



# MG2044 Additive Manufacturing 6.0 credits

## Additiv tillverkning

This is a translation of the Swedish, legally binding, course syllabus.

If the course is discontinued, students may request to be examined during the following two academic years

## Establishment

On 2020-10-01, the Dean of the ITM School has decided to establish this official course syllabus to apply from spring semester 2022, registration number: M-2020-1989.

## Grading scale

A, B, C, D, E, FX, F

## Education cycle

Second cycle

## Main field of study

Mechanical Engineering

## Specific prerequisites

## Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

# Intended learning outcomes

After passing the course, the student should be able to:

1. Summarise and explain various additive manufacturing (AM) processes
2. Describe and analyse the limitations, possibilities, applications and the materials that are used in different AM techniques

For higher grades, the student should furthermore be able to:

Identify and analyse design possibilities, based on specific requirements and AM techniques

Explain the role of important parameters and machine components

## Course contents

The course deals with:

- Technologies and materials for metal additive manufacturing (with a focus on parameters and components in Laser Powder Bed Fusion, Electron Beam Powder Bed Fusion and Direct Energy Deposit),
- Technologies and material forms for polymer additive manufacturing (with a focus on parameters and components in Fused Deposit Modelling, stereolithography, binder/material jetting, selective laser sintering),
- Post-processing of metals and polymers in additive manufacturing
- Applications, design considerations and software for additive manufacturing

## Examination

- PROA - Project work, 3.0 credits, grading scale: P, F
- TENA - Written examination, 3.0 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

## Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.

