UNIVERSITY OF ARKANSAS AT MONTICELLO  
School of Mathematics and Natural Sciences  
Syllabus ORGANIC CHEMISTRY I LAB CHEM 3404-52  
FALL 2014 H 1:40-4:30 SC C-26

INSTRUCTOR:  Dr. M. Jeffrey Taylor  
OFFICE:  SC-C-22  
PHONE:  (870)-460-1766 (leave a voice mail)  
E-MAIL:  taylorj@uamont.edu  [use your official UAM campus email!]  
OFFICE HOURS:  9:10-10:00 & 1:10-2:00 MWF; 8:40-9:30 & 12:40-1:30 TuTh.

COURSE TITLE:  (CHEM 3404-51) ORGANIC CHEMISTRY I LABORATORY;  
1 credit hour of lab consolidated with 3 credit hours of lecture.

DESCRIPTION:  A study of carbon compounds, including an introduction to organic 
nomenclature, reactions, reaction mechanisms, organic synthesis, and structural and 
stereochemical problems.

PREREQUISITES:  CHEM 1113 and 1131, (ACTS Equivalent # CHEM 1424); General 
Chemistry II lecture and lab.

REQUIRED TEXTS:  1.) Experiments in Organic Chemistry; R. Hill and J. Barbaro; 3rd 
manual to all laboratories.  
bring your lab notebook to all laboratories.

STUDENT LEARNING OBJECTIVES:  1.) Understand the structure and chemistry of the 
major functional groups.  
2.) Supplement organic theory with practical laboratory skills.  
3.) Continue to develop study skills and test taking skills.  
4.) Develop a mastery of the material, not just a superficial recognition of the material.

REQUIRED CALCULATOR:  Any non-graphing calculator capable of (log) and (ln) 
functions is required for all class laboratories. You may not borrow calculators or use a cell 
phone. GRAPhING CALCULATORS ARE NOT ALLOWED.

REQUIRED ATTENDANCE:  You may not participate in the laboratory if you do not 
arrive on time and attend the pre-lab lecture. It is the student’s responsibility to obtain missed 
lecture material to prepare for the exams. A make-up / CLEAN-UP laboratory will be available 
for one absence at the end of the semester. Second and subsequent missed laboratories will 
have a zero recorded as the grade. Absences due to University sponsored events are excused.

CELL PHONES:  You should not access your cell phone during pre-lab lecture and during 
the first few minutes in lab when important safety information will be given. Please refrain from 
accessing your cell phone until you have the experiment started. Your valuable time will be 
better spent working on your lab report.

ACADEMIC MISCONDUCT:  Cheating will not be tolerated. Penalties for violations 
are described on page 55 of the 2013-15 UAM catalog and include withdrawing the student from 
the class or awarding the student a failing grade for the course.
**COURSE CONTENT AND TENTATIVE LABORATORY SCHEDULE:**

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
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<tbody>
<tr>
<td>TH 08/28</td>
<td>Check in, Safety, Notebooks &amp; Lab Reports</td>
</tr>
<tr>
<td>TH 09/04</td>
<td>Ex1 - Melting Point</td>
</tr>
<tr>
<td>TH 09/11</td>
<td>Ex2 - Recrystallization</td>
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<tr>
<td>TH 09/18</td>
<td>Ex3 - Hot Gravity Filtration</td>
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<tr>
<td>TH 09/25</td>
<td>Ex4 - Simple Distillation</td>
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<tr>
<td>TH 10/02</td>
<td>Ex5 - Fractional Distillation</td>
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<tr>
<td><strong>W 10/08</strong></td>
<td>MID - TERM EXAM (Experiments 1-5) GIVEN DURING LECTURE</td>
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<tr>
<td>TH 10/16</td>
<td>Ex6 - Thin Layer Chromatography</td>
</tr>
<tr>
<td>TH 10/23</td>
<td>Ex7 - Extraction of Caffeine from Tea</td>
</tr>
<tr>
<td>TH 10/30</td>
<td>Ex8 - Prep of t-Butyl Chloride (S_N1)</td>
</tr>
<tr>
<td>TH 11/06</td>
<td>Ex 9 - Prep of Phenoxyacetic acid (S_N2)</td>
</tr>
<tr>
<td>TH 11/13</td>
<td>Ex 10 – Nucleophilic Substitution (S_N1 v. S_N2)</td>
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<tr>
<td><strong>W 11/21</strong></td>
<td>FINAL EXAM (Experiments 6-10) GIVEN DURING LECTURE</td>
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<tr>
<td>TH 12/04</td>
<td>LAB CLEAN-UP! check-out</td>
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**EVALUATION:** Laboratory points will be 200 points of total 800 points or 1/4th of the combined lecture and lab.

