



# HE1015 Robotics 7.5 credits

## Robotik

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 HE1015 valid from Autumn 2013

## Grading scale

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

## Education cycle

First cycle

## Main field of study

Electrical Engineering, Technology

## Language of instruction

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

## Intended learning outcomes

The aim of the course is to provide good knowledge about the design of robotic systems, their function, programming and applications.

After passing the course, you should be able to:

- explain the design of a robotic system
- describe the limitations and possibilities of robots
- explain and make use of the safety requirements for robotic use in a practical way
- master the basics of robot programming, which means to:
  - Account for the most common robot programming languages on the market
  - Explain the meaning of the different programming paradigms, “on-line”, “off-line” and “play-back”
  - Structuring robot programs that are safe and easy to maintain
  - Apply one of the most common languages, such as Rapid
  - Create robot programs from both “online” and “offline” environments
- program a robotic system
- use tools for simulation of robotic systems
- describe the necessary steps in project planning
- describe sensor systems and tools used together with robots.

## Course contents

- trends of development
- application areas
- the design of robot
- driving systems
- internal and external sensors
- application tools
- programming
- safety
- project planning

## Disposition

- Lectures
- Laboratory exercises
- Assignment

## Specific prerequisites

## Course literature

Bolmsjö, Gunnar: Industriell robotteknik, 2006, ISBN: 9144008481

## Examination

- INLA - Assignment, 2.0 credits, grading scale: A, B, C, D, E, FX, F
- LABA - Practical Exercises, 2.0 credits, grading scale: P, F
- TENA - Written Examination, 3.5 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.

## Other requirements for final grade

- Passed written examination, grading A-F
- Passed Practical exercises, grading P/F
- Passed Assignment, grading A-F

The final grade is based on approved written examination.

## 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.