



FKF3090 Polymer Chemistry 6.0 credits

Polymerkemi

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 FKF3090 valid from Spring 2022

Grading scale

P, F

Education cycle

Third cycle

Specific prerequisites

Eligible for studies at the third-cycle level as well as approved basic course in polymer chemistry.

Language of instruction

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

Intended learning outcomes

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

- From a desired macromolecular chemical structure, draw a suitable synthesis path (mechanism) and suggest appropriate process parameters for its modification and, when possible, chemical recycling.
- From a given monomer draw up a suitable synthesis path (mechanism), describe the associated kinetics, suggest appropriate process parameters and understand the relationship between polymerization conditions and the polymer product characteristics.
- Value, understand and apply the concepts of green chemistry in the development of the field of polymer chemistry.
- Identify a current research question within the field of polymer chemistry and orally present a suggested solution of how to approach it.

Course contents

Different polymerization processes regarding chemical mechanisms and different steps, side-reactions and modifications are compared and discussed. The course aims at giving knowledge and tools for designing new polymers. This is an advanced course in polymer chemistry, which will further deepen the knowledge in the chemistry, structure, production and modification processes of polymers. This is not a continuous course like the polymer chemistry course for undergraduate students, which aims at giving a comprehensive picture, but more of a methodology course, which will supplement and deepen the knowledge acquired from the basic course. The course will stimulate critical examination and discussion about actual synthesis routes in the field, existing as well as new ones.

Examination

- INL1 - Inlämningsuppgifter, 4.0 credits, grading scale: P, F
- SEM1 - Seminar, 2.0 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.

To pass the course the student must pass all home assignments and the oral presentation at the seminar.

Other requirements for final grade

At least 80% attendance at lectures

Transitional regulations

If the examination form is changed, the student will be examined according to the examination form that applied when the student was admitted to the course. If the course is completed, the student is given the opportunity to be examined on the course for another 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.