Project - Biomedical Engineering

Programme course

16 credits

Projekt i medicinsk teknik

TBMT41

Valid from:

Determined by

Date determined

Offered for the last time
Spring semester 2023

Replaced by
TBMT58

Main field of study
Biomedical Engineering

Course level
First cycle

Advancement level
G2X

Course offered for
- Biomedical Engineering, M Sc in Engineering

Entry requirements
Note: Admission requirements for non-programme students usually also include admission requirements for the programme and threshold requirements for progression within the programme, or corresponding.

Prerequisites
Anatomy and Physiology, Engineering project, Basic knowledge in programming - abstraktion and modeling. Basic knowledge in biomedical engineering, mathematics, physics, electronics, computer science and control engineering.

Intended learning outcomes

After the project work the student in the main subject should be able to

- identify the needs of engineering solutions in medicine
- apply methodological knowledge, models and subject-specific knowledge in biomedical engineering
- use and synthesize knowledge from previous courses and to seek information outside the area of biomedical engineering which can be applied to new areas
- make engineering judgments with regard to the work of relevant scientific, social and ethical aspects
- show the ability to plan, implement and report a thesis work
- implement a project charter to a specification
- plan, document and execute a project with efficient use of material and human resources
- professionally present results orally and in writing within specified time and project frameworks
- critically examine and discuss the writing and orally presented work in the candidate's work
- reflect on a project work and suggest improvements
- actively contribute to well organized project teams
- describe and explain the ethical challenges related to the engineering profession and to technological development.
- apply basic normative ethical theories, principles and concepts to concrete cases and situations.

Course content

Projects: The project may cover areas such as medicine, material science, construction theory, physics, optics, electronics, signals, systems and modells etc. The customer initiate the projects. The project group follows the project model CDIO. Independent thesis work established in parallel to the project as a resource.

Teaching and working methods

The course consists of lectures, seminars, project work, written and oral reporting. The project work is done in groups of 5-6 students. The project group will have a supervisor during the project and together with the domain experts in the field act as support. Each group is assigned to a specific project task and a teacher acting as a customer. The customer presents a specification of the project task to the project group. From this specification the group will make a project plan and perform a project work according to the project model LIPS. The work is well documented in a written report and presented orally to the customer. At the end of the course the work is also presented for the other students at a project conference. An independent thesis work is implemented in parallel with the project and this is provided to the project as a project resource.

The course runs the entire spring semester.

Examination

UPG3	Presentation and Opposition	1.5 credits	U, G
UPG2	Ethics	1.5 credits	U, G
UPG1	Written Report	2 credits	U, G
PRA1	Project assignment	11 credits	U, G

Grades are givens as ’Fail’ or ’Pass’.

Grades

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Department

Institutionen för medicinsk teknik

Director of Studies or equivalent

Marcus Larsson

Examiner

Göran Salerud

Course website and other links

https://www.imt.liu.se/edu/courses/TBMT41/

Education components

Preliminary scheduled hours: 128 h
Recommended self-study hours: 299 h