



# KD2390 Selective Organic Synthesis 9.0 credits

## Selektiv organisk syntes

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 KD2390 valid from Autumn 2011

## Grading scale

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

## Education cycle

Second cycle

## Main field of study

Chemical Science and Engineering

## Specific prerequisites

### **Admission requirements for programme students at KTH:**

At least 150 credits from grades 1, 2 and 3 of which at least 110 credits from years 1 and 2, and bachelor's work must be completed, within a programme that includes:  
75 university credits (hp) in chemistry or chemical engineering, 20 university credits (hp) in mathematics and 6 university credits (hp) in computer science or corresponding.

**Admission requirements for independent students:**

75 university credits (hp) in chemistry or chemical engineering, 20 university credits (hp) in mathematics and 6 university credits (hp) in computer science or corresponding. Documented proficiency in English corresponding to English B.

## 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 should be able to:

- describe basic stereochemical concepts
- describe principles for stereoselective synthesis, in particular for enantioselective synthesis
- explain the stereochemistry observed in chemical reactions
- suggest methods for stereoselective synthesis of simple organic compounds containing stereogenic elements
- identify suitable reagents for stereoselective transformations
- use retrosynthetic analysis for the construction of synthetic routes for simple organic compounds
- prepare organic compounds using advanced synthetic methodology

## Course contents

- Fundamental stereochemical concepts
- Synthetic strategy and principles for stereoselective, in particular enantioselective, chemical transformations
- Transition metal catalysis
- Frontier orbital controlled reactions
- Retrosynthetic analysis
- Advanced organic synthesis

## Disposition

Lectures, classroom exercises, workshop and laboratory work.

## Course literature

Clayden, Greeves, Warren and Wothers: Organic Chemistry, Oxford University Press, 2001 (ISBN 0 19 850346 6) eller Clayden, Greeves, Warren and Wothers: Organic Chemistry, Oxford University Press, 2012 (ISBN 978 0 19 927029-3) samt utdelat material.

## Examination

- LAB1 - Laboratory Work, 2.5 credits, grading scale: P, F
- TEN1 - Examination, 6.5 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

Examination (TEN1; 6,5 credits)

Laboratory Work (LAB1; 2,5 credits)

The final grade will be the same as for the 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.