

CH-629

**Frontiers in Sustainable Chemical Synthesis**

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| Cursus                             | Sem. | Type |
|------------------------------------|------|------|
| Chemistry and Chemical Engineering |      | Opt. |

|                            |                   |
|----------------------------|-------------------|
| Language of teaching       | English           |
| Credits                    | 2                 |
| Session                    |                   |
| Exam                       | Oral presentation |
| Workload                   | 60h               |
| <b>Hours</b>               | <b>46</b>         |
| Courses                    | 10                |
| TP                         | 36                |
| <b>Number of positions</b> | <b>9</b>          |

**Frequency**

Every 2 years

**Remark**

Spring 2025

**Summary**

The students will become familiar with the most recent progress in sustainable synthetic chemistry, covering a broad range of topics such as catalysis, heterocyclic chemistry, stereoselective synthesis and new synthetic tools.

**Content**

A thorough knowledge and understanding of chemical transformations is essential for the synthetic chemist. In this course series, the student will become familiar with the recent methodological developments in chemistry. With the tools of modern chemistry, they will be able to design new efficient, economical and environmentally friendly reactions and synthesis. Every student will be assigned a specific topic of research. He will be expected to make a thorough literature research on his subject, including pioneering works, state of the art and most recent developments. He will present his results to the class and the instructor and organize a short exercise session on the topic for the class. This training will empower the student with all the tools of modern chemistry, which will be highly useful for his potential career as a process or medicinal chemist in industry, as well as an independent group leader in academia. A broad range of topics will be covered, including catalysis, heterocyclic chemistry, stereoselective synthesis and new synthetic tools.

**Keywords**

Organometallic Chemistry, Organic Chemistry, Catalysis, Synthesis Efficiency, Sustainable Chemistry

**Learning Prerequisites****Important concepts to start the course**

Master EPFL or Equivalent

**Learning Outcomes**

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

- Perform an independent literature search and present and discuss the results
- Take into consideration of the frontiers of research in synthetic chemistry

**Assessment methods**

Oral presentation (exposé)

## Resources

### Moodle Link

- <https://go.epfl.ch/CH-629>