LUNDS UNIVERSITET
Lunds Tekniska Högskola

Course syllabus

Inledande bioteknik
Introduction to Biotechnology

KBTA05, 7,5 credits, G1 (First Cycle)

Valid for: 2023/24
Faculty: Faculty of Engineering, LTH
Decided by: PLED B/K
Date of Decision: 2023-04-18

General Information

Main field: Technology.
Compulsory for: B1
Language of instruction: The course will be given in Swedish

Aim

to give an introduction to biotechnology

to give basic knowledge about proteins, enzymes and genes

to describe the possibilities of modern gene technology

to introduce some future subjects within the study program

to give information about the biotech industry as well as current research at LTH

to introduce laboratory work and project work.

Learning outcomes

Knowledge and understanding
For a passing grade the student must

be able to describe biotechnological production methods

be able to describe the role of enzymes and microorganisms in a biotechnological process

be able to describe the structure of proteins and its importance for function

be able to decribe the human immune system and applications based upon its components

be able to decribe how foods are used within biotechnology

be able to describe and explain the way enzymes work

be able to describe the structure of genes and their expression

be able to describe common risks in a laboratory environment and how laboratory works takes place in a safe manner.

Competences and skills
For a passing grade the student must

be able to calculate basic enzymekinetics

be able to do oral presentations and to work in a group

be able to perform a basic laboratory work (within biotechnology).

Judgement and approach
For a passing grade the student must

be able to formulate and discuss questions concerning sustainable development in relation to production of biotechnological products such as food and pharmaceutical as well as other bioproducts

be able to discuss ethical, environmental and societal aspects within biotechnology.

Contents

Protein structure and function. Enzyme function and properties. Gene structure and function and protein synthesis. Gene technology. Immunology. Food and food technology. Future subjects within the study program is described in the form of inspiration lectures. Basic process knowledge: raw materials, reactors, reactions, products, energy, environment and sustainable biotechnological production. Lab safety and laboratory work. Group task. Study visit.

Examination details

Grading scale: TH - (U,3,4,5) - (Fail, Three, Four, Five)
Assessment: Written exam. Oral presentation and active participation, which gives extra points to the exam. The final grade is based on a total examination result.

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.

Parts
Code: 0120. **Name:** Project.

Credits: 1,5. **Grading scale:** UG. **Assessment:** Oral presentation, active participation.
Code: 0220. **Name:** Theory.
Credits: 6. **Grading scale:** TH. **Assessment:** Written exam

Admission

The number of participants is limited to: No
The course overlaps following course/s: KKKA01, KKKA05, KBTA01, KBKA01

Reading list

- Berg, J.M, Tymoczko, J.L., Gatto, G.J. and Stryer, L: Biochemistry. W.H. Freeman & Co, 2019, ISBN: 978-131911465-7.

Contact and other information

Course coordinator: Lieselotte Cloetens , lieselotte.cloetens@tbiokem.lth.se
Course coordinator: Cecilia Tullberg, cecilia.tullberg@biotek.lu.se
Further information: Some parts might be taught in English.