



Board of Teacher Education  
Biology

## Syllabus

### Science studies and science studies teaching 5

**Course Code:** BIAN92

**Course Title:** Science studies and science studies teaching 5  
*Naturkunskap med ett didaktiskt perspektiv 5*

**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 2016-08-30, and is valid from the Spring semester 2017 at Karlstad University.

#### Prerequisites

BIGLN1, BIGLN2 and BIGLN3 with 75 ECTS cr completed, 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 appropriate knowledge of science 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 science approach to issues of social relevance.

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

Module 1 Addressing Climate Change in Education, 7.5 ECTS cr

1. describe basic theories and knowledge of climate change from an historical, contemporary and future perspective,
2. analyse the causes and consequences of climate change at the global, regional and local levels,
3. give an account of how climate models and future scenarios affect different ecosystems, sectors and people in different parts of the world, and how climate adaptations can be implemented,
4. explain how climate change can be reduced and how a sustainable effect can be achieved internationally and nationally,
5. relate issues concerning climate change to curricula and to the teacher's professional duty,
6. give an account of education theories linked to climate change, environmental problems and sustainable development, and
7. plan, discuss and evaluate a teaching sequence with relevance to the curricula by considering the questions Why, For Whom, What and How.

Module 2 Independent project, 15 ECTS cr

1. independently identify and formulate research issues in the field of science/science education,

2. independently plan and carry out an individual research project in the field of science/science education within given time frames,
3. conduct literature search and data collection in the field of science/science 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 science/science education.

### **Content**

Module 1 Module 1 Addressing Climate Change in Education, 7.5 ECTS cr

The aim of the course is to provide basic and specialised knowledge of climate change at the local, regional and global levels. The course deals with the causes of climate change in an historical, contemporary and future perspective, its consequences for different ecosystems, societal sectors and people in the world, and strategies for climate adaptation and knowledge of how impact on the climate can be sustainable. Education theories and research on climate change and sustainable development are discussed, including how a teacher can plan teaching on climate change based on the curricula.

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 science/science 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**

All examination components are mandatory. Submissions for assessment must clearly indicate individual contribution.

Assessment is based on:

Module 1 Addressing Climate Change in Education, 7.5 ECTS cr

Learning outcomes 1-4: hand-in assignments and written individual take-home exam.

Learning outcomes 5-7: hand-in assignments and active participation in a seminar.

Module 2 Independent project, 15 ECTS cr

All learning outcomes are based on an independently written thesis and the oral presentation and defence of it, participation in at least three research seminars and performance as a 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.

Teacher Education: Secondary levels