

Chemistry 231

Spring 2005

Lec. 001, CRN# 11247; Lab 002, CRN# 11248
Lab 003, CRN # 11249

Instructor: Dr. M. Richards-Babb (Dr. Babb)
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Office: 404B Clark Hall

Office Hours: M (11:30 AM-12:30 PM), T (12:30-2:00 PM), and W (1:15-2:45 PM).
Other times by appointment.

Lecture: Section 001 (M, W, F - 10:30-11:20 AM) Clark Hall Room 208

Laboratory: Sec. 002 (M - 1:30-4:20 PM) (**Starting Monday, Jan. 10**)
Sec. 003 (T - 8:30-11:20AM) (**Starting Tuesday, Jan. 11**)
Clark Hall fourth floor lab rooms to be assigned at beginning of first lab period.

Textbooks: Organic Chemistry: A Short Course, 11th ed., Hart, Craine, and Hart.
Required of all students.

Study Guide and Solutions Manual to accompany Organic Chemistry: A Short Course, 11th ed. Strongly recommended.

Laboratory Manual for Organic Chemistry 231: A Brief Course, WVU Dept of Chemistry, 2005 (**will be passed out during lab check-in**).

Exams: Four exams, each worth 100 points, will be given in Clark 208 during the normal class meeting times. A comprehensive final exam worth 200 points will be given in Clark 208 according to the university schedule and based on class meeting time.

| <u>Date</u> | <u>Exam</u> |
|-----------------|-------------------------------------|
| Week of Jan. 24 | Quiz #1 (given at beginning of lab) |
| Wed., Feb. 2 | Exam #1 |
| Week of Feb. 14 | Quiz #2 |
| Wed., Feb. 23 | Exam #2 |
| Week of Mar. 7 | Quiz #3 |
| Wed., March 23 | Exam #3 |
| Week of Apr. 4 | Quiz #4 |
| Wed., April 13 | Exam #4 |
| Mon., Apr. 25 | Lab Final Exam Sec. 002 (In Lab) |
| Tue., Apr. 26 | Lab Final Exam Sec. 003 (In Lab) |
| Mon., May 2 | Final Exam (11 AM-1 PM) |

Quizzes: Four quizzes, each worth 10 points, will be given at the beginning of lab periods as specified above. Quizzes will pertain to lecture material corresponding to the laboratory. A student arriving late to the lab may be excluded from taking the quiz and lab.

Make-ups: Make-up exams and quizzes will only be given in the case of serious illness or emergency. A request for a make-up must be accompanied by a written excuse from the Dean of Student Life (E. Moore Hall, 293-5611). If you will be out of town on university business, you must submit documentation ***before*** your trip. All requests for make-up exams and quizzes must be arranged within one week of the scheduled date.

Exam/Quiz Regrading: If you believe an error has been made in grading an exam or quiz, you must give the ***unaltered*** exam or quiz to the instructor ***within 24 hours*** from the time it was returned. If you request re-grading of a specific question, not only that question but the entire exam will be re-graded by the instructor. As a result, your score could decrease, remain the same, or increase.

Calculation of Grade: The object is to give you the best possible grade which can be justified by your achievement in the course. Your course grade will be determined on the basis of 800 possible points, which will be distributed as shown below.

| <u>Item</u> | <u>Points</u> |
|--------------------|----------------------|
| Hourly Exams (4) | 400 |
| Lab Reports/Exp | 110 |
| Quizzes (4) | 40 |
| Lab Final Exam | 50 |
| Final Exam | 200 |

Problems and Questions: At the end of each chapter in the text are numerous questions and problems. Specific problems relating to the material covered in lecture will be assigned from each chapter. Although the problem assignments will not be collected and graded, they should help you understand the various concepts in lecture and thereby ***prepare you for the examinations***. Answers to all of these problems can be found in the solutions manual.

West Virginia University is committed to social justice. I concur with that commitment and expect to foster a nurturing learning environment based upon open communication, mutual respect, and non-discrimination. Our University does not discriminate on the basis of race, sex, age, disability, veteran status, religion, sexual orientation, color or national origin. Any suggestions as to how to further such a positive and open environment in this class will be appreciated and given serious consideration.

If you are a person with a disability and anticipate needing any type of accommodation in order to participate in this class, please advise me and make appropriate arrangements with Disability Services (293-6700).

West Virginia University recognizes the diversity of its students, many of whom must be absent from class to participate in religious observances. Students must notify their instructors by the end of the third class meeting regarding religious observances that will affect attendance. Further, students must abide by the attendance policy of their instructors as stated on their syllabi. Faculty will make reasonable accommodation for tests or field trips that a student misses as a result of religious observance.

