

**SYLLABUS**

# **Manufacturing Technology**

## **7.5 credits B0012T**

**Tillverkningssteknik**

**Course syllabus admitted: Spring 2014 Sp 3 - Spring 2020 Sp 4**

**DECISION DATE**  
**2013-02-15**

# Manufacturing Technology 7.5 credits B0012T

## Tillverknings teknik

### First cycle, B0012T

Education level	Grade scale	Subject	Subject group (SCB)
First cycle	G U 3 4 5	Produktionsteknik	Mechanical Engineering

## Entry requirements

In order to meet the general entry requirements for first cycle studies you must have successfully completed upper secondary education and documented skills in English language +

Swedish upper secondary school courses Mathematics 1a/1b/1c (specifik entry A7).

Or:

Swedish upper secondary school courses Mathematics A (specifik entry 7)

## Selection

The selection is based on final school grades or Swedish Scholastic Aptitude Test.

## Examiner

Torbjörn Ilar

## Course Aim

On completion of the course the student shall be able to:

- Understand different manufacturing methods at the manufacturing of details in metallic material
- Report the choice of manufacturing method related to casting, plastic deformation and cutting deformation
- Report the advantages with spraying
- Report the operation plastic forming and cutting deformation of plate details
- Report the production units for casted details
- Report the environmental influences of the casting technology
- Report the non destructive testing methods used for the products

## Contents

The course starts with the basic theories for plastic deformation with the focus on extrusion, the construction of the extrusion press, the design of the matrise and different oils at cold and hot extrusion.

Next part is the basic theory of cutting deformation and forming of sheet, followed by an overview of different casting methods. Next part is the properties of the casting metal during melting, casting and solidification followed by the solidification process at different casting methods. Next section is the design and construction of incasting systems and meters.

This is followed by the construction principles and the properties of cast materials. The design of the casting plant and the environmental aspects related to that.

The course is finalized with the nondestructive testing of the products.

## Realization

Each course occasion's language and form is stated and appear on the course page on Luleå University of Technology's website.

Lectures, design calculations and field trips

## Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided. Written examination 5 credits ( U-3-4-5 ), design calculations 2 credits( U-G), field visit 1 credit

## Literature. Valid from Spring 2014 Sp 3

Fredriksson, Hasse (1986) Metallernas gjutning. Stockholm: KTH Institutionen för metallers gjutning)  
Fomningshandboken. Utgåva 2, 1988  
Kompendier: Sprutning

## Course offered by

Department of Engineering Sciences and Mathematics

## Items/credits

Number	Type	Credits	Grade
0001	Written Exam	5	G U 3 4 5
0002	Exercise	1.5	U G#
0003	Study Visit	1	U G#

## Last revised

by Mats Näsström 2013-02-15

## Syllabus established

by Mats Naesstroem 2013-02-15