ORGANIC CHEMISTRY LAB SCHEDULE
CHMO-336

Text: Christina Goudreau Collison, Jeremy Cody, Jason Anderson, and Brian Edelbach, REActivities Organic Chemistry Lab (ISBN: 978-1-59399-642-0)

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LAB OBJECTIVE: This lab course aims to accomplish the following objectives with respect to your chemistry education and experience:

- train you to keep a professional lab notebook
- train you in standard lab safety protocols
- build your confidence in running lab techniques
- build your confidence in the analysis and assessment of your experimental results
- hone your troubleshooting skills

ATTENDANCE POLICY: Students are required to attend each lab session. Any lab not completed will have to be made up during the allowed make-up period; otherwise you will receive a zero for that report. Any student who misses more than one lab in either half of the semester will receive a zero for any additional labs.

NOTE: Everyone must complete an individual proof for each lab.

LABORATORY NOTEBOOKS AND PROOFS: Each student must have a lab notebook. The notebook may be one with carbonless copy-through pages or a bound composition notebook. If a non-carbon copy notebook is used, a copy of your notebook pages will need to be turned in as their proof. All entries must be in ink. Please format your notebook in the following way:

FINAL LAB REPORT DUE DATES: Your final lab proof is due in lab one week after the experiment has been completed. Proofs will NOT be accepted after the due date without a documented excuse. The only exception to this is make-up labs. Completed lab proofs should be turned in at the beginning of the following week's lab.

GRADES: Each completed proof and the practical will count equally toward your final grade. Missing proofs will count as a zero. At the end of the semester, final grades will be assigned based on the following scale:

A	> 93	A-	90 – 92		
B+	87 – 89	B	84 – 86	B-	80 – 83
C+	77 – 79	C	74 – 76	C-	70 – 73
D	60 – 69	F	below 60		

This scale may be adjusted (to the benefit of the student) at the end of the term.

PROOF RUBRIC

I. Workbook (5 PTS)

II. Lab Proof Notebook Set-up

A. **TITLE OF EXPERIMENT/TECHNIQUE (1 PT)**

B. **DATE (1 PT)** – mm/dd/yy

C. **REACTION SCHEME (5 PTS)**

D. **REAGENT TABLE (8 PTS)**

E. **PROCEDURE/OBSERVASTIONS (10 PTS)**

- Written DESCRIPTIVELY in 3rd person, PAST-TENSE! The procedure should be written up as you do the experiment. Write the procedure in such a way that if your friend needed to do the lab and didn't have their text, he/she could use your procedure and do the experiment with little help from the instructor.

F. **DATA (8 PTS)** - yield, % yield, drawings, graphs, observations, melting points, R_f values, boiling points, etc.

G. **CONCLUSIONs/ANALYSIS (8 PTS)** - Guidelines on how to write your conclusions are provided each week. Some good things to think about when doing each experiment are:

1. What was the purpose of your experiment?
2. Were you successful? How do you know?
3. Briefly describe your experiment (summarize procedure), put the 'mechanism to words'. Include all purification methods (extraction, recrystallization, etc.) citing any solvents used.
4. Summarize your yield and mp/bp, comparing actual to theoretical.
    a. Describe the expected product: solid, liquid?? Color? Appearance?
5. List and explain all sources of error.
6. How did you identify your product? *Include references for all literature values*.
    a. If mp, compare to literature value.
    b. If tlc, diagram tlc plates; calculate R_f for all peaks; identify your product and any impurities or starting materials and report solvent.
7. Add any additional comments to verify that your experiment has been successful.

H. **QUESTIONS (variable)**

ACADEMIC HONESTY: It is expected that each student will individually write a lab report for all of the 6 labs. You are welcome to work on analyzing your data together, but everybody must write their own reports. Any plagiarism found in a report will result in a grade of zero for that report. You must physically perform each experiment and write a report for each experiment in order to receive a passing grade for this course (this means you cannot hand in lab reports for experiments you did not perform this semester). Handing in a lab report for an experiment you did not perform will result in an automatic zero for that report and referral to Dr. Heagy for further disciplinary action.

LAB RULES:

- Every student MUST have a bound lab notebook. Notebooks with carbon paper between pages are best.
- Every student MUST be on time. Extra time will NOT be taken to explain something to a student that has come in late. Tardiness will be noted.
- Every student MUST sign the sign-in sheet themselves.
- Late lab reports WILL be penalized.
- Labs start ON TIME and will NOT run over.
- Pre-Labs MUST be handed in before lab instruction begins. They will NOT be accepted after lab instruction has begun.

Experiment Schedule

Week	Week of	Module	**Experiment Description** (manual reference, reading assignment)	Due Date Week
1	8/22	1	Check In / Troubleshooting a Reaction	8/29
2	8/29	2	TEMPO	9/19
3	*9/5*		*Labor Day Monday – No labs*	
4	9/12		TEMPO Column	
5	9/19	3	Saponification	9/26
6	9/26	Soyle 1	Soyle – Unknowns #1	Pre-lim: 10/10 Final: 10/17
7	10/3			
8	10/10			
9	10/17	Soyle 2	Soyle – Unknowns #2	Pre-lim: 10/31 Final: 11/7
10	10/24			
11	10/31			
12	11/7	Soyle 3	Soyle – Unknowns #3	Pre-lim: 11/28 Final: 12/5
13	11/14			
14	11/21		*Thanksgiving Break – No labs*	
15	11/28		Soyle – Unknowns #3	

GRADING:

TOTAL # of PROOFS = 3 x ~50 points = 150

TOTAL # of REPORTS = 3 x 100 points = 300

Approx. TOTAL POINTS = 450 points

SAFETY:

The following are some general safety tips to adhere to / keep in mind in lab:

- **Safety goggles must be worn at all times while in lab** - THE CHEMISTRY DEPATMENT STOCKROOM DOES NOT LOAN OUT SAFETY GOGGLES.
- **Lab coats must be worn at all times while in lab**- THE CHEMISTRY DEPARTMENT STOCKROOM DOES NOT LOAN OUT LAB COATS.
- **No shorts, open toed shoes (flip flops), and exposed mid-rifts are allowed in lab.** If you come unprepared, you will not be allowed to do the lab.
- **No food or drink in the lab.**
- **No chemicals are to be poured down the drains.** Please follow the chemical disposal instructions outlined in each lab. If you are unsure of how to dispose of something, ASK.
- **No Cell phones.** Cell phones are a distraction when dealing with chemicals and could result in injury to yourself or those around you.
- **Gloves must be worn at all times during an experiment**.
- **Gloves must be removed before exiting the lab**. For example, you should never use door knobs with gloves on or you will contaminate the door knob. Take your gloves off when you leave the room and put on a new pair when you return.
- Any long hair or loose clothing must be tied back prior to lab.
- If you wear contact lenses, you are advised to remove them before lab and wear glasses.
- Keep a clean workspace and be sure to clean up before you leave.
- Report all accidents in the lab (spills, burns, cuts, scrapes etc) even if you think they are minor
- Wash your hands before leaving the lab.
- All book bags and coats are stored must be stored in the corner of the lab.
- No running or horseplay in the lab.