



DEPARTMENT OF BIOLOGICAL AND ENVIRONMENTAL SCIENCES

BIO911 Botanical and zoological physiology, basic course, 12 credits

Botanisk och zoologisk fysiologi, baskurs, 12 högskolepoäng

First Cycle

Confirmation

This course syllabus was confirmed by Department of Biological and Environmental Sciences on 2020-01-30 and was last revised on 2020-12-03 to be valid from 2021-01-18, spring semester of 2021.

Field of education: Science 100%

Department: Department of Biological and Environmental Sciences

Position in the educational system

The course is a base course that is included in the bachelor's programmes in biology and molecular Biology and may be included in the bachelors programme in in environmental science. The course can also be offered as a freestanding course outside of the program.

Main field of studies

Molecular Biology

Biology

Specialization

G1F, First cycle, has less than 60 credits in first-cycle course/s as entry requirements

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Entry requirements

Admission to the course requires completed basic courses BIO900 Cell biology, 15 credits, and BIO906 Molecular Genetics and evolution, 15 credits, or equivalent.

Learning outcomes

On successful completion of the course students will be able to:

Knowledge and understanding

- give an account of basic principles, concepts and terminology in anatomy and

physiology of plants and animals

- give an account of basic functional anatomy and the functions of organ systems in plants and animals
- give an account of basic physiological mechanisms and control systems of multi-celled organisms
- describe on a general level for the history of the plant cultivation and the role of the agriculture in sustainable development

Skills and Abilities

- analyse and discuss chosen physiological problems and results of experiments
- demonstrate basic laboratory skills to study organisms' anatomy and physiology
- present result of the laboratory sessions in the course in writing by means of word processing software

Judgement and approach

- evaluate and discuss ethical questions regarding genetically modified plants (GMO) and animal experiments

The course is sustainability-related, which means that at least one of the learning outcomes clearly shows that the course content meets at least one of the University of Gothenburg's confirmed sustainability criteria.

Course content

The course constitutes the third course in a block of basic courses in the Biology/Molecular Biology of 60 credits. The course includes two sub-courses in basic anatomy and physiology of plants and animals, respectively. Both sub-courses include both theoretical and practical components. The course also includes generic skills in ethical issues concerning genetically modified plants (GMO) and animal experiments.

The first sub-course (5 credits) covers the anatomy and physiology of terrestrial plants. The course covers the structure and development of the plants, uptake of water, mineral nutrition and transport systems, symbiosis with microorganisms, hormones, reproduction and response against different environment and stress factors (pathogens, drought, cold, etc), secondary metabolism and plant breeding.

The second sub-course (7 credits) includes the concept of homeostasis, temperature, hormones, immunology, reproduction, development, the nervous system, sensory physiology, the functions of the muscle, gas exchange, circulation, the decomposition and absorption of the food, salt- and water balance in multi-celled animals.

Form of teaching

The course teaching consists of lectures, laborations, group exercises and seminars. Laboratory reports and written presentation are included in some parts.

Language of instruction: Swedish and English

The course is mainly given in Swedish, but elements of teaching in English may occur. The course literature consists mainly of literature in English.

Assessment

The examination consists of two written examinations (one per sub-course). For students who have not passed the regular examination, additional examination sessions are offered. Compulsory components in the course are generic skills (animal testing ethics and ethics discussion around GMO plants) and laboratory sessions. To pass the course, approved reports on the laboratory sessions where it is included and attendance are required and activity on the generic proficiency parts. Certain other exercises in groups can be compulsory that appear of the timetable. The number of occasions for compulsory components is limited. Possibility to supplement failed compulsory parts can be given, at the earliest, at the next course date and only in case of a vacancy.

The student has the right to change examiner, if it is practical, after failing twice on the same examination. The application shall be sent to the board of the department and has to be in writing.

In the case where a course has been discontinued or has undergone major changes, a student shall be guaranteed access to at least three examination opportunities (including the regular examination opportunity) during a period of at least one year, but at the most two years after the course has been discontinued/changed.

Grades

The grading scale comprises: Pass with Distinction (VG), Pass (G) and Fail (U).

In module 2, the following grades apply: Pass with distinction (VG), Pass (G) and Fail (U).

For Pass on sub-course, at least Pass on all compulsory components and on the written examinations is required (usually 60% of the total of points). Pass with distinction on sub-course is given usually at 85% of the total of points on written examination.

For Pass in final grade on the whole course, passed result in all is required examination part and approved reports. For the grade Pass with distinction (VG) in the whole course, Pass with distinction on both the sub courses is required.

Course evaluation

A written course evaluation is offered at the end of the course. A summary of the course evaluation, and highlighting of potential changes is presented to both current and the

following course.

Additional information

The course does not include animal testing but the students may measure certain parameters on themselves at some laboratory sessions.

This course replaces BIO115, the form and function of the Organism world, 15 credits and BIO910 the form and function of the Organism world, 15 credits. BIO115 or BIO910 cannot at the same time be included in a degree with BIO911 where one is based on the other.