



Kursplan

för forskarkurs

Total Synthesis of Natural Products

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7.5 Högskolepoäng

7.5 ECTS credits

Kurskod: KO40008
Gäller från: VT 2020
Institution Institutionen för organisk kemi

Förkunskapskrav och andra villkor för tillträde till programmet

Admitted to PhD studies

Lärandemål

After completion of the course the student should be able to:

- Perform retrosynthetic analysis of complex target molecules
- Demonstrate knowledge of strategic and tactical aspects of synthetic planning
- Demonstrate knowledge of the principles of convergent multi-step synthesis
- Demonstrate knowledge of the principles of stereoselective organic synthesis
- Describe reaction mechanisms in detail
- Plan multi-step syntheses of complex organic molecules
- Use modern methods of asymmetric synthesis in synthetic planning
- Use organometallic reagents and catalysts in synthetic planning
- Use protective groups in synthetic planning
- Evaluate synthetic plans in terms of strategy, tactics and efficiency

Innehåll

The aim of the course is to provide an introduction to selected topics in modern synthetic organic chemistry. The main emphasis will be placed on state of the art methods for stereoselective synthesis and applications to the total synthesis of complex molecules, particularly biologically significant natural products.

The lectures are based on selected chapters from the book "Classics in Total Synthesis III; Further Targets, Strategies, Methods" by Nicolaou and Chen (Wiley-VCH, 2011) and will illustrate in detail a variety of approaches to the planning and execution of the total chemical synthesis of a variety of complex target molecules. In a number of cases, two or more different syntheses of the same target molecule will be discussed, compared and contrasted.

Obligatoriska moment

Participation in lectures and seminars is compulsory. In the event of special circumstances, the examiner may, after consultation with the teacher concerned, grant a student exemption from the obligation to participate in certain compulsory instruction.

Examinationsformer

The course is examined as follows:

Knowledge assessment takes the form of written assignments, oral presentations and participation in seminars.

The course and examination language is English.

Grading (passed or failed) is related to the intended learning outcomes.

Grading criteria are handed out at the start of the course.

Students who receive a failing grade on a regular examination are allowed to retake the examination as long as the course is still given.

Arbetsform

Instruction (in English) consists of lectures and seminars.