



Faculty of Science

BIOR60, Biology: Genetic Analysis II, 7.5 credits

Biologi: Genetisk analys II, 7,5 högskolepoäng

Second Cycle / Avancerad nivå

Details of approval

The syllabus was approved by Study programmes board, Faculty of Science on 2008-06-11 and was last revised on 2016-02-29. The revised syllabus applies from 2016-07-01, autumn semester 2016.

General Information

The course is an elective course for a degree of Bachelor of Science in Biology or Molecular Biology, and for a degree of Master of Science in Biology, Molecular Biology or Bioinformatics.

Language of instruction: English

Main field of studies

Biology

Molecular Biology

Depth of study relative to the degree requirements

A1F, Second cycle, has second-cycle course/s as entry requirements

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Learning outcomes

The aim of the course is that students should have acquired the following knowledge and skills:

Knowledge and understanding

On completion of the course the student shall be able to:

- describe how mathematical models are used in genetics
- account for deductions from theoretical genetics

Competence and skills

On completion of the course the student shall be able to:

- master statistical methods for genetic data analysis
- carry out analysis of genetic data
- present results from genetic studies orally and in writing

Course content

- The evolution of DNA sequences
- the Maximum-Likelihood method and its use
- estimation of recombination frequencies and mapping functions
- statistical methods for quantitative genetics and QTL-mapping
- population genetics; especially the basics of coalescence theory
- design of evolutionary genetics models

Course design

The teaching consists of lectures, calculation exercises, written assignments, laboratory sessions, as well as project work. Participation in laboratory sessions and projects, and thereby other integrated teaching, is compulsory. Written assignments are compulsory.

Assessment

Examination takes place in the form of smaller written examinations during the course and a final written examination at the end of the course, and through compulsory parts. For students who have not passed the regular examination, an additional examination in close connection to this is offered.

Subcourses that are part of this course can be found in an appendix at the end of this document.

Grades

Marking scale: Fail, Pass, Pass with distinction.

To pass the entire course, approved examinations and approved compulsory parts are required. The final grade is decided through a weighing of the results of the parts that are included in the examination.

Entry requirements

For admission to the course, 90 credits of scientific studies including knowledge corresponding to MOBA01 Cell Biology 15 credits, BIOA01 Genetics and Microbiology 15 credits, BIOR59 Genetic Analysis I 7.5 credits, as well as 15 credits in chemistry, is required. English 6/B.

Further information

The course may not be included in a degree together with BIO616 Genetics 15 credits, or BIOR15 Genetic Analysis 15 credits.

Subcourses in BIOR60, Biology: Genetic Analysis II

Applies from V09

0801 Genetic Analysis II, 7,5 hp
Grading scale: Fail, Pass, Pass with distinction