

CH-438

**Total synthesis of natural products**

Zhu Jieping

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

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

**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-synthesis. 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
Assistants	Yes
Forum	Yes

**Resources****Ressources en bibliothèque**

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

#### **Websites**

- [http://scgc.epfl.ch/telechargement\\_cours\\_chimie](http://scgc.epfl.ch/telechargement_cours_chimie)