

PROGRAMME SYLLABUS

Preliminary, not confirmed

Mechanical Engineering (BSc), 180 credits

Maskinteknik: Material och Produktutveckling, 180 högskolepoäng

Programme Code:	TGMMO	Programmestart:	Autumn 2027
Confirmed:		Education Cycle:	First-cycle level

Title of Qualification

Degree of Bachelor of Science in Mechanical Engineering, specialisation in Materials Engineering and Product Development.

Högskoleingenjörsexamen i Maskinteknik, inriktning Material och Produktutveckling

Programme Overview

Engineering field and Main field of study

Background

Objectives

Post-graduation employment areas

Studies after graduation

Educational concept at the School of Engineering

The education concept at the School of Engineering consists of several common elements included in the academic programmes to enhance the quality and appeal of the education, ensuring that students become professionally skilled and in demand. The concept particularly emphasizes industry collaboration and internationalization as two key components for creating successful and attractive programmes. All three- and five-year programmes include a mandatory industrial placement course (IPC) worth 15 credits and an "internationalization semester" that facilitates studying abroad. They also feature 15 credits for "broadening courses" outside the technical or core area of specialized technical knowledge.

Objectives

Common learning outcomes

After the completion of the programme, students must meet the intended learning outcomes, as described in The Higher Education Ordinance by Degree of Bachelor of Science in Engineering (1-11) and also the intended learning outcomes, as described by JTH:

Knowledge and Understanding

1. demonstrate knowledge of the disciplinary foundation of the engineering field chosen and proven experience in this field as well as awareness of current research and development work,
2. demonstrate broad knowledge in the engineering field chosen and relevant knowledge of mathematics and the natural sciences,
- JTH. demonstrate broadening knowledge outside the chosen engineering field for the future professional role or demonstrate knowledge within the engineering field in an international context (study abroad).

Competence and Skills

3. demonstrate the ability to identify, formulate and deal with issues autonomously and creatively using a holistic approach and to analyse and evaluate technological solutions,
4. demonstrate the ability to plan and using appropriate methods undertake tasks within predetermined parameters,
5. demonstrate the ability to use knowledge critically and systematically to model, simulate, predict and evaluate series of events on the basis of relevant information,

6. demonstrate the ability to design and manage products, processes and systems while taking into account the circumstances and needs of individuals and the targets for economically, socially and ecologically sustainable development set by the community,
 7. demonstrate the capacity for teamwork and collaboration with various constellations,
 8. demonstrate the ability to present and discuss information, problems and solutions in speech and writing and in dialogue with different audiences, in both national and international contexts,
- JTH. demonstrate ability to apply the acquired knowledge in practical work and demonstrate insight into the future career,

Judgement and Approach

9. demonstrate the ability to make assessments informed by relevant disciplinary, social and ethical aspects,
10. demonstrate insight into the possibilities and limitations of technology, its role in society and the responsibility of the individual for how it is used, including social and economic aspects as well as environmental and occupational health and safety aspects,
11. demonstrate the ability to identify the need for further knowledge and undertake ongoing development of his or her skills,

Programme-specific learning outcomes

Upon completion of the programme, the intended learning outcomes provided for programme must also be met.

Knowledge and Understanding

Competence and Skills

Judgement and Approach

Contents

Programme principles

Research connection

Equal terms, gender equality and diversity

The School of Engineering (JTH) strives in all its activities to ensure that all individuals are given equal opportunities and treated equally. At both the JU and JTH levels, this is reflected in governing documents concerning organizational and personnel matters, the establishment and delivery of programmes and courses, as well as the monitoring of educational quality. At JTH, student influence is also ensured through student representation in various educational and industry councils.

Study abroad

JTH has internationalization as a focus area where the educational programmes include opportunities for both international experiences at home as well as various opportunities to do internships and study abroad, giving students valuable experiences and skills to prepare them for a global labour market.

Programme progression

Courses

Course changes can occur, as long as they do not substantially affect the programme's content and learning goals.

Teaching and Examination

The academic year is divided into two semesters, and the semesters into two study periods. In each study period two courses are generally taken in parallel. Assessment is part of each course or module. Modes of assessment and grades are shown in each course syllabus.

Entry Requirements

General entry requirements and Physics 2, Chemistry 1, Mathematics 3c, English 6 with required grade passed in the Swedish upper secondary school system or international equivalent. Or: Physics level 2, Chemistry level 1, Mathematics further level 1c, English level 2 (or the equivalent).

Continuation Requirements

In order to begin the second year, at least 37,5 credits from the programme's first year must be completed. In order to begin the third year, at least 90 credits from the programme's first and second year must be completed.

Qualification Requirements

To obtain a Degree of Bachelor of Science in Mechanical Engineering, specialisation in Product Development and Industrial Design, the student shall complete the course requirements of at least 180 credits in accordance with the current programme syllabus.

Quality Development

At JTH, systematic quality assurance is carried out within JU's established quality system. This system, based on the requirements of the Higher Education Act, the Higher Education Ordinance, and the *Standards and Guidelines for Quality Assurance in the European Higher Education Area*, has been reviewed and approved by the Swedish Higher Education Authority.

Active and continuous course evaluation, including student feedback through course surveys, forms one of the cornerstones of this system. Annual programme evaluations and student representation in JTH's various educational and industry councils are two additional examples.

Other Information

Admission is under 'Admission arrangements for first and second level at Jönköping University'.

This syllabus is based on 'Regulations and guidelines for education at undergraduate, postgraduate and doctoral studies at Jönköping University'.