



# CK105V Materials in a Circular Society - Polymeric Materials

## 1.0 credits

**Material i ett cirkulärt samhälle - polymera material**

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**

Course syllabus for CK105V valid from Autumn 2024

### **Grading scale**

P, F

### **Education cycle**

First cycle

### **Main field of study**

Technology

### **Specific prerequisites**

Physics 2, Chemistry 1, Mathematics 3c.

# Language of instruction

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

## Intended learning outcomes

After the course, the student will be able to:

- Explain the characteristics of different polymeric materials and describe the properties, applications and manufacturing of the most common polymeric materials.
- Discuss insightfully about the strengths and weaknesses for different polymeric materials, both from a user's perspective and from a sustainability perspective.
- Explain how the different polymers can be recycled with low environmental impact in a circular economy.
- Define the basics of a circular economy, explain important definitions within this scientific field and explain how a circular economy is related to sustainability.

## Course contents

This course aims to give a basic understanding and overview of the most common polymers, including their properties, manufacturing, recycling and their role in a sustainable society and a circular economy. More specifically, the course includes:

- Basic knowledge about the most common polymers and plastics and their properties and applications.
- Basic knowledge about the manufacturing of the most common (synthetic) polymers.
- Knowledge about the environmental impact of polymers from a sustainable perspective, including e.g. recycling, climate impact, microplastics and chemicals.
- Basic knowledge about circular economy.

Note that this introductory online course will be given in Swedish!

## Examination

- TEN1 - Digital examination, 1.0 credits, grading scale: P, 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.