



Board of Teacher Education  
Biology

## Syllabus

### Biology for Teaching 1

<b>Course Code:</b>	BIGB11
<b>Course Title:</b>	Biology for Teaching 1 <i>Biologi med didaktisk inriktning 1</i>
<b>Credits:</b>	30
<b>Degree Level:</b>	Undergraduate level
<b>Progressive Specialisation:</b>	First cycle, has only upper-secondary level entry requirements (G1N)

**Major Field of Study:**  
BIA (Biology)

#### Course Approval

The syllabus was approved by the Board of Teacher Education 2018-02-12, and is valid from the Autumn semester 2018 at Karlstad University.

#### Prerequisites

General admission requirements and either field-specific eligibility A6c (Civics 1b or 1a1 + 1a, Science 2, Mathematics 3b or 3c), or field-specific eligibility 6c (English B, Civics A, Science B, Mathematics C).

#### Learning Outcomes

The aim of the course is that students acquire a sound level of knowledge of relevant subject areas in biology and biology education. On the basis of subject knowledge, students are expected to acquire the ability to further pupils' understanding of the categorisations and life processes of organisms.

Module 1: Floristics and Faunistics, 15 ECTS cr

Upon completion of the module, students should be able to

1. without aids identify common Nordic vascular plants, mosses and lichens and Nordic animals,
2. use determination keys to identify common vascular plants and animals and animal groups in Nordic flora and fauna,
3. use biological terms to describe the outer structure of plants and animals,
4. describe important characteristics of some common Nordic plant families and animal groups,
5. describe and compare different plant communities and habitats and adaptation among Nordic animals and animal groups,
6. collect and prepare invertebrates,
7. conduct and report a minor inventory of vascular plants, mosses and lichens in writing,
8. reflect on the discipline biology, the school subject biology and the teacher's knowledge base in relation to teaching praxis and subject-specific teaching methodology,
9. give an account of the importance of outdoor pedagogy in biology teaching, and
10. reflect on species knowledge in biology teaching.

Module 2: Zoology, 15 ECTS cr.

Upon completion of the module, students should be able to

1. master basic principles, concepts and terminology in zoology,
2. give an overview of the evolutionary history of animals on earth,
3. give an account of diversity, anatomy, habitats and animal taxonomy,
4. give an account of basic physiological mechanisms in animals,
5. dissect and identify differences and similarities between animal groups,
6. give an account of pupils' difficulties of understanding biology and relate to theories in biology education,
7. plan instruction on classification on the basis of current curricula and consideration of biology teaching,
8. discuss the methodological what-how-why questions in relation to sex, co-existence and health and reflect on norms and ethical aspects, and
9. give an account of how digital tools can be used in biology education.

### **Content**

The course comprises two modules, each of 15 ECTS cr.

Module 1: Floristics and Faunistics, 15 ECTS cr

The course deals with different types of identification guides, and techniques for excursion, collection, preparation and inventory, as well as identification exercises. The construction of determination keys, botanical and zoological terms and concepts are treated in lessons and laboratory sessions. Some plant families and the most species-rich animal groups are presented as well as a selection of representative species and groups. Some instruction takes place through excursions in the field.

In floristics the most common vascular plants, mosses and lichens are presented in their various environments as well as characteristic species of different plant communities and indicator species for identification of plant communities. Faunistics involves short excursions in the university vicinity, over-night excursions to other places.

In addition to field excursions, students learn about species and groups through digital quizzes.

In addition to field excursions, students learn about species and groups through digital quizzes. Students develop their ability to write reports on research results through inventory and sampling exercises and deepen their knowledge of different plant and animal species and communities, biological diversity and the ecological demands of species. Theoretical biology content is also studied through practical exercises relevant to education and an observation in school. Excursions and outdoor teaching are discussed in terms of theories of outdoor pedagogy.

Module 2: Zoology, 15 ECTS cr

The module deals with animal taxonomy and life processes, and provides a survey of the development of life on earth and the origin of eukaryotes and metazoans. The main animal groups are treated in terms of anatomy, phylogeny and systematic classification.

The general principles for the structure of tissues, organs and organ systems with function and regulation in isolation and in interaction as well as the significance of homeostasis are treated. Dissection is performed on selected representative animals.

Education theories on how children's perceptions, difficulties and motivation affect their learning are treated. The module also includes sex, coexistence and health education as well as how digital tools can be used as a teaching resource.

### **Reading List**

See separate document.

**Examination**

Assessment is based on:

Module 1

Learning outcomes 1 and 3: quizzes on species in flora and fauna.

Learning outcomes 2-7: written report on plant inventory and account of collected and preprepared bugs.

Learning outcomes 4 and 5: collection and identification of organism groups in excursions.

Learning outcome 8: field study, hand-in assignment and seminar.

Learning outcome 9: hand-in assignment and seminar

Learning outcome 10: field study and hand-in assignment.

Species quizzes take place at Karlstad University for both campus and distance students and cannot be done anywhere else.

**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.

Teacher Education: Secondary school levels

The course includes examination of practical components that can only be done at Karlstad University.