

Advanced Organic Chemistry---2018 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

Thursdays 13:30-16:30, 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

- I. "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

March 1 Chemical Bonding and Molecular Structure

March 8 Stereochemistry, Conformation and Stereoselectivity

March 15 Structural Effects on Stability and Reactivity

March 22 Nucleophilic Substitution

March 29 Carbonions and Other Nucleophiles

April 12 Addition, Condensation and Substitution Reactions of Carbonyl Compounds

April 19 Aromaticity and Aromatic Substitution

April 26 Concerted Pericyclic Reactions

May 3 Midterm Exam