

Organic Chemistry 206 - Spring 2019

Instructors

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Textbooks

D. R. Klein, *Organic Chemistry as a Second Language: First Semester Topics*, 4th Edition (recommended), W. H. Brown, C. S. Foote, B. L. Iverson and E. V. Anslyn, *Organic Chemistry*, 8th Edition (strongly recommended, earlier editions okay) and B. Iverson and S. Iverson, *Student Study Guide and Solutions Manual* (recommended). OneNote slide handouts (BlackBoard). *Course materials are described on the BlackBoard site.*

Online Homework

Sapling Learning (required).

Model Kits

Darling Organic, Organometallic, Inorganic Model Set (recommended, may be used during tests).

Grading

| Test | Coverage | Points | Day | Date |
|-------------------|----------------|------------|----------------------------------|----------------|
| Test 1 | 1, 4 | 150 | Monday | February 4 |
| Test 2 | 2 - 3 | 150 | Monday | February 25 |
| Test 3 | 5 - 6, 8 | 150 | Monday | March 25 |
| Test 4 | 12 - 13 | 150 | Monday | April 15 |
| Final Exam† | 5 - 9, 12-13 | <u>400</u> | Tuesday | April 30 |
| | total | 1000 | | (7:00-10:00pm) |
| †Online Questions | 1 - 9, 12 - 13 | 100 | (100 of 400 points of the final) | |

Problem Sessions. Semi-regular problem-working sessions will be announced in class. Attendance is optional but encouraged.

Office Hours. Wednesday 4:30-5:30 or by appointment. If the office door is open, I am somewhere in the building.

Website. Blackboard. The course ID is CHEM206-01-S19.

Other. Test problems will be taken from the lecture and from the material and problems in the text. The tests will be composed of a variety of problems: multiple-choice, short answer and especially those that require drawing structures.

Online Questions. Online questions (take home portion of the final exam) will be completed through Sapling Learning. There are 110 points possible, but at most 100 can count towards the final exam score. Each set is due by 11:55 pm on the posted date.

Final Exam. The final exam will cover the material learned in the last half of the course: reactions, mechanisms and spectroscopy. The exam will have questions worth a total of 300 points, and the other 100 points will come from the online questions.

"Bad Exam Day" Policy. Your lowest, *mean-relative* midterm exam will be dropped. An example spreadsheet showing is on Blackboard.

Schedule

| <i>Week of</i> | <i>Topics</i> | <i>Chapter</i> | <i>Sections</i> | <i>Due</i> |
|-------------------------|---|---------------------|--|----------------------------|
| Jan 16 | Structure and Bonding, Functional Groups | 1 | 1.1 – 1.4 | |
| Jan 21 | Polarity, Resonance, Molecular Orbital Theory | 1 | 1.5 – 1.10 | Chp 1A, 1/25 |
| Jan 28 | Acids and Bases Alkanes and Cycloalkanes: Nomenclature | 4 2 | 4.1 – 4.7 2.1 – 2.3 | Chp 1B, 1/30 Chp 4, 2/1 |
| Feb 4 Feb 6 | TEST 1 Alkanes and Cycloalkanes: Isomerism, Conformations and Nomenclature | 1, 4 2 | 2.4 – 2.5 | |
| Feb 11 | Geometrical Isomers, Properties and Reactions Stereochemistry | 2 3 | 2.6 – 2.8 3.1 – 3.3 | Chp 2, 2/15 |
| Feb 18 | Stereochemistry Alkenes: Nomenclature and Properties | 3 5 | 3.4 – 3.9 5.1 - 5.3 | Chp 3, 2/22 |
| Feb 25 Feb 27 | TEST 2 Alkenes: Reactions | 2–3 6 | 6.1 - 6.3 | |
| Mar 11 | Alkenes: Reactions | 6 | 6.3 – 6.5 | Chp 5, 3/14 |
| Mar 18 | Alkenes: Reductions and Stereoselectivity Alkyl Halides and Radicals NMR Spectroscopy | 6 8 13 | 6.6 – 6.7 8.1 – 8.6, 8.8 13.1-13.5 | Chp 6, 3/19 Chp 8, 3/22 |
| Mar 25 Mar 26 | TEST 3 NMR Spectroscopy | 5–6, 8 13 | 13.6 - 13.10 | |
| Apr 1 | NMR Spectroscopy IR Spectroscopy | 13 12 | 13.11 - 13.12 12.1 - 12.5 | Chp 13, 4/5 |
| Apr 8 | Substitution and Elimination | 9 | 9.1 – 9.4 | Chp 12, 4/12 |
| Apr 15 Apr 17 | TEST 4 Substitution and Elimination | 12 – 13 9 | 9.5 - 9.9 | Chp 9, 4/19 |
| Apr 23 | Alkynes | 7 | 7.1 – 7.8 | Chp 7, 4/26 |

Suggested In-Chapter Problems: all

Suggested End-of-Chapter Problems

| | |
|-------------------|--|
| Chapter 1 | 32, 45, 46, 47, 48, 49, 52, 53, 56, 57, 70, 74, 75 |
| Chapter 2 | 24, 25, 26, 30, 33, 43, 49, 50 |
| Chapter 3 | 16, 17, 20, 26, 30, 31, 36, 37 |
| Chapter 4 | 41, 42, 45, 48, 49, 54 |
| Chapter 5 | 14, 15, 20, 23, 24 |
| Chapter 6 | 20, 21, 24, 26, 37, 39, 40, 43, 44, 48, 54 |
| Chapter 7 | 8, 11, 12, 16, 17, 20, 23, 25, 29, 30 |
| Chapter 8 | 8, 9, 14, 15, 25, 26, 28, 30 |
| Chapter 9 | 11, 12, 13, 17, 20, 22, 25, 34, 37, 38, 40, 43, 45, 47, 51, 54 |
| Chapter 12 | 5, 6, 7, 11 |
| Chapter 13 | 15, 16, 17, 18, 20, 21, 24 |