Faculty of Science

KEMA90, Latest Advances in Genetic Engineering, and how these have Changed our Way of Living, 3 credits

De senaste framstegen inom genteknik och hur dessa har förändrat vårt sätt att leva, 3 högskolepoäng

First Cycle / Grundnivå

Details of approval

The syllabus was approved by Study programmes board, Faculty of Science on 2022-04-21 to be valid from 2022-04-21, spring semester 2022.

General Information

The course is a free standing first-cycle course in chemistry and provides an introduction to the latest advances in genetic engineering.

Language of instruction: English

Main field of studies	*Depth of study relative to the degree requirements*
-	G1F, First cycle, has less than 60 credits in first-cycle course/s as entry requirements

Learning outcomes

The general aim of the course is to enable students to acquire an understanding in biochemistry, genetics, molecular biology, and gene editing as well as the latest techniques applied within these fields. After completing the course, students will have acquired knowledge of how these techniques are used in daily life, for example in areas such as food, medicine, diet and the environment.

Knowledge and understanding

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

- explain the basic concepts within biochemistry, genetics, molecular biology, and gene editing

- describe the gene editing process
- describe how the genome sequence works in different organisms
- describe the different biotechnology applications on plant breeding and food technology

Competence and skills

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

- discuss the latest techniques within biochemistry, genetics, molecular biology, and gene editing as well as their use in areas of daily life
- formulate and discuss questions concerning genetic engineering

Judgement and approach

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

- evaluate and discuss how genetic engineering has affected our lifestyle
- propose new ideas on how the technologies in biochemistry, genetics, molecular biology and genre editing can be used

Course content

The course deals with the latest techniques in biochemistry, genetics, molecular biology and gene editing.

Course design

The teaching consists of lectures and study visits.

Assessment

The assessment is based on a written report.

Students who do not pass an assessment will be offered another opportunity for assessment soon thereafter.

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.

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

Grades

Marking scale: Fail, Pass.
For the grade of Pass on the whole course, the student must have passed the written report.

Entry requirements

To be admitted to the course, students must meet the general entry requirements for higher education and requirements for English proficiency corresponding to English 6 from Swedish upper secondary school, and have passed 30 credits in chemistry courses equivalent to:

- KEMA20 General Chemistry, 15 credits, KEMA01 Organic Chemistry - Basic Course, 7.5 credits, and KEMA03 Biochemistry - Basic Course, 7.5 credits

Further information

The course may not be included in a degree of science with major in Chemistry.

The course is given by the Department of Chemistry, Lund University.

Subcourses in KEMA90, Latest Advances in Genetic Engineering, and how these have Changed our Way of Living

Applies from V22

2201 Report, 3,0 hp
Grading scale: Fail, Pass