



# FCK3321 Transition Metal Catalysis in Organic Synthesis 10.0 credits

Övergångsmetallkatalys i organisk syntes

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

## Establishment

Course syllabus for FCK3321 valid from Autumn 2022

## Grading scale

P, F

## Education cycle

Third cycle

## Specific prerequisites

Eligible for studies at the third-cycle level.

To be able to profit from the course the graduate student should have taken one of the courses KD2310, KD2390 or CE2385, or should have acquired the equivalent knowledge elsewhere.

## Language of instruction

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

## Intended learning outcomes

Upon completion of the course the doctoral student should have the knowledge and ability to:

- explain the fundamental principles of organometallic complexes with regard to chemical bonding and reactivity
- demonstrate insight into fundamental chemical transformations of organometallic complexes
- describe and reflect upon organometallic reaction mechanisms
- apply the knowledge in organometallic chemistry and catalysis for designing synthetic routes to advanced organic compounds
- reflect on how transition metal catalysis can be applied to facilitate sustainable chemistry

## Course contents

In this course, the participants are expected to develop their proficiency in:

- the connection between the structure of organometallic complexes and their properties
- catalytic organometallic processes, such as cross-coupling reactions, carbene chemistry, carbonylation chemistry, and C–H activation
- organometallic reaction mechanisms

## Examination

- TEN1 - Written exam, 6.0 credits, grading scale: P, F
- INL1 - Hand in assignments, 4.0 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.

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

## 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.