

Advanced Organic Chemistry---2026 spring semester

A. Course Description

The course in advanced organic chemistry gives extended knowledge in the field of organic synthesis. The students will gain a deeper understanding of advanced synthetic methods as well as a broader knowledge regarding organic reactivity. The important aspects of reactivity and selectivity of a particular transformation within the field of organic synthesis will be discussed in this course. In particular, organic reactions for controlling the chemo-, regio- and stereoselectivity are highlighted.

B. Lecturers

Dr. Cheng-Chung Wang 王正中 (wangcc@chem.sinica.edu.tw)

C. Lecture time & place

Tuesdays AM 9:10- PM 12:00, classroom B105 (3 sessions / week, 50 min / session)

D. Text Book

"Advanced Organic Chemistry, Part A: Reactions and Synthesis" by Francis A. Carey and Richard J. Sundberg. 5th edition. New York, NY: Springer, 2007.

E. References

1. "The Art of Writing Reasonable Organic Reaction Mechanisms" by Robert B. Grossman, New York, NY: Springer.
- II. "The Logic of Chemical Synthesis" by E. J. Corey and Xue-Min Cheng, John Wiley & Sons, Inc.

F. Teaching Method

Oral

G. Lecture Dates and Syllabus

February 24 Structure and Bonding

March 3 Polarity of Bonds and Molecules, Intermolecular Forces

March 10 Stereochemistry, Conformation and Stereoselectivity I

March 17 Stereochemistry, Conformation and Stereoselectivity II

March 24 Reactive Intermediates

March 31 Methods of Studying Organic Reactions

April 7 Acids and Bases

April 14 Midterm Exam