

**SYLLABUS**

# **Formal Languages and Theory of Computation 7.5 credits D7006E**

**Formella språk och beräkningsteori**

**Course syllabus admitted: Autumn 2015 Sp 1 - Present**

**DECISION DATE  
2015-06-12**

# Formal Languages and Theory of Computation 7.5 credits D7006E

## Formella språk och beräkningsteori

### Second cycle, D7006E

<b>Education level</b>	<b>Grade scale</b>	<b>Subject</b>	<b>Subject group (SCB)</b>
Second cycle	G U 3 4 5	Datalogi	Computer Technology

## Entry requirements

Basic knowledge in mathematics equivalent to M0031M and a basic discrete mathematics course, equivalent to M0009M.

## Selection

The selection is based on 30-285 credits

## Examiner

Jingsen Chen

## Course Aim

The aim of the course is to give an introduction to and fundamental theories about computation and about different models of computation.

## Contents

Deterministic and non-deterministic finite automata, regular expressions and languages, context-free languages and grammars, pushdown automata, Turing machines, undecidability and undecidable problems.

## Realization

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

Lectures. During the course there could be homework assignments that render bonus points on the written exam that follows directly after the course has been given.

## 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 exam.

## Remarks

The credits for this course cannot be combined with the credits for MAM205.

## Overlap

The course D7006E is equal to SMD177

## Literature. Valid from Autumn 2007 Sp 1

Michael Sipser, "Introduction to the Theory of Computation", 2nd Edition, Thomson, Boston, 2006, ISBN: 0-619-21764-2.

## Course offered by

Department of Computer Science, Electrical and Space Engineering

## Items/credits

Number	Type	Credits	Grade
0001	Written exam	7.5	G U 3 4 5

## Study guidance

Study guidance for the course is to be found in our learning platform Canvas before the course starts. Students applying for single subject courses get more information in the Welcome letter. You will find the learning platform via My LTU.

## Last revised

by Jonny Johansson, HUL SRT 2015-06-12

## Syllabus established

by the Department of Computer Science and Electrical Engineering 2007-02-28