

# 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. Jiun-Jie Shie 謝俊結 ([shiej@gate.sinica.edu.tw](mailto:shiej@gate.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 B: Reactions and Synthesis" by Francis A. Carey and Richard J. Sundberg. 5<sup>th</sup> 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

**May 10** Nucleophilic Substitution and Elimination

**May 17** Oxidations and Reductions

**May 24** Reactions of Aromatic Compounds

**May 31** Photochemistry and Free-Radical Reactions

**June 7** Cycloadditions and Rearrangements

**June 14** Organometallic Compounds in Organic Synthesis

**June 21** Transition Metal-Catalyzed and Mediated Reactions

**June 28** The Logic of Chemical Synthesis (retrosynthetic analysis and strategy in total synthesis)

**July 5** Final Exam