Faculty of Science

BIOR63, Biology: Molecular Microbiology, 15 credits

Biologi: Molekylär mikrobiologi, 15 högskolepoäng

Second Cycle / Avancerad nivå

Details of approval

The syllabus was approved by Study programmes board, Faculty of Science on 2009-10-22 (N 2009/731) and was last revised on 2025-05-30 by The Education Board of Faculty of Science. The revised syllabus comes into effect 2025-05-30 and is valid from the spring semester 2026.

General information

The course is an optional second-cycle course for a degree of Bachelor or Master of Science in Biology and Molecular Biology. The course is also offered as a single subject course. The language of instruction is English.

Language of instruction: English

Main field of study	*Specialisation*
Biology	A1F, Second cycle, has second-cycle course/s as entry requirements
Molecular Biology	A1F, Second cycle, has second-cycle course/s as entry requirements

Learning outcomes

The oerall aim of the course is that students shall have acquired knowledge about the molecular basis of bacterial structure, physiology, genetics, and regulatory mechanisms.

Knowledge and understanding

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

- understand definitions and principles of the molecular genetics of bacteria

- describe molecular genetic processes in prokaryotic organisms
- understand relevant molecular genetic methods and their applicability and limitations.

Skills and abilities

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

- practically apply molecular genetic technologies
- interpret, compile and present experimental results in a scientific way for a given target group.

Knowledge and understanding

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

- account for definitions and principles of the molecular genetics of bacteria
- describe molecular genetic processes in prokaryotic organisms
- describe relevant molecular genetic methods and their applicability and limitations

Competence and skills

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

- apply molecular genetic technologies
- compile and present experimental results in a scientific way for a given target group

Judgement and approach

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

- interpret and evaluate experimental results

Course content

The course includes:

- The structure, replication, expression, and organisation of genes in bacteria
- Modification and restriction of DNA
- Mutations and suppression of mutations
- DNA repair Regulation of gene expression in bacteria and viruses
- Recombination in bacteria
- Plasmids

- Transposons
- Gene technology and its applications.

Course design

The teaching consists of lectures, written assignments, laboratory sessions, and group discussions. Participation in laboratory sessions, written assignments, group discussions, and thereby other integrated teaching, is compulsory.

Assessment

Examination takes place through a written examination at the end of the course as well as through written assignments, labs and seminars during the course.

For students who have not passed the regular examination, additional examinations in close connection to this are offered.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Grades

Grading scale includes the grades: Fail, Pass, Pass with distinction
To pass the entire course, approved written examination as well as approved laboratory work, assignments, and seminars are required.

The grading scale for laboratory work, assignments, and seminars is Fail, Pass, whereas the grading scale for written examination is Fail, Pass, Pass with distinction.

The final grade are decided through a weighing of the results of the parts that are included in the examination.

Entry requirements

For admission to the course, 105 credits of scientific studies including knowledge corresponding to BIOA10 Cell and Microbiology 15 credits, BIOA11 Genetics and Evolution 15 credits, BIOR18 Microbiology 15 credits and chemistry 30 credits, are required. English 6/B

Further information

The course is offered at the department of Biology, Lund University.