CHEM 252 ORGANIC CHEMISTRY II

Winter, 2011-12 Room: O-203-1 **M, T, R 4th hour**

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TEXTBOOKS:
1) Loudon, *Organic Chemistry*, 5th edition, 2009
2) Sapling Learning account for homework
3) *Spartan 10*
4) You should have a model kit or check one out from the library. You may use a kit on exams and quizzes.

EXAMS: The course will have three mid-term exams, which may be comprised of an in-class part and a take-home part, and a comprehensive final exam. Missed exams require an Institute Official Notice (from the student affairs office) or a signed diagnosis from a physician to allow scheduling of a make-up exam.

HOMEWORK: There will be frequent homework assignments, and occasional graded **unannounced** in-class assignments. Most homework will be submitted via the Sapling Learning system. Homework will ***not*** be accepted late, and it is unlikely to be possible to make up missed in-class assignments. Penalty for late laboratory reports is 10% per day, with late reports being subject to delays in being graded and returned.

Grade Breakdown:

3 Exams (100 points each)	300
Final (200 points)	200
Problem Sets/Quizzes	200
Participation	50
Laboratory	250
Total Points	1000

The laboratory and lecture courses must both be passed independently in order to receive a passing grade for the overall course.

COMMENTS AND POLICIES: You will find your life much easier if you read the material in the textbook prior to class. To assist you with this, I have included the sections from the textbook we should be covering on the tentative schedule. You should be prepared to answer questions on the reading; class participation is a part of your overall grade. Attendance is required: you are expected to be present for all class sessions and all laboratory sessions from the beginning of class!

Organic chemistry is highly integrated, and many of the concepts covered in one class will be used extensively in subsequent classes. If you fall behind, you will find it extremely difficult to catch up. Studying for the exams should be an ongoing process; if you study only in the week before the exam, you are unlikely to do well. One additional advantage inherent in keeping up is that you will know what it is you do not understand; this allows you to ask questions in class (which everyone will find useful).

The problem sets are designed to help you stay caught up with the material. Working together on these problem sets is encouraged; remember, however, that each individual is responsible for turning in their own work. If you allow your classmates to do your work for you, you will find yourself at a severe disadvantage on the exams. This means that you should understand the answers you write on your problem sets, and not merely copy the answers from your friends or other sources. ***Note also that submission of the work of others without proper attribution constitutes plagiarism and as such is a form of Academic Misconduct subject to grade penalties and possibly additional action***.

CHEM 252 TENTATIVE CLASS SCHEDULE

Date		Topic	Chapter
Nov.	28	Alcohols and Thiols	8.1-8.5
	29	Infrared Spectroscopy	12
Dec.	1	Infrared Spectroscopy	
	5	Mass Spectrometry	12
	6	Nuclear Magnetic Resonance	13
	8	Nuclear Magnetic Resonance	
	12	Nuclear Magnetic Resonance	
	13	Structure Determination	
	15	Structure Determination	
	19	Structure Determination	
Dec.	**20**	**Exam I (Chapters 8, 12, & 13)**	
		Winter Break December 21 – January 3 (No class)	
Jan.	5	Acid-base Reactions of Alcohols and Grignard reagents	8
	9	Alcohols and Thiols	10
	10	Alcohols and Thiols	
	12	Alcohols and Thiols	
	16	Ethers and Epoxides	11
	17	Ethers and Epoxides	
	19	Ethers and Epoxides	
	23	**Exam II (Chapters 8, 10 & 11)**	
	24	Alkynes	14
	26	Alkynes	
	30	Conjugated Compounds	15
	31	Aromatic Compounds	16
Feb.	2	Aromatic Compounds	
	6	Aromatic Compounds	
	7	Aromatic Compounds	17
	9	**Exam III (Chapters 14, 15, & 16)**	
	13	Allylic and Benzylic Compounds	
	14	Aryl Halides	18.1-18.4
	16	Review	
TBA		**Final Exam (Chapters 8 & 10 through 18)**	

Laboratory Schedule

Week	Topic
1	Check-in and Resin-Based Oxidation Chemistry
2	Gas-Phase Synthesis of Tetraphenylporphyrin
3	Column Chromatography and Visible Spectroscopy of Tetraphenylporphyrin
4	***No lab***
5	Metallation of Tetraphenylporphyrin
6	Spartan: Conjugated Systems (***please bring laptop to lab***)
7	Electrophilic Aromatic Substitution: Iodination of Vanillin, Part I
8	Electrophilic Aromatic Substitution: Iodination of Vanillin, Part II
9	Laboratory Practicum
10	Laboratory Practicum, Check-out, and Course Evaluations

SAPLING LEARNING: ORGANIC CHEMISTRY QUESTION SETS

Sapling's chemistry questions are delivered in a web browser to provide real-time grading, response-specific coaching, improvement of problem-solving skills, and detailed answer explanations. Dynamic answer modules enable one to interact with 3D models and figures, utilize drag-and-drop synthetic routes, and draw chemical structures - including stereochemistry and curved arrows. Altogether, Sapling is cheaper than a tutor, provides more value than a solutions manual, and goes beyond a mere assessment exercise to give a learning experience.

