



Faculty of Health, Science and Technology  
Biology

# Syllabus

## Cellbiology

<b>Course Code:</b>	BIG003
<b>Course Title:</b>	Cellbiology <i>Cellbiologi</i>
<b>Credits:</b>	15
<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 Faculty of Health, Science and Technology 2024-08-30, and is valid from the Spring semester 2025 at Karlstad University.

### Prerequisites

General admission requirements and upper secondary level Mathematics 3b/3c/C, Biology 1, and Chemistry 1, or equivalent

### Learning Outcomes

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

1. give an account of cell and virus structures, different cellular processes and functions such as protein synthesis, genetic and metabolic functions, as well as cell cycle and cell signaling functions,
2. use sterilisation techniques as well as cell and molecular biological and microbiological methods of analysis, and
3. seek information, critically assess the role of knowledge and responsibility in society, and consider ethics, sustainability, and gender equality in relation to the course content.

**Content**

The course covers the theory of cell biology. Instruction is mainly in the form of lectures, discussions, and study questions. Areas treated are biomolecules, virus structure, and prokaryotic and eukaryotic cell structures, as well as a number of different cellular processes and functions such as DNA replication, gene regulation, gene transfer, cell cycle regulation, mitosis and meiosis, cell signalling, protein synthesis, and prokaryotic and eukaryotic metabolism.

The practical and methods-oriented part of the course involves mandatory laboratory sessions and report writing and treats common methods such as sterilisation techniques, cell and molecular biological analysis, and microbiological analysis. Individually and in groups, students develop skills in seeking information in the area, assessing it critically and ethically, and compiling and presenting it with a focus on areas such as the pathogenicity of microorganisms, antibiotic resistance, and gene technology, including ethical and societal aspects.

**Reading List**

See separate document.

**Examination**

Learning outcome 1 is assessed based on an individual written exam.

Learning outcome 2 is assessed based on laboratory work and lab reports.

Learning outcome 3 is assessed based on an oral presentation and a written hand-in assignment discussed in groups in a seminar.

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.