Chemistry 231
Tentative Lecture Syllabus

Spring 2005

Instructor: Dr. M. Richards-Babb (Dr. Babb)-Office Room 404B Clark Hall
Text: Organic Chemistry: A Short Course, 11th ed., Hart, Craine, and Hart.

| <u>Day of</u> | <u>Text Chapter</u> <u>Coverage</u> |
|---------------|---|
| Jan. 10 | Chapter 1 |
| Jan. 12 | Chapter 1 |
| Jan. 14 | Chapter 2 |
| Jan. 17 | No Class |
| Jan. 19 | Chapter 2 |
| Jan. 21 | Chapter 2 |
| Jan. 24 | Chapter 2 |
| Jan. 26 | Chapter 3 |
| Jan. 28 | Chapter 3 |
| Jan. 31 | Chapter 3 |
| Feb. 2 | Exam #1 |
| Feb. 4 | Chapter 4 |
| Feb. 7 | Chapter 4 |
| Feb. 9 | Chapter 4 |
| Feb. 11 | Chapter 5 |
| Feb. 14 | Chapter 5 |
| Feb. 16 | Chapter 5 |
| Feb. 18 | Chapter 6 |
| Feb. 21 | Chapter 6 |
| Feb. 23 | Exam #2 |
| Feb. 25 | Chapter 6 |
| Feb. 28 | Chapter 7 |
| Mar. 2 | Chapter 7 |
| Mar. 4 | Chapter 7 |
| Mar. 7 | Chapter 8 |
| Mar. 9 | Chapter 8 |
| Mar. 11 | Chapter 9 |
| Mar. 21 | Chapter 9 |
| Mar. 23 | Exam #3 |
| Mar. 25 | No Class |
| Mar. 28 | Chapter 9 |
| Mar. 30 | Chapter 9 |
| Apr. 1 | Chapter 10 |
| Apr. 4 | Chapter 10 |
| Apr. 6 | Chapter 10 |
| Apr. 8 | Chapter 10 |
| Apr. 11 | Chapter 15 |
| Apr. 13 | Exam #4 |
| Apr. 15 | Chapter 15 |
| Apr. 18 | Chapter 14 |
| Apr. 20 | Chapter 14 |
| Apr. 22 | Chapter 12 |
| Apr. 25 | Chapter 12 |
| Apr. 27 | Chapter 16 |
| Apr. 29 | Review |
| May 2 | Final Exam (11:00 AM-1:00 PM; Clark 208) |

CHEMISTRY 231 LABORATORY
Organic Chemistry - Brief Course
Spring 2005

Laboratory Schedule

| <u><i>Week of</i></u> | <u><i>Experiment</i></u> | <u><i>Pages</i></u> |
|-----------------------|--|---------------------|
| Jan. 10 | Check-in, Safety Procedures and Laboratory Rules | 4-12 |
| Jan. 17 | NO LABORATORY: Martin Luther King Jr's Birthday Recess | |
| Jan. 24 | Melting Points, QUIZ #1 | 13-18 |
| Jan. 31 | Re-crystallization | 19-26 |
| Feb. 7 | Isolation of Natural Products: Caffeine | 27-33 |
| Feb. 14 | Isolation of Natural Products: Ethanol, QUIZ #2 | 34-39 |
| Feb. 21 | Molecular Models | 54-57 |
| Feb. 28 | Chromatography | 40-53 |
| Mar. 7 | Oxidative Coupling of Phenols, QUIZ #3 | 58-61 |
| Mar. 14 | NO LABORATORY: Spring Break | |
| Mar. 21 | Aspirin Synthesis | 62-64 |
| Mar. 28 | Dilantin Synthesis | 65-68 |
| Apr. 4 | Dilantin Synthesis (cont.), QUIZ #4 | 65-68 |
| Apr. 11 | Soaps | 69-74 |
| Apr. 18 | Polymers | 75-78 |
| Apr. 25 | Lab Final Exam & Check-out | |

Chemistry 231 Laboratory

Laboratory Fee: There is a laboratory fee of \$60 payable with your tuition. The laboratory fee is not refundable after the first week of classes. A charge for excessive breakage may also be levied. **IF YOU DROP THE COURSE, YOU MUST CHECK-OUT OF YOUR LABORATORY DESK.**

Laboratory Conduct: There is no smoking in the building. Each student is to do his/her own work in a quiet, efficient manner. The work area is to be kept clean and orderly. At the end of the laboratory period, the work area/sink should be clean and equipment should be returned to the appropriate place. The gas jets should be checked to ensure that they have been turned off. The student should inspect the desk area to ensure that no apparatus has been left out.

Laboratory Safety: Read the safety regulations carefully and adhere to them rigorously at all times for your own well-being and that of your fellow students. **YOU MUST WEAR SAFETY GOGGLES (NOT SUNGLASSES OR CONTACTS) WHENEVER YOU ARE IN THE LABORATORY.** **Covered shoes (not sandals or open toe/heel shoes) are to be worn at all times in the laboratory. Long pants or long skirts are to be worn instead of shorts.** Portable radios, walkman, etc. are prohibited in the laboratory. **NO FOOD OR DRINK IS PERMITTED IN THE LABORATORY.** *Failure to follow any safety regulations will result in dismissal from the lab and a zero for that day.*

Laboratory Absences: Students must attend all laboratory sessions. Students absent because of severe illness or university business must see the instructor before or as soon as possible after the laboratory absence. For Chem 231, there is no scheduled make-up laboratory AND, also, the lowest laboratory grade is not dropped.

Preliminary Work: Before coming to the laboratory, you should read through the experiment carefully. Make a list of all precautions to be observed and plan the best way to do the experiment beforehand.

Desk Locks: You will be given a combination lock for your desk. You are responsible for the equipment in your desk. It is your responsibility to open and lock your own desk.

Report Sheets: Check any calculations carefully before you hand in your report sheet. These report sheets should be handed in at the end of the lab period. If you have not completed the experiment, notify your teaching assistant.