



# LTH

FACULTY OF  
ENGINEERING

*Course syllabus*

## Bioteknik, projektering Biotechnology, Process and Plant Design

**KBTN10, 15 credits, A (Second 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:** Biotechnology.

**Elective Compulsory for:** MBIO1

**Elective for:** B4-pt

**Language of instruction:** The course will be given in English on demand

### Aim

The course shall give the methods for feasibility studies of biotechnological processes, skills in project management and knowledge about business development.

### Learning outcomes

*Knowledge and understanding*

For a passing grade the student must

have knowledge about the different phases of process design from idea to plant,

understand the methodology for feasibility studies of biotechnological processes,

be familiar with how technology, economy, market and legislation interacts in a feasibility study,

be familiar with the work of a project group including knowledge on some common tools for project management

understand the basis for commercialization of business ideas such as market valuation, access to IP and financing.

### *Competences and skills*

For a passing grade the student must

be able to search, value and use information relevant for the project using university library resources and open electronic sources,

be able to estimate direct and indirect costs, and to perform cost estimates for a biotechnological plant,

be able to carry out process design using computer software.

know how to write a marketing plan for a business idea

### *Judgement and approach*

For a passing grade the student must

in a project group carry out an industrially related feasibility study,

take part in oral and written reports of the feasibility study,

be able to reflect on the role that the student will take in a project group.

## Contents

Process and plant design, methods used for feasibility studies and plant design, process synthesis, cost estimation, technical and economical evaluation, pricing of material and products. Use of software. Site visits. Guest lectures. Completion of practical/theoretical task, normally in collaboration with biotechnological companies. Project management. Criteria for business evaluation, creation of a marketing plan.

## Examination details

**Grading scale:** UG - (U,G) - (Fail, Pass)

**Assessment:** Oral presentations and written reports incl. marketing plan and project description. Active participation. Written self reflection.

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:** 0117. **Name:** Feasibility Studies.

**Credits:** 10. **Grading scale:** UG. **Assessment:** Written report and oral presentation. Active participation.

**Contents:** Feasibility study of a bioprocess.

**Code:** 0217. **Name:** Business Development.

**Credits:** 4. **Grading scale:** UG. **Assessment:** Written report. **Contents:** A business idea shall be evaluated based on commercial potential, market value, IP and financial resources. A marketing plan shall be written.

**Code:** 0317. **Name:** Project Management.

**Credits:** 1. **Grading scale:** UG. **Assessment:** Active participation, written Project description and self reflection. **Contents:** Fundamentals of project management.

## Admission

### **Admission requirements:**

- KBT115 Bioprocess Technology or KBTF15 Bioprocess Technology

**Assumed prior knowledge:** MIOA12/MIO012 Managerial Economics, basic course.

**The number of participants is limited to:** No

**The course overlaps following course/s:** KBT042, KAT070, KBT041, KET050, KTE110, KTE120

## Reading list

- Handouts and reference materials.
- Petrides, D.: Bioprocess Design and Economics. Available at: <http://www.intelligen.com/>.

## Contact and other information

**Course coordinator:** Tekn. Dr. Carl Grey, [Carl.Grey@biotek.lu.se](mailto:Carl.Grey@biotek.lu.se)

**Course coordinator:** Cecilia Tullberg, [cecilia.tullberg@biotek.lu.se](mailto:cecilia.tullberg@biotek.lu.se)

**Course homepage:** <http://www.biotek.lu.se/education/undergraduate-courses/>

**Further information:** The course may be taught in english.