

PROGRAMME SYLLABUS

Preliminary, not confirmed

Materials Engineering for the Manufacturing Industry (master), 120 credits

Materials Engineering for the Manufacturing Industry (master), 120 högskolepoäng

Programme Code:	TAMEF	Programmestart:	Autumn 2026
Confirmed:		Education Cycle:	Second-cycle level

Title of qualification

Degree of Master of Science (120 credits) with a major in Product Development specialisation in Materials Engineering for the Manufacturing Industry

Teknologie Masterexamen med huvudområdet Produktutveckling inriktning Materials Engineering for the Manufacturing Industry

Programme overview

Main field of study

Background

Objectives

The goal of this programme is to:

Post-graduation employment areas

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 Master, and also the intended learning outcomes, as described by JTH:

Knowledge and Understanding

1. demonstrate knowledge and understanding in the main field of study, including both broad knowledge of the field and a considerable degree of specialised knowledge in certain areas of the field as well as insight into current research and development work

2. demonstrate specialised methodological knowledge in the main field of study

Competence and skills

3. demonstrate the ability to critically and systematically integrate knowledge and analyse, assess and deal with complex phenomena, issues and situations even with limited information

4. demonstrate the ability to identify and formulate issues critically, autonomously and creatively as well as to plan and, using appropriate methods, undertake advanced tasks within predetermined time frames and so contribute to the formation of knowledge as well as the ability to evaluate this work

5. demonstrate the ability in speech and writing both nationally and internationally to clearly report and discuss his or her conclusions and the knowledge and arguments on which they are based in dialogue with different audiences

6. demonstrate the skills required for participation in research and development work or autonomous employment in some other qualified capacity

Judgement and Approach

7. demonstrate the ability to make assessments in the main field of study informed by relevant disciplinary, social and ethical issues and also to demonstrate awareness of ethical aspects of research and development work

8. demonstrate insight into the possibilities and limitations of research, its role in society and the responsibility of the individual for how it is used

9. demonstrate the ability to identify the personal need for further knowledge and take responsibility for his or her ongoing learning

JTH. prove ability to embrace interdisciplinary approaches

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 basis

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

The School of Engineering 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

The applicant must hold the minimum of a bachelor's degree (i.e the equivalent of 180 ECTS credits at an accredited university) with at least 90 credits in materials and manufacturing, materials engineering, mechanical engineering, chemical engineering, product development or engineering physics or equivalent. The bachelor's degree should comprise a minimum of 15 credits in mathematics. Proof of English proficiency is required.

Continuation Requirements

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

Qualification Requirements

To obtain a Degree of Master of Science (120 credits) with a major in Product Development, specialisation in Materials Engineering for the Manufacturing Industry, students must complete a minimum of 120 credits in accordance with the current programme syllabus and 21 credits in Mathematics.

In addition a Degree of Bachelor of Science in Engineering/Degree of Bachelor of Science or an equivalent Swedish or foreign qualification is required.

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 regulations for first- and second cycle courses and study programmes at Jönköping University (Admission regulations)'.

This syllabus is based on 'Regulations and guidelines for first-, second- and third-cycle education at Jönköping University'.