

## COURSE SYLLABUS

### Manufacturing Technology, 7.5 credits

*Tillverkningsteknik, 7.5 högskolepoäng*

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Course Code: TTVK16	Education Cycle: First-cycle level
Confirmed: Sep 01, 2025	Disciplinary domain: Technology
Valid From: Aug 31, 2026	Subject group: Mechanical Engineering
	Specialised in: G1F First cycle, has less than 60 credits in first-cycle course/s as entry requirements
	Main field of study: Mechanical Engineering

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### Intended Learning Outcomes (ILO)

On completion of the course the student shall:

#### Knowledge and understanding

- display knowledge of common cutting, joining, shaping and additive manufacturing techniques for metallic and polymer materials in the engineering industry
- display knowledge of possibilities and limitations of manufacturing techniques
- display knowledge of common manufacturing methods
- display comprehension of theoretical concepts related to manufacturing techniques and product development

#### Skills and abilities

- demonstrate ability to select suitable manufacturing techniques based on material choice and manufacturing possibilities

#### Judgement and approach

- demonstrate ability to compare manufacturing methods with respect to production cost, as well as possibilities and limitations regarding material and design.

### Content

The course provides understanding of common manufacturing methods and knowledge of common manufacturing techniques for engineering products of metallic and polymer materials.

The course includes:

- Introduction to manufacturing technology and its relation to product development
- Overview and comparison of common manufacturing techniques within:
  - moulded manufacturing,
  - powder metallurgy,
  - plastic processing,
  - machining,
  - joining,
  - additive manufacturing,
  - surface technology
- Theory contributing to understanding of manufacturing methods
- Practical work in workshop for familiarity with selected manufacturing techniques
- Analysis of selected manufacturing techniques in commercial products
- Basic relationships between manufacturing, material properties, design and cost of manufacturing

## Type of instruction

Teaching is in the form of lectures, exercises and laboratories:

- Classroom teaching including lectures and interactive exercises
- Laboratories for familiarity with manufacturing equipment and concretization of manufacturing techniques
- Laboration and independent group work provide opportunity to practice comparison and selection of manufacturing techniques in context of a commercial product

Language of instruction is Swedish but English may occur.

## Examination and grades

The course is graded 5, 4, 3 or U.

Registration of examination:

Name of the Test	Value	Grading
Examination <sup>1</sup>	4 credits	5/4/3/U
Laboratory	1.5 credits	G/U
Assignments	1 credit	G/U
Project	1 credit	G/U

<sup>1</sup>Determines the final grade of the course, which is issued only when all course units have been passed.

## Course literature

Please note that changes may be made to the reading list up until eight weeks before the start of the course.

S. Kalpakjian and S.R. Schmid, Manufacturing Engineering and Technology, 8th ed, 2020, ISBN-13: 9780135211427