



DEPARTMENT OF CHEMISTRY AND MOLECULAR BIOLOGY

BIO900 Cell Biology, basic course, 15 credits

Cellbiologi, baskurs, 15 högskolepoäng

First Cycle

Confirmation

This course syllabus was confirmed by Faculty of Science on 2011-11-04 and was last revised on 2020-01-28 by Department of Chemistry and Molecular Biology to be valid from 2020-01-29, autumn semester of 2020.

Field of education: Science 100%

Department: Department of Chemistry and Molecular Biology

Other participating department

Department of Biological and Environmental Sciences

Position in the educational system

This is a basic course that can be part of the Bachelor's programme in Molecular Biology or Biology. The course is also offered as a single subject course.

Main field of studies

Molecular Biology

Biology

Specialization

G1N, First cycle, has only upper-secondary level entry requirements

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Entry requirements

General entrance requirements for university studies and the Swedish upper secondary courses Biology B, Physics B, Chemistry B, Mathematics D or Biology 2, Physics 2, Chemistry 2, Mathematics 4 or equivalent.

Learning outcomes

After completion of the course, the student is expected at a basic level:

Knowledge and understanding

- understand the origin of life and development
- describe the most important molecular species and their properties
- understand the structure and function of biological membranes
- understand the compartmentalization of cells and organelles
- describe the energy metabolism and photosynthesis of Bacteria, Archaea and Eukarya
- describe the biodiversity and ecology of prokaryotes
- describe the structure and organisation of Bacteria, Archaea and Eukarya
- be able to describe the role of a cell as a building block in the multi-cellular organisms
- understand signal and information flow in and between cells

Competence and skills

have some knowledge of and skills in:

- cell biological methods
- bioinformatic methods
- how to analyse and discuss results from experiments
- how to assimilate course books at a high level.

Judgement and approach

- have increased ability to evaluate the importance of biological knowledge for the development of society
- have increased ability to reflect on their own study technique

Course content

The course is the first course in a basic block in Biology/Molecular Biology of 60 credits and gives basic knowledge in cell biology. The course starts with an introductory week which gives a brief overview of biology, biodiversity as well as biological experiments and field studies.

The course is then divided into two parts. The first part gives basic knowledge about the most important types of molecules in a cell, cell membranes, cell division and cell energy metabolism and photosynthesis.

The second part deals with the basic structure and functions of cells within Bacteria, Archaea and Eukarya, the role of the cell as a building block in the multi-cellular organism and cell signaling. It's also includes the diversity, division and ecology of prokaryotes.

Form of teaching

The course is based on lectures, laboratory sessions as well as group discussions. In the course is also generic skills in study technique included.

Language of instruction: Swedish and English

Assessment

Examination consist of two written examinations. Compulsory components in the course are generic skills (study technique) as well as laboratory sessions and other exercises in groups as shown in the course schedule. To pass the course, approved laboratory reports are required. Number occasions for compulsory components is limited. For students who have not passed at regular examination, an additional examination sessions are offered. Possibility to supplement failed compulsory parts can be given, at the earliest, at the next course date and only in case of a vacancy.

A student has the right to change examiner, if it is possible in practice, after having failed the same examination twice. The application shall be sent to the board of the department and has to be in writing.

Grades

The grading scale comprises: Pass with Distinction (VG), Pass (G) and Fail (U). For Pass (G) on a course module requires at least 60% of the total score on the exam and Pass with distinction (VG) requires 85%. For Pass the whole course also required approved result on all other examination parts. In addition, for the final grade Pass with distinction, VG is required for both course modules.

Course evaluation

A written course evaluation is made at the end of the course that is used as a guidance to course development.

Additional information

Course substitute to some extent BIO105, 15 credits, and Cell biology, 15 credits, in BIO150. BIO900, BIO105 and Cell biology in BIO150 can not at the same time be included in a degree there one is based on the other.