CH-438

Total synthesis of natural products

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Cursus	Sem.	Type
Chemistry and Chemical Engineering		Opt.
Chimiste	MA1, MA3	Opt.

Language of teaching	English
Credits	3
Session	Winter
Semester	Fall
Exam	Written
Workload	90h
Weeks	14
Hours	**2 weekly**
Courses	2 weekly
Number of positions	

Summary

Complex polycyclic natural products are chosen to illustrate the evolution of the state-of-the-art of the field, the interplay between strategy and new reactions as well as the importance of implementing multi-bond forming processes in a synthesis.

Content

Retro-synthesis and synthesis of different classes of natural products important for their structure and/or bioactivity.

Keywords

Retro-synthetic analysis, Synergism between strategy and new reactions, Domino reactions, multicomponent reactions, Oxidative coupling, Pattern Recognition, Hidden Symmetry, C-H Functionalization, Asymmetric organocatalysis

Learning Prerequisites

Recommended courses

General knowledge of organic reactions. Basic knowledge of retro-syntheis. EPFL lectures fonctions et réactions organiques I and II, synthèse asymétrique, target synthesis, structure and reactivity or equivalent courses.

Learning Outcomes

By the end of the course, the student must be able to:

- Draw reaction mechanism
- Analyze synthetic route
- Elaborate synthetic scheme
- Design synthetic strategy

Supervision

Office hours	Yes
Assistant.e.s	Yes
Forum	Yes

Resources

Ressources en bibliothèque

- Classics in Total Synthesis II : / Nicolaou
- Workbook for Organic Synthesis / Warren
- Classics in Total Synthesis III : / Nicolaou
- Organic Synthesis : The Disconnection Approach / Wyatt
- Classics in Total Synthesis : Targets, Strategies, Methods / Nicolaou

Websites

- http://scgc.epfl.ch/telechargement_cours_chimie

Moodle Link

- https://go.epfl.ch/CH-438