CHEM 200 – CHEMISTRY FUNDAMENTALS (1 UNIT)

COURSE OVERVIEW

SUMMARY

Chem 200 is a graduate-level course in physical organic chemistry. It is intended for first-year graduate students interested in synthetic chemistry or chemical biology; however, it is possible to take this class as a junior or senior undergraduate. The course covers thermodynamics, kinetics, and reaction mechanisms in the context of organic chemistry. Many of the topics covered in this class are also discussed in Chem 12A; however, this class is a much more in-depth and advanced exploration of such topics.

PREREQUISITES

Chem 12A/B or Chem 3A/B and consent of the instructor.

TOPICS COVERED

- Structure, bonding, strain, and stability
- Stereochemistry
- Reactivity, kinetics, and linear free energy relationships
- Catalysis

WORKLOAD

COURSEWORK

- Two problem sets.
- Weekly quizzes on assigned readings.
- One 3-hour final exam at the end of the six-week course.

TIME COMMITMENT

Three hours of lecture per week. Occasionally (every 2-3 weeks), an optional 2-hour problem solving session on Saturday morning.

The textbook is quite dense and reading is highly recommended in order to do well in this class (1-2 hours per week for reading). Problem sets are meant to be challenging and are graded for accuracy (3-4 hours per week for problem sets).

CHOOSING THE COURSE

WHEN TO TAKE

This class is only offered in the fall. It is an excellent class for juniors and seniors interested in pursuing graduate studies in chemistry; however, it does not make sense to take this class if it conflicts with courses that are undergraduate degree requirements.

WHAT NEXT?

There are many other graduate-level courses that are available for students who have completed this class.

ADDITIONAL COMMENTS AND TIPS

This class is very different from the typical undergraduate class. The focus of this class is more on problem solving and experimental design, rather than rote memorization or computation. A significant portion of lecture is set aside to solve problems in small groups and present the solution to the entire class. The topics covered in this class are deceptively simple; however, the problem sets and exams in this class are not trivial.

It is also important to keep in mind that while this is a challenging class, the grading curve is quite lenient because it is a graduate-level class. Most students will receive grades in the A-B range.

Written by: Sophia Weng

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