CHE 231-002
ORGANIC CHEMISTRY LABORATORY I
Spring 2005

SYLLABUS

This class meets from 8:00 AM - 10:50 AM each Tuesday and Thursday. On days when a pre-lab lecture or a quiz is scheduled, you should come to room 320 at 8:00 AM. On these days, lab work will start (in room 336 or 340) immediately following the lecture or the quiz. The days when there is no lecture or quiz, you should go to the lab (Room 336 or 340) at 8:00 AM directly. Regular attendance and being present on time for lectures, quizzes and lab work is mandatory.

Each section will have its own teaching assistant. The faculty supervisor for this course is Dr. M. D. Watson. His office is room 318 (phone: 257-4529; e-mail: mdwatson@uky.edu). He can be reached by scheduling an appointment. The laboratory supervisor for all sections is Dr. M. A. Patwardhan. Her office is room 327 (phone: 257-3659; e-mail: mapatw00@uky.edu). She can be reached in that vicinity Mondays and Wednesdays from noon to 3:00 PM, and Tuesdays, Thursdays from 8:00 AM to 3:00 PM, or you may schedule an appointment.

The required textbook is Microscale Organic Laboratory, 4th Edition, by Mayo, Pike and Trumper. You must also purchase the required (Hayden-McNeil) student laboratory notebook.

GRADING

Your final numerical grade will be calculated based on the following:

Pre-lab write-ups (Exp. 1-12)	24%
Experimental results (Exp. 1-12)	12%
Laboratory reports (Exp. 1-12)	24%
Quizzes (best 3 out of 4)	30%
Final exam (1)	10%

Letter grades will be assigned using the following scale:

A	90-100%
B	80-89%
C	70-79%
D	60-69%
E	$\leq$ 59%

SAFETY AND RESPONSIBILITY

Failure to observe safety rules (see Laboratory Safety handout) and / or failing to behave in a safe and responsible manner may result in a failing grade and permanent dismissal from the course.

CHEATING AND PLAGIARISM

The Department of Chemistry considers cheating a very serious offense. The minimum penalty for cheating or plagiarism is the assignment of a grade of E for the course, in accord with University Senate Rules. Attempts to claim another person's work as your own, in any form or under any guise, is forbidden. All the work that you do for this course, must be your own only. This includes, prelab and post lab write-ups, data, compounds that you synthesize, spectra, results, laboratory notebooks, quizzes, exams, etc. Falsifying laboratory data or 'dry labbing', making up data is cheating.

Removing laboratory chemicals, reagents or any other items from the laboratory is forbidden. Such behavior may result in a failing grade and permanent dismissal from the course.

LABORATORY NOTEBOOK, DUE DATES AND MAKE-UP POLICY

You must be present in the lab, on time. On the days, when a prelab lecture or a quiz is scheduled, lab work will start immediately following the lecture or the quiz. On all other days it will start at 8:00 AM. Unexcused tardiness will not be accepted.

Pre-lab write-ups: The procedure for every experiment must be written in the duplicating laboratory notebook *before* the start of every experiment, except for the first experiment – see schedule. This should be a complete, accurate procedure, written in such a way that by following this procedure, a person with similar ability should be able to perform the experiment. Any modifications suggested to the procedure during lecture, must be included in this write-up. Your notebook must be given to your teaching assistant to inspect and initial. The duplicate (copy) sheets of the written procedure must be turned in to the teaching assistant as soon as you enter the lab, before the start of every experiment. Any changes made in that procedure while performing the actual experiment, should be noted and turned in later as a part of the laboratory report. The pre-lab questions along with answers must also be turned in to your teaching assistant as soon as you enter the lab, before the start of every experiment. Failure to turn in pre-lab procedure and questions as soon as you enter the lab, before the start of every experiment, will result in a minimum penalty of 5 points each.

During each laboratory period, all the data and comments must be entered in your notebook and your duplicate (copy) sheets must be turned in before you leave. All your other data such as IR spectra, GC printouts etc. must have your name and date when you recorded it. Before you leave, you must have your TA sign and date it. There will be a penalty for failure to do so. For the details about the departmental laboratory notebook policy, refer to:

http://www.chem.uky.edu/courses/common/notebook.html

All the lab reports, experimental results (except for the first two, which are due two weeks after the experiments are done) are due a week after the experiment is done. These lab reports and experimental results must be turned in to your teaching assistant at the beginning of the lab day. Please ask your teaching assistant for the exact due dates and the details of how to write experimental results and laboratory reports. The teaching assistant for your section will

grade all your work, including quizzes and final exam. There will be a significant penalty for turning in late assignments.

If you have any questions regarding grading of any assignment, you must contact your Teaching Assistant or Dr. Patwardhan within one week of the date on which the assignment was returned. We reserve the right to regrade the whole assignment. Any assignments returned for regrading after more than one week from the day the assignment was returned will not be considered for regrading.

