

Module P 107: Catalysis and Sustainable Synthesis

Learning objectives:

Will provide a deeper understanding of different catalysis aspects for the synthesis of pharmaceuticals, fine chemicals, monomers, and fuels.

Course units and temporal allocation:

Module P 107 'Catalysis and Sustainable Synthesis' is comprised of the following course units:

	HPW	Semester
Lecture	2	WS
Lab course	6	WS

This module will be offered by lecturers of organic chemistry.

Course content:

- **Lecture:** The general catalytic strategies will be discussed by keeping more focus onto photocatalysis, electrocatalysis and thermocatalysis. Basics of all these catalysis aspects will be exemplified along with their application for the synthesis of drug molecules. Additionally, the activation of small molecules such as CO₂, O₂ will be discussed and their applications into organic synthesis will also be studied. Furthermore, catalysis for the synthesis of monomers of polymers will be depicted in this course.
- **Lab course:** Individual aspects of catalysis and sustainable synthesis are taught by working on a current research project in one of the participating research groups. The results are summarized in a report and presented in a seminar lecture.

Entrance requirements:

None.

Assessment:

- Graded oral or written examination on the lecture 70%
- Graded lab course with report and seminar presentation 30%

The module grade will only be given after successful completion of both parts.

Work load:

The lecture results in 60 hours work load including lecture preparation, and the laboratory course work load is 120 hours (module with 7 credits). 30 hours are needed to prepare for the examination.

The overall work load is: 210 hours (module 7 credits).

ECTS Credit Points: 7