

# Chemistry 412: Organic Chemistry 3      Fall 2009

## Section 010: HS 341, MWF 1-1:50 p.m.

**Instructor:** Dr. Miguel O. Mitchell (Miguel)      **Office hrs:** MTuWF 10-12 noon, Tu 4-5 pm  
**Office:** HS 334      **e-mail:** [momitchell@salisbury.edu](mailto:momitchell@salisbury.edu)  
**Phone:** 410-677-5064      **webpage:** [faculty.salisbury.edu/~momitchell](http://faculty.salisbury.edu/~momitchell)

**Required Text:** (1) *The Organic Chemistry of Drug Design and Drug Action*  
(2<sup>nd</sup> Edition, 2004) by R. B. Silverman  
(2) Online journal articles

**Purpose**      In this course you will study the principles of medicinal chemistry, including how drugs work, drug synthesis, rational drug design, quantitative structure-activity relationship (QSAR), 3-D molecular modeling methods for drug-receptor analysis, and drug metabolism.

### **Attendance Policy**

Students are expected to attend the lectures, and there will be daily in-class problem solving exercises to practice concepts covered in lecture. Attendance will be taken. Missing more than three classes will result in a subtraction of 5% from your final grade.

### **Dishonesty**

Dishonesty or cheating in this course will not be tolerated and could result in an F for the course.

### **Grading Policy**

Exams (2)	40% (Exam 1: 20%; Exam 2: 20%)
Quizzes (6)	30% (5% each)
Drug Synthesis	10% (5% each)
Problem Sets (2)	
Final	<u>20%</u>
	100%

### **Grade Scale**

A = 90-100%; B = 80-89%; C = 70-79%; D = 60-69%; F < 60%.

### **Exam Topic Review**

A practice exam will be posted a week before each exam, and in two lecture periods before an exam, there will be in-class exam topic review. During this exam review, how to solve the exercises on the practice exam will be considered in detail.

## Exams

All exams are CLOSED BOOK, will be given during the regular lecture period, and will cover the designated chapters and any additional internet-posted lecture notes.

**If you miss ONE exam for any reason, your final will be worth 40%.** Any other missed exam will simply receive a grade of 0, regardless of your reason for missing this additional exam(s).

**NOTE:** Using or checking cell phones during an exam, quiz, or the final will result in a grade of 0 for that exam, quiz, or final.

## Final

The final is CLOSED BOOK, 2.5 hrs long, and covers Ch. 2-5 and 7-8. There is NO makeup for the final.

## Homework

Homework is not collected, but you must do the homework in order to understand the course and to do well on the quizzes, the exams, and the final.

## Quizzes

Each quiz will be 15 minutes long and cover selected problems from the homework and/or a journal article posted online. The quiz problems will be *analogous* to these homework problems or require you to explain data or interpretations from a journal article..

## Drug Synthesis Problem Sets

In these problem sets, your task is to propose a synthetic route to medicinally significant targets. Both problem sets will be posted online. The due dates are given in the syllabus.

## Lecture Syllabus

<u>Week</u>	<u>Dates</u>	<u>Chapter Reading</u>	<u>Homework/In-Class Assignment</u>
1	8/31-9/4	Ch. 2: pp. 8-34 (Sec. 2.1-2.2.E.4)	Problems 1-7
2	9/9-9/11	Ch. 2: pp. 34-51 (Sec. 2.2.E.5-E.7)	Problems 8-12
3	9/14-9/18	Ch. 2: pp. 51-66, 75-86 (Sec. 2.2.F-I) Ligand-Receptor analysis and Drug Design (online)	Problems 13-21; drug design tutorial
	<b>9/16</b>		<b>Quiz 1 (Ch. 2, Problems 1-7)</b>

## Lecture Syllabus

<u>Week</u>	<u>Dates</u>	<u>Chapter Reading</u>	<u>Assigned Problems/In-Class Assignment</u>
4	9/21-9/25  <b>9/25</b>	Ch. 3: pp. 122-137 (Sec. 3.1-3.2.C)	Problems 1-5 Ligand-Receptor Binding <b>Quiz 2 (Ch. 2, Problems 13-21)</b>
5	9/28-10/2  <b>10/2</b>	Ch. 3: pp. 137-165 Journal article #1	Problems 6-10  <b>Quiz 3 (Ch. 3, Problems 1-5, Journal article #1)</b>
6	10/5-10/7 <b>10/9</b>	Ch. 2-3	Exam 1 Review <b>Exam 1 (Ch. 2-3)</b>
7	10/12-10/16	Ch. 4: pp. 174-200 Sec. 4.1-4.3.A	Problems 1-10
8	10/19-10/23  <b>10/23</b>	Ch. 4: pp. 200-216 Sec. 4.3.B-4.4	Problems 11-15  <b>Quiz 4 (Ch. 4, Problems 1-10)</b>
9	10/26-10/30  <b>10/30</b>	Ch. 5: pp. 229-262 Sec. 5.1-5.4.C	Problems 1-7  <b>Drug Synthesis PS#1 DUE</b>
10	11/2-11/6  <b>11/6</b>	Ch. 5: pp. 263-302 Sec. 5.4.D-5.5.C Journal article #2	Problems 8-14  <b>Quiz 5 (Ch. 5, Problems 1-7, Journal article #2)</b>
11	11/9-11/11 <b>11/13</b>	Ch. 4-5	Exam 2 Review <b>Exam 2 (Ch. 4-5)</b>
12	11/16-11/20	Ch. 7: pp. 406-408 Sec. 7.1 Ch. 7: pp. 418-448 Sec. 7.4.B-7.4.B.1	Problems 1-6
13	11/23  <b>11/23</b> <b>11/25-11/29</b>	Ch. 7: pp. 448-473 Sec. 7.4.B.2-7.4.D	Problems 7-14  <b>Quiz 6 (Ch. 7, Problems 1-6)</b> <b>Thanksgiving Break!</b>
14	11/30-12/4	Ch. 8	Problems 1-10
15	<b>12/7</b> 12/9-12/11	<b>Ch. 8</b>	<b>Drug Synthesis PS#2 DUE</b> Review for Final
16	<b>12/15</b> <b>(Tu, 10:45 am-1:15 pm, HS 341)</b>		<b>Final (Ch. 2-5, 7-8)</b>