

## Organic Chemistry III

### CHEM 243 Spring 2014

Designed as a continuation of CHEM 241 and CHEM 242, CHEM 243 covers structure, nomenclature, preparation, reactivity and reaction mechanisms for important classes of chemicals with applications in pharmaceutical and polymer industries: aromatic compounds; ketones and aldehydes; amines; carboxylic acids; and carboxylic acid derivatives (acyl halides, anhydrides, esters, amides, and nitriles). CHEM 243 also provides fundamentals of bioorganic chemistry for the rational study of biochemistry, molecular biology, and medicinal chemistry.

#### Objectives:

At the end of the course, students should be able to:

- draw chemical structures;
- use correctly the corresponding systematic (IUPAC) nomenclature;
- write chemical equations for organic reactions;
- write reaction mechanisms;
- solve synthetic schemes;
- exemplify pharmaceutical, medical, and industrial applications of certain organic compounds.

#### Course prerequisites:

CHEM 241 and CHEM 242

#### Lecturer:

Dr. **Monica Ilies**, Chemistry Department

**Office:** Disque 224

[mi73@drexel.edu](mailto:mi73@drexel.edu)

**Lecture:** Mon, Wed, Fri: 3:00-3:50 PM; Disque 108

**Office hours:** e-mail for appointment

#### Course Website: [Drexel LEARN, CHEM 243-SP 13-14](#)

You can access the course website directly through <http://learn.dcollege.net>.

**Note:** Most of our communication will be via e-mail and via the course website.

**Please check regularly the course website and your Drexel email account.**

#### Required Textbook:

L.G. Wade, Jr., *Organic Chemistry*, Pearson, 8<sup>th</sup> Ed., ISBN: 9780321768414

#### Recommended Manual:

L.G. Wade and J. Simek, *Solutions Manual*, Pearson, 8<sup>th</sup> Ed., ISBN: 9780321773890

**Note:** Older editions of the textbook can also be used, but the page numbers, section numbers, and problem numbers may be different.

**1. Grading structure:**

<b>Activity</b>	<b>% Grade</b>	<b>Additional Information</b>
Quizzes	20	See section 3
Exams	35	See section 4
Final Exam	25	See section 5
Participation grade	10	See section 6
Online Homework	10	See section 7
<b>Total</b>	<b>100</b>	

**Grading policy:**

Students who meet all the requirements will earn an **A+** if they score **97-100**; **A** if **93-96**; **A-** if **90-92**; **B+** if **87-89**; **B** if **83-86**; **B-** if **80-82**; **C+** if **77-79**; **C** if **73-76**; **C-** if **70-72**; **D+** if **66-69**; **D** if **60-65**. There is no **D-** in this course. Please feel free to contact me for any question about an exam grade.

Exams and quizzes are based on lecture material and the assigned problems. **The material coverage and practice quizzes/exams will be posted on the course website. Detailed review sheets will also be posted for each quiz or exam to help focus your study.**

**2. Lectures:**

Lectures will be given on topics and sections of the text listed in the course schedule (see p. 5) and will be interactive. **You are responsible for reading all material in these sections whether covered in lecture or not.** Some of the lecture material will be posted on the course website, while some things will be discussed only in class. Therefore, ***constant attendance to lectures is highly recommended.*** The course schedule is provided as a guide and will be revised if dictated by prevailing circumstances (e.g., pedagogical purposes; the level of students' knowledge, etc.).

**Active cell phones and the use of random-access devices (e.g., MP3 players, Palm Pilots, iPods) are NOT ALLOWED during lectures. You are welcome to bring your coffee or snacks, though.**

**3. Quizzes: non-cumulative**

**Two, 15 min** quizzes will be given **during lecture time** as indicated on the course schedule (see p. 5). Each quiz consists of **5 questions** and is worth **100 points**. **The average of the two quizzes will represent 20% of your final grade. There is no make-up for quizzes.**

**4. In-term Exams: non-cumulative**

**Two, 50 min exams** will be given **during lecture time** as indicated in the course schedule (see p. 5). Each exam will consist of **15-20 questions** and is worth **100 points**. **The average of the two midterm exams will represent 35% of your final grade.**

**After the commencement of the exam, no student will be allowed to leave the testing room without handing in the exam.** Students arriving more than 20 minutes late to the exam will not be permitted to take the

exam. All students are responsible for bringing to the exam their own operational writing instruments - **no sharing will be allowed. No other materials will be allowed.**

It generally takes 2-5 school days for grades to be reported back to students.

**Active cell phones and the use of random-access devices (e.g., MP3 players, Palm Pilots, iPods) are NOT ALLOWED in the exam rooms.**

There will be an opportunity during the last week of classes to make up **only one missed exam. The make-up exam will be cumulative and will be taken at the same time by all students who are eligible to take it.** To be eligible to take the make-up exam, a student must **e-mail me with a reasonable explanation for missing the initial exam.** Eligible students will be notified by email regarding the date, time, and location of the exam. **The make-up exam can only be used to replace a missed exam, NOT to improve a grade on an exam that was taken.** There will be **no opportunity to retake the make-up exam**, regardless of the reason for missing it.

### 5. Final Exam: cumulative

The final exam will be a **2 hrs exam** held during the last lecture time (**Mon, June 9<sup>th</sup>**).

