Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

Syllabus

HV0133.2 Animal biology 2 - the cell, 15.0 credits

Djurens biologi 2 – cellen

The course is given Agriculture Programme - Animal Science, Ethology and Animal Welfare - Bachelor´s programme and Companion and Sports Animals - Bachelor´s programme

Version 2 in Slukurs. Corresponds to version 3 and 4 in Ladok

Syllabus approved

8 November 2016

The version applies to students admitted from autumn 2019

The version is a module version

Subjects

Animal science/Biology

Education cycle

First cycle

Modules

Title	Code	Credits
Cell biology	0202	5.0
Bacteriology	0204	2.0
Immunology	0205	2.0
Parasitology	0206	2.0
Virology	0207	2.0
Genetics	0208	2.0

Advanced study in the main field

First cycle, less than 60 credits from first-cycle courses as entry requirements (G1F)

Grading scale

5:Pass with Distinction, 4:Pass with Credit, 3:Pass, U:Fail
The requirements for attaining different grades are described in the course assessment criteria which are contained in a supplement to the course syllabus. Current information on assessment criteria shall be made available at the start of the course.

Language

Swedish

Prior knowledge

Knowledge equivalent:
- 30 credits in animal science
or
- 30 credits in biology

Objectives

The course intends to give basic knowledge and laboratory training in cell biology, microbiology, immunology and genetics that is needed for continued studies in animal science and biology. The course also intends to integrate the different subject areas cell biology, microbiology, immunology and genetics as well as give a general understanding of system biology.

On completion of the course, the student should be able to:
- give an account of the structure of the cell, interactions between cells and extracellular matrix, transport of molecules in and over cell membrane,
- describe the growth of the cell, signaling, stem cells as well as mechanisms that control formation of abnormal cell division,
- compare occurrence of, as well as systematics, morphology and characteristics of various types of microorganisms and parasites,
- describe the importance of microorganisms and parasites for incidence of disease in animals,
- use and account for basic microbiological laboratory techniques,
- describe the general structure of the immune system and its effect on microbial infections,
- give an account of basic genetics, organization of the genome as well as regulation of gene expressions.

Content

The course intends to highlight basic cell biological processes including regulation of gene expression, membrane structure, membrane transport, intracellular transport, cell signaling, the cytoskeleton, the cell cycle, extracellular matrix, cell-cell/cell-matrix contacts, cancer as well as stem cells. Furthermore, the course gives basic knowledge of the structure and characteristics of microorganisms and parasites as well as principles of systematics of microorganisms and parasites. It gives general knowledge of how infection of different microorganisms and parasites occurs, the mechanisms of the immune system of the mammal as well as principles of diagnostics, prevention and control of microorganisms and parasites. The course gives an overview of the occurrence of aetiological parasites in farm animals and companion animals. The course provides in the field of genetics knowledge of Mendelian inheritance, organization of genome, gene regulation, gene families as well as central genetic and molecular genetic methods.

The course includes lectures, group work and laboratory sessions. Compulsory components occur, in e g laboratory sessions, group work and seminars.

In the course, the following general skills are practiced: written and oral communication, formulate laboratory reports, analysis, problem-solving and critical thinking.

Formats and requirements for examination

Passed written examination, approved participation in compulsory components.

- If the student fails a test, the examiner may give the student a supplementary assignment, provided this is possible and there is reason to do so.
- If the student has been granted special educational support because of a disability, the examiner has the right to offer the student an adapted test, or provide an alternative assessment.
- If changes are made to this course syllabus, or if the course is closed, SLU shall decide on transitional rules for examination of students admitted under this syllabus but who have not yet passed the course.
- For the examination of a degree project (independent project), the examiner may also allow the student to add supplemental information after the deadline. For more information on this, please refer to the regulations for education at Bachelor's and Master's level.

Additional information

- Some parts may be held in English. The course includes 5 credits in cell biology, 6 credits in microbiology, 2 credits in immunology and 2 credits in genetics. - The course assumes basic prior knowledge at university level in chemistry, biochemistry and cell biology.

- The right to take part in teaching and/or supervision only applies to the course date to which the student has been admitted and registered on.
- If there are special reasons, the student may take part in course components that require compulsory attendance at a later date. For more information on this, please refer to the regulations for education at Bachelor's and Master's level.

Responsible department

Department of Biomedical Sciences and Veterinary Public Health
Cooperating departments:
Department of Animal Breeding and Genetics
Department of Anatomy, Physiology and Biochemistry

Supplementary Information

Finalized by: Programnämnden för utbildning inom veterinärmedicin och husdjur (PN - VH)
Biology Area: Microbiology
Course overlap: BI0960, BI1081
Replacement course: delvis BI0960, BI1081