

**Advanced Organic Chemistry I
Physical Organic Chemistry
Chemistry 411/511**

This course will examine the tools -- both theoretical and experimental -- that the modern organic chemist has at his or her disposal for elucidating mechanisms.

Instructor

Professor J. K. Lee

Office: Room 382 Wright-Rieman Laboratories

Meetings

Lectures: Mon, Thu noon, eLearning website:

Log on (<https://my.elearning.rutgers.edu>) at class time; you should see our class and you can join.

Office hours: before class, will disseminate site in class

Required Texts

- "Modern Physical Organic Chemistry,"; Eric V. Anslyn and Dennis A. Dougherty (Textbook AND Solutions manual)
- "Perspectives on Structure and Mechanism in Organic Chemistry"; F. A. Carroll (2nd Ed.)

Additional Useful References, Not Required

- "Advanced Organic Chemistry," 4th Edition; F. A. Carey and R. J. Sundberg
- "Mechanism and Theory in Organic Chemistry", 3rd Edition; T. H. Lowry and K. S. Richardson
- "Theoretical and Physical Principles of Organic Reactivity"; A. Pross
- "The Physical Basis of Organic Chemistry"; H. Maskill
- "Physical Organic Chemistry"; N. S. Isaacs
- "March's Advanced Organic Chemistry: Reactions, Mechanisms, and Structure", 4th Edition; J. March
- "Reactive Intermediate Chemistry", R. A. Moss, M. S. Platz, and M. Jones

My Expectations

- A working knowledge of undergraduate Organic Chemistry is expected.
- You should also have taken two semesters of physical chemistry (quantum mechanics and statistics)
- This class is not about memorization; it is about developing analytical thinking.
- By the end of the semester, for a particular reaction you should be able to a) write a reasonable arrow-pushing mechanism and b) use the tools you have learned to explain the observed reactivity, and c) evaluate the validity/plausibility of others' explanations.

Course Requirements

- Three exams. • "Homework" problems will be primarily from Anslyn; solutions are in the solutions manual accompanying each text.
- A copy of this syllabus and problem sets are available on sakai.rutgers.edu, Chem 411_511 F20 Announcements will also be posted here.

Resources for practice problems in arrow pushing:

<https://www.organicchemproblems.com/>

<https://www2.chemistry.msu.edu/faculty/reusch/VirtTxtJml/Questions/problems.htm>