The final exam will consist of **30-35 questions**, is worth **100 points**, and will represent **25% of the final grade. All rules mentioned in Section 4 apply to the final exam, too.**

**THERE IS NO MAKE UP FOR THE FINAL EXAM. STUDENTS MUST BE PRESENT FOR THE FINAL TO PASS THE COURSE. A student who (1) does NOT score at least 45% on the final exam AND (2) also has a failing grade on one midterm exams will NOT pass the course, regardless of the rest of his/her performance in the course.**

**Note:** Questions on quizzes and exams will be a mixture of multiple-choice and short response questions.

To answer these questions, you will need to be able to draw chemical structures, to use systematic nomenclature, to solve synthetic schemes, to write chemical equations, and to write or apply reaction mechanisms.

### 6. Participation grade:

The participation grade is worth **100 points** and will be **10% of your final grade**. Each student will be assigned a personal response device ("clicker") to use this term. **Full credit will be given for responses to at least 75% of the questions asked during the course of the term.** Additionally, students who constantly participate in class discussions may receive extra credit for their final grade.

### 7. Online Homework:

Each student must purchase an access card for Sapling Learning Online Homework. **If you purchase it directly through the company site, the normal retail price should be ~\$24.99.** To purchase the access card:

- a. Go to <http://saplinglearning.com>
- b. Click on your country "US Higher Ed" at the top right.
- c. If you already have a Sapling Learning account, log in, and then skip to step d. Otherwise, click "Create an account". Supply the requested information and click "Create My Account". Check your email (and spam filter) for a message from Sapling Learning and click on the link provided in that email.

- d. Find your course in the list (you may need to expand the subject and term categories) and click the link.
- e. Select a payment option and follow the remaining instructions.

Once you have registered and enrolled, you can log in at any time to complete or review your homework assignments. **If you have any technical problems issues (during sign up and throughout the term), send an email to [support@saplinglearning.com](mailto:support@saplinglearning.com) explaining the issue.** The Sapling support team is almost always more able (and faster) to resolve issues than your instructor.

**The online homework will be activated on Mon, April 7<sup>th</sup>.**

The online homework is intended for practice. Consequently, you can make **as many attempts as you need** to get the answers right for each question (while also being guided through detailed feedback and hints). **The completion of the homework for the whole term is worth 10% of your final grade. There is no grading for individual assignments, but you must complete them before the indicated deadlines to receive full credit.**

### **8. Academic Honesty and/or Cheating:**

Students are held to the highest expectations and standards regarding honesty in all aspects of the course, including taking exams. Cases of cheating will be reported to the College of Arts and Sciences and to the University. **Students caught cheating will receive a failing (F) grade.**

## **GENERAL INFORMATION**

### **How Will You Learn Chemistry in This Course?**

The exact time of study needed to be successful in this course depends on your previous background and personal style of study. The assignments provided should prepare the “average” student to get the “average” grade. Higher grades require more practice.

Starting week 2, there is free tutoring (**no appointment necessary**) available for additional help in **Stratton 106. Tutoring hours will be announced during the first week of the term.**

### **Disability Services:**

Students with disabilities should see material under the following link:

<http://www.drexel.edu/oed/disabilityResources/Overview>

Students with disabilities who wish to request special accommodations at Drexel University must present a current accommodation verification letter (“AVL”) at least one week before the time at which accommodations will be made. These AVL's are issued by the Office of Disability Resources (“ODR”); <http://www.drexel.edu/oed/policies/forms>. Once submitted, the AVL letter is valid for all exams, including the final exam. Students with special accommodations will be e-mailed about their specific exam room and procedures. Accommodations will NOT be made if the AVL is first provided on the day of the exam.

## Course Schedule

Week	Component	Monday	Tuesday	Wednesday	Thursday	Friday
1	Date	3/31/2014		4/2/2014		4/4/2014
	Chapters	Basic notions review (Hybridization)		Basic notions review (Mechanisms & Nomenclature)		Basic notions review (Aromatic compounds) (16.1-16.2; 16.9; 16.13)
2	Date	4/7/2014		4/9/2014		4/11/2014
	Chapters	17.1-17.3		17.4-17.6		17.7-17.9
3	Date	4/14/2014		4/16/2014		4/18/2014
	Chapters	17.10-17.11		17.12-17.13		17.14-17.15
	Quiz			Quiz 1		
4	Date	4/21/2014		4/23/2014		4/25/2014
	Chapters	18.1-18.4		18.6-18.7; 18.9-18.11		18.12-18.13; 18.15
5	Date	4/28/2014		4/30/2014		5/2/2014
	Chapters	18.16-18.19		EXAM 1		18.20-18.21; 19.1-9.3
6	Date	5/5/2014		5/7/2014		5/9/2014
	Chapters	19.4-19.7		19.10-19.13		19.14-19.15; 19.17-19.18
7	Date	5/12/2014		5/14/2014		5/16/2014
	Chapters	19.19-19.21		20.1-20.3		20.4-20.6
	Quiz			Quiz 2		
8	Date	5/19/2014		5/21/2014		5/23/2014
	Chapters	20.8-20.9		20.10-20.15		21.1-21.3; 21.5
9	Date	5/26/2014		5/28/2014		5/30/2014
	Chapters	NO CLASS (Memorial Day)		EXAM 2		21.6-21.9
10	Date	6/2/2014		6/4/2014		6/6/2014
	Chapters	21.10-21.14		22.1-22.3		Review
11	Date	6/9/2014		6/11/2014		6/13/2014
		Final Exam				