- 10 experiments @ 10 points for data sheet/report: 100 points
- Lab midterm exam: Thurs. 10/08/14 @ 10:10 am: 50 points
- Lab final exam: Thurs. 12/04/14 @ 10:10 am: 50 points
- Total: 200 points

**GRADING:**

- A: 85.0-100.0%
- B: 75.0-84.9%
- C: 65.0-74.9%
- D: 55.0-64.9%
- F: < 55.0%

**Students with Disabilities:** It is the policy of the University of Arkansas at Monticello to accommodate individuals with disabilities pursuant to federal law and the University’s commitment to equal educational opportunities. It is the responsibility of the student to inform the instructor of any necessary accommodations at the beginning of the course. Any student requiring accommodations should contact the Office of Special Student Services located in Harris Hall Room 120; phone 870-460-1026; TDD 870-460-1626; Fax 870-460-1926; email: whitingm@uamont.edu

**Student Conduct Statement:** Students at the University of Arkansas at Monticello are expected to conduct themselves appropriately, keeping in mind that they are subject to the laws of the community and standards of society. The student must not conduct him/herself in a manner that disrupts the academic community or breaches the freedom of other students to progress academically. This includes cell phone use during class. Seats may be assigned to prevent problems.

**COLLABORATION:** Collaboration is an important aspect of science. I encourage you to interact during lab. Whether you are giving or receiving help among your study group, you will benefit from the interaction with your peers.
1.) The lab notebook must be the carbonless copy type specified and sold in the bookstore.

2.) The table of contents can be completed on the inside cover when the notebook is finished.

3.) Never remove original pages from your notebook. **The carbonless copies will be removed and stapled to the back of the report sheets.**

4.) Always use waterproof, blue or black, ink.

5.) The lab notebook is to be written as a continuous journal of experiments conducted in lab. Never skip pages.

6.) Never erase, use white-out, or obliterate an erroneous entry. Place a single line through the erroneous entry.

7.) Be thorough. Drawings, tables, all calculations, and detailed descriptions are expected. These should be well labeled. If graphs, procedures, etc. are added; they should be **taped** on the original with nothing hanging outside the notebook.

8.) **THE NOTEBOOK SHOULD BE SIGNED / DATED BY THE INSTRUCTOR PRIOR TO LEAVING LAB!**

**GENERAL FORMAT FOR PREPARING ORGANIC CHEMISTRY LAB NOTEBOOK:**

- Fill in the NAME and DATE in the space provided at the top.

I. TITLE: (be specific)

II. TABLE OF COMPOUNDS:

<table>
<thead>
<tr>
<th>Name</th>
<th>structure</th>
<th>MW</th>
<th>mp/bp</th>
<th>density</th>
<th>moles</th>
</tr>
</thead>
</table>

III. SAFETY INFORMATION:

IV. PROCEDURE: brief outline; you may cut and tape.

V. APPARATUS: simple sketch of the apparatus with the components labeled.

VI. OBSERVATIONS/DATA/CALCULATIONS/

VII. RESULTS AND DISCUSSION

VIII. CONCLUSIONS
ORGANIC LABORATORY SAFETY AND ETIQUETTE

1.) Contact lenses are **NOT** permitted under any circumstances.
2.) Safety glasses/goggles must be worn **AT ALL TIMES. NO EXCEPTIONS!!**
   The **FIRST** thing you do in lab is to put on your safety glasses. The **LAST** thing
   you do in lab is **wash your hands, then remove your safety glasses**, and then exit
   the lab.
3.) **NO EXPOSED SKIN** from your chest to the floor. You may be dismissed if
   you are wearing shorts, flip-flops, open toed shoes, sandals, bare-midriffs, etc.
4.) Long hair must be restrained to prevent accidental contact with chemicals, or
   equipment.
5.) Know the location of the eyewash, safety shower, fire extinguisher, and fire
   blanket.
6.) In case of a fire, do not panic. Let it burn, smother with a wet towel, or use a
   fire extinguisher if it is a large fire. Do **NOT** use water on an organic fire. If
   clothing is on fire, use the fire blanket or the safety shower, do **NOT** use the fire
   extinguisher.
7.) If exposed to chemicals, wash the affected area immediately with soap and
   water. Do **NOT** touch your face, eyes, nose, etc. while in lab. Wash your hands
   before leaving lab.
8.) Broken glass and melting point capillaries must be put in the broken glass
   container.
9.) Solid waste and paper towels, etc. should be disposed in the trashcans.
10.) Water soluble solvents such as acetone, ethanol, methanol, aqueous acids and
    bases can be diluted and disposed in the sink with lots of running water. Organic
    solvents such as toluene **MUST** be disposed in the waste bottles provided.
11.) Extreme care must be exercised when handling MERCURY
    THERMOMETERS. If you break one; **DO NOT ATTEMPT TO CLEAN**; prevent
    further dispersal and contact the instructor.
12.) **YOU MAY NOT START OVER.**
13.) Food, drinks, smokeless tobacco, smoking, radios, or horseplay will **NOT** be
    tolerated in lab. Backpacks and other materials must not be on the lab benches or
    in the isles.
14.) Never remove the stock chemicals from the fume hood or from the balance
    area.
15.) Before you leave the lab, your work area must be **CLEAN**. You must return
    **ALL COMMUNITY EQUIPMENT** to the appropriate community equipment
    drawers.