COURSE SYLLABUS
Manufacturing Technology, 6 credits

Tillverkningsteknik, 6 högskolepoäng

Course Code:	TTVK18	**Education Cycle:**	First-cycle level
Confirmed by:	Dean Apr 6, 2018	**Disciplinary domain:**	Technology
Revised by:	Director of Education May 25, 2020	**Subject group:**	MT1
Valid From:	Aug 24, 2020	**Specialised in:**	G1F
Version:	2	**Main field of study:**	Mechanical Engineering

Intended Learning Outcomes (ILO)

After a successful course, the student shall;

Knowledge and understanding
- display knowledge of the most common cutting, shaping and joining metallic manufacturing processes used in the engineering industry
- display knowledge of manufacturing techniques
- demonstrate comprehension of theoretical concepts related to product development and manufacturing processes
- demonstrate comprehension of a scientific approach including critically scrutinizing, openly accounting, argumentative and referring to science.

Skills and abilities
- demonstrate the ability to critically review the content of scientific work, results and relevance from formulated goals and used methods
- demonstrate the ability to choose prototyping methods or manufacturing methods based on material selection and manufacturing technology.

Judgement and approach
- demonstrate the ability to assess relevant scientific aspects
- demonstrate the ability to compare the suitability of different manufacturing methods based on performance, production volume, power requirements, cost efficiency and sustainable development related to process selection for the manufacture of a component.

Contents

The course deals with manufacturing methods for product production and production of engineering products as well as prototypes in small series and serial production.

The course contains the following:
- Overview of manufacturing methods within: Molded manufacturing (including casting, forging,

extrusion), Plastic processing, Cutting, Bonding, Powder metallurgy
- Surface treatment, surface roughness, abrasion and surface coating
- Basic interaction between manufacturing, material properties, product requirements and cost
- Overview of the technical materials classification and properties
- Method and selection of materials based on properties and process capacity from a business perspective and a sustainability perspective
- Prototype manufacturing and Additive manufacturing
- Scientific papers in the field and critical review of such papers

Type of instruction

Lectures as well as compulsory laboratory work, assignments and project assignment

The teaching is conducted in English.

Prerequisites

General entry requirements and completed courses in Engineering Materials, 7.5 credits (or the equivalent).

Examination and grades

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

Registration of examination:

Name of the Test	Value	Grading
Examination[I]	3 credits	5/4/3/U
Laboration	1 credit	U/G
Project work	1 credit	U/G
Assignments	1 credit	U/G

[I] Determines the final grade of the course, which is issued only when all course units have been passed.

Course literature

The literature is preliminary until one month before the course starts.
S. Kalpakjian and S.R. Schmid, Manufacturing Engineering and Technology, 6th ed, 2009, ISBN-13: 9780136081685.