



Course code      Course title  
METRO 003      Component Casting

## Prerequisites

Basic understanding of materials. Advantage to have experience of foundry production.

## Training Objectives

The goal of the course is to give a basic understanding about engineering and industrial design of components manufactured by casting. The students should get a base for using simulation tools for studying phenomena relevant for the casting process (e.g. heat flow, fluid flow and thermal stresses), as an aid in the product development process.

## Summary

Casting is the most used manufacturing method of components in the world. The engineering- and industrial design of cast components require integration of a large part of the process chain to be successful.

What is important for the industrial- and engineering designer to know about castings, material selection, manufacturing and simulation?

Some key topics are,

- Which casting manufacturing methods are available?
- Which materials can be cast and what properties can be obtained in a component?
- Design of cast components; lots of freedom, but also some restrictions.
- Why do we have to know about the casting process to make a good design?
- Which phenomena can be studied/predicted by means of simulation?
- How to make prototypes and what virtual prototyping methods are available?
- What types of products are frequently produced by casting?