most common species. Inventory exercises provide knowledge of different plant communities, biological diversity, prevalence and habitat requirements. Instruction is in the form of lessons, identification exercises, excursions and inventory exercises, with an emphasis on field studies. There are short excursions in the university vicinity, day trips outside of Karlstad, and longer over-night excursions, which entail extra costs for the students. The first weeks include multi-day excursions with an emphasis on vascular plants, followed by the study of fungi, lichens and mosses. Lessons and exercises alternate. One multi-day excursion is mandatory.

Faunistics 7.5 ECTS cr

The module deals with a survey of various kinds of identification books, excursion, collection, preparation and inventory technologies as well as determination exercises. Students learn about the

most common animal groups and a selection of species as well as how to use identification books. A large part of instruction takes place outdoors in nature. There are both short excursions near the university, day trips, and longer field trips to different places with accommodation, which mean extra costs for the students. Lectures alternate with excursions. One multi-day excursion is mandatory.

Module 2 Independent Project, 15 ECTS cr

Students carry out an individual research project chosen in consultation with the examiner and/or supervisor. The project builds on and develops the student's previous studies in biology/biology education. Parallel to the project, students carry out literature studies. Instruction is in the form of supervision sessions and seminars.

Reading List

See separate document.

Examination

Assessment is based on:

Module 1, Teaching and Learning for Sustainable Development, 7.5 ECTS cr.

Learning outcomes 1 and 5: individual assignment.

Learning outcomes 2, 3 and 4: written exam.

Learning outcome 6: seminar performance

Module 2a

Learning outcomes 1-4: hand-in assignments and species identification with and without aids, when possible during field excursions.

Learning outcomes 5-7: hand-in assignments and species and group identification with and without aids.

learning outcomes 8-11: hand-in assignment and discussion.

Module 2b

All learning outcomes: an independent, written project, oral seminar presentation and defence, participation in at least three academic seminars, and performance as peer reviewer.

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.