Students, we will be using **Sapling Learning** for many of the homework assignments. To get started:

1. Go to **http://saplinglearning.com**

2. If you already have a Sapling Learning account, log in, click "**View Available Courses**", then skip to step 5.

3. If you have a Facebook account, you can use it to quickly create a SaplingLearning account. Click "**create account**" located under the username box, then click "**Login with Facebook**". The form will auto-fill with information from your Facebook account (you may need to log into Facebook in the popup window first). Choose a password and timezone, accept the site policy agreement, and click "**Create my new account**". You can then skip to step 5.

4. Otherwise, click "**create account**" located under the username box. Supply the requested information and click "**Create my new account**". Check your email (and spam filter) for a message from Sapling Learning and click on the link provided in that email.

5. Find your course in the list (listed by school, course, and instructor) and click the link.

6. Use the following **Enrollment Key** to access the course (case sensitive): **BMhhf234**

7. Once you have registered and enrolled, you can log in at any time to complete or review your homework assignments.

8. During sign up, and throughout the term, if you have any technical problems or grading issues, send an email to **support@saplinglearning.com** explaining the issue. The Sapling support team is almost always more able (and faster) to resolve issues than your instructor.

CHEMISTRY 252L ORGANIC CHEMISTRY II LABORATORY

You must pass both the laboratory and lecture sections in order to pass the class.

PROPER ATTIRE: Safety goggles can be purchased with your textbook in the school bookstore. Bring your safety goggle or the voucher to the first lab session to receive your goggles. You ***must*** have safety goggles to participate in laboratory. ***You may not start lab*** without appropriate "personal protective equipment" which includes: **pants, shirt that covers your shoulders and abdomen, shoes that cover your entire foot (heel to toe), and safety goggles**. Protective gloves will be available free of charge to students.
Bound notebooks can be purchased in the school bookstore. If you are unsure about which notebook to purchase, be sure to ask!

PARTICIPATION, ATTITUDE AND SAFETY IN THE LABORATORY: All safety rules must be followed at all times. ***Failure to comply will result in immediate expulsion from the lab***. In some cases, a grade penalty may be accrued for failure to follow safety rules. Specific safety issues will be addressed in detail the day of lab. ***Be sure you are aware of hazardous waste disposal before you begin your experiment***. **All accidents and injuries, no matter how minor, must be immediately reported to the instructor**.

Cleanliness and safe practices are required in the lab. Ask your instructor if you are unsure about how to do something or if you do not understand the reason for a procedure. Think about the chemistry that is happening in each step of an experiment. Anticipate outcomes with special attention to safety issues. Be aware of what is happening around you. ***Thorough and efficient operation in the lab and reading and thinking through the lab procedure before coming to lab is expected professional behavior***.

Arriving late to lab means that you may have missed some vital procedural and safety information. Depending on how late you are, you may be asked to leave the laboratory.

LABORATORY NOTEBOOKS: Learning to keep an accurate and detailed record of results is extremely important to all engineers and scientists. ***Your notebook is a permanent record of your experiments and your data***. Notebook entries should be written clearly, concisely, and neatly. The following guidelines for recording entries in your lab notebook will be graded for competency when lab notebook entries are due:

a) You must use a **bound notebook** (composition notebooks are most practical; you may use your notebook from a previous course). ***Do not tear out any pages of your notebook*.** The purpose of having a notebook is so that your records represent a ***complete*** log of your work.
b) The first several pages of a notebook should be reserved for a ***table of contents*.**
c) All entries in your notebook should be made in ***ink*.** Any mistakes should be crossed out with a single horizontal line and initialed**.** ***Do not use whiteout*.**
d) Each page should be numbered sequentially in the upper outside corner.

e) ***Each experiment should start on a new page***. Your entry should include your name and your title, the date, a title for the experiment, and a reference for the procedure.
f) Any data or notes written on separate pieces of paper should be transferred to your notebook as soon as possible.
g) Sign each entry after you have completed the experiment. This signifies that the data reported came from the person responsible for the notebook**.**
h) *Have your instructor initial your lab entry before leaving the lab.*

LABORATORY REPORTS: Laboratory reports/assignments/write-ups will be discussed on the day of lab and a due date will follow the assignment (usually the following lab period, *i.e*. one week).

As with all assignments, *copying the work of another without proper attribution is a form of Academic Misconduct. All matters of academic misconduct will be handled according to the Rules & Discipline section of the Rose-Hulman Student Handbook.*

Reports should be submitted by placing them in the trays provided in the laboratory. Reports should be submitted on time; late reports will be subject to a 10% late penalty per day late, and it is likely that the feedback on your performance (grading) will be delayed as well.

You must pass both laboratory and lecture in order to pass the course.

ATTENDANCE POLICY: Attendance in all laboratory sessions and pre-laboratory sessions is required. If you need to miss a laboratory session, notify your instructor as soon as possible (**preferably before the absence**). Making up a missed laboratory session may not be possible, and ***is unlikely to be granted if your instructor is not informed before you miss the session***.

DISABILITY ACCOMMODATION: If you require disability accommodations, contact The Learning Center (contact by phone: (812) 877-8876, Campus mail: CM 82, and Email: learningcenter@rose-hulman.edu) to make initial arrangements and then contact the instructor.