If you must miss a class, or be late, with an excused absence, notify your teaching assistant and Dr. Patwardhan in advance, or if this is impossible, as soon after the absence as you can but no later than one week after the absence. You may make up laboratory work missed for a documented excused absence (that conforms to the University Senate Rules) during make-up lab days. Please notify your teaching assistant in writing at least one week in advance of the make-up lab, of the experiment(s) you need to make up. If an experiment is missed without an excused absence, a '0' will be recorded as the grade for the experimental results and the laboratory report. There will be a significant penalty for unexcused tardiness.

Students who miss scheduled quizzes for an excused absence, please contact Dr. Patwardhan as soon as possible. Students with an excused absence who can not take the missed quiz within one week of the original quiz time, will have their other quizzes count proportionately more.

On the days when quizzes are scheduled, you must be in the classroom by 8:00 AM. You must take assigned seats based on the seating chart. You must not leave the classroom until 8:10 AM, even if you finish the quiz. You will not be allowed to take the quiz if you arrive after 8:10 AM.

If a quiz is missed without an excused absence, a '0' will be recorded as the grade for that quiz. The manual *Student Rights and Responsibility* describes what are excused absences.

QUIZ COVERAGE

Quiz	Experiments
Quiz 1	1, 2, 3
Quiz 2	4, 5, 6
Quiz 3	7, 8, 9
Quiz 4	10, 11
Final exam	Comprehensive

NOTE: You may bring a calculator to all quizzes and exams. You will not be allowed to borrow one during a quiz or an exam. You will not be allowed to use other devices such as cellular phones, personal digital assistants, etc.

CHE 231-002
MICROSCALE ORGANIC LABORATORY
SPRING 2005

SCHEDULE

DATES	PRE-LAB	READING	EXPERIMENTS	
			Subsections A	**Subsections B**
Jan. 13	Introduction, Laboratory safety	Handout	Check-in	Check-in
18	1. Recrystallization of an unknown	pp. 1-32, pp. 40-43, Handout, pp. 71-77, pp. 532-553	Recrystallization	Recrystallization
20	2. Solvent extraction [4C]	pp. 55-70, pp. 129-132	Recrystallization (pre-lab due)	Recrystallization (pre-lab due)
25			Solvent extraction (pre-lab due)	Recrystallization
27	3. Fractional distillation [3B]	pp. 44-54, pp. 115-117	Solvent extraction	Solvent extraction (pre-lab due)
Feb. 1	4. Reduction of cyclohexanone [5A]	pp. 133-138	Recrystallization	Solvent extraction
3			Distillation (pre-lab due)	Reduction (pre-lab due)
8	5. Thin layer chromatography of unknown	Handout, pp. 82-84	Distillation	Distillation (pre-lab due)
10	6. Williamson synthesis [22A]	pp. 290-294	Reduction (pre-lab due)	Distillation
15	**Quiz 1**	**Expt. 1, 2, 3**	Make-up lab	Make-up lab
17			TLC (pre-lab due)	Williamson (pre-lab due)
22	7. Acetyl ferrocene [27]	pp. 324-329, pp. 77- 80	TLC	Williamson
Feb. 24			Williamson (pre-lab due)	TLC (pre-lab due)
March 1	8. Grignard reaction [16]	pp. 246-252	Williamson	TLC
3	**Quiz 2**	**Expt. 4, 5, 6**	Acetyl ferrocene (pre-lab due)	Grignard (pre-lab due)
8			Acetyl ferrocene	Grignard

DATES	PRE-LAB	READING	EXPERIMENTS	
			Subsections A	**Subsections B**
10			Make-up	Make-up
22	9. Benzoin condensation [$A1_a$]	pp. 426-430	Grignard (pre-lab due)	Acetyl ferrocene (pre-lab due)
24			Grignard	Acetyl ferrocene
29	10. Benzil [$A2_a$]	pp. 431-434	Benzoin (pre-lab due)	Benzoin (pre-lab due)
31	11. Hexaphenylbenzene multistep synthesis [$A3_a$], [$A2_b$]	pp. 419-426, pp. 435-438, pp. 441-452	Benzoin	Benzoin
Apr. 5	11. Hexaphenylbenzene multistep synthesis continued [$A3_b$], [$A4_{ab}$]		Benzil (pre-lab due)	Benzil (pre-lab due)
7	**Quiz 3**	**Expt. 7, 8, 9**	Benzil	Benzil
12			Hexaphenylbenzene Step 1: Tetraphenylcyclopentadienone (pre-lab due)	
14			Step 2:Meso-stilbene dibromide	
19	12. Luminol	Handout	Step 3: Diphenyl acetylene	
21	**Quiz 4**	**Expt. 10, 11**	Step 4: Hexaphenylbenzene	
26			Luminol (pre-lab due)	Luminol (pre-lab due)
28	Review for the Final Exam Attendance is required. No lab reports accepted after this date.		Check-out (required)	Check-out (required)
May 5, 8:30-9:30 PM	**Common Final Exam* (Room To Be Announced on April 28)**			

***Please note the final will be 1 hour, not 2 hours.**