Course Syllabus: CHEM 3130—Fundamentals of Organic Chemistry Laboratory—Spring 2024

Classroom: M 130 / C 209 / C 210  
Instructor: Russell J. Franks, Ph.D.  
Class Times: 12:30-4:20 T

Office: M 114  
Email: rjfranks@sfasu.edu  
Office Hours: 11:00-12:00 MW  
9:00-11:00 TR  
Other times by appointment (Please email me to make an appt)

Phone: (936) 468—2199

IT IS STRONGLY RECOMMENDED THAT YOU READ AND UNDERSTAND THE POLICIES OUTLINED IN THIS SYLLABUS. IF YOU SHOULD HAVE QUESTIONS ABOUT ANYTHING CONTAINED HEREIN, PLEASE CONTACT ME AS SOON AS POSSIBLE!

Catalog Description:  
One semester hour, three hours of lab per week. Synthesis and characterization of organic compounds.

Prerequisite:  
CHEM 1312 & 1112 (or their equivalents) with a minimum grade of “C”

Corequisite:  
You must be currently enrolled in CHEM 3330 or have already had CHEM 3330 (or its equivalent)

Required Materials:  
- Laboratory notebook—You must use a spiral-bound lab notebook
  o If you took CHEM 1111/1112 here at SFA, you will use the same type of notebook
  o Notebooks may be purchased from Dr. Frantzen (M-119) for $20 (cash only, please)
  o This type of notebook is the ONLY type that will be allowed for this lab. No other type of notebook will be accepted.
  o If you have a notebook from a previous class (e.g. 1111, 1112, etc.), you might be able to reuse it, however, I must personally approve this before you are allowed to use it.
- A scientific calculator—Bring to lab with you EVERY TIME!
- Approved safety goggles will be provided in your lab drawer. If you wish to use other safety goggles, I must approve them personally before you are allowed to use them in lab.
- Approved footwear (closed toe)

Required Supplementary Readings:  
Handouts will be distributed prior to each lab. You are expected to read and study these handouts carefully. You should base your preparations for laboratory on what is described in the handouts!

Course Objective:  
For the student to gain competency in basic laboratory skills for the organic chemistry laboratory

Student Learning Outcomes:  
By the end of the semester, the student should be able to:
- Follow a published procedure to:
  - Perform an organic reaction successfully
  - Isolate and purify the product of an organic reaction
- Use library resources and the chemical literature to find information about organic compounds
- Write a good laboratory report including:
  - Recording his/her procedure, data, and observations in the laboratory notebook
  - Demonstrating in writing that he/she understood the chemical & physical principles involved in laboratory techniques & manipulations
  - Following established principles for communicating laboratory data & results
This course meets educator preparation standards for one or more certification programs; a complete listing of all the educator preparation standards this course meets can be found at: https://sfasu.edu/docs/jacksteach/jacksteach-standards-alignment-chart.xlsx

Course Requirements:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Fraction of Semester Grade</th>
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<tbody>
<tr>
<td>Library Assignment</td>
<td>10%</td>
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<tr>
<td>Recrystallization lab</td>
<td>10%</td>
</tr>
<tr>
<td>Acid-base extraction lab</td>
<td>20%</td>
</tr>
<tr>
<td>Indigo lab</td>
<td>15%</td>
</tr>
<tr>
<td>Preparation of soap</td>
<td>15%</td>
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<tr>
<td>Preparation of biodiesel</td>
<td>30%</td>
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Method of Evaluation:

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Percent</th>
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<tbody>
<tr>
<td>A</td>
<td>90.0—100.0 %</td>
</tr>
<tr>
<td>B</td>
<td>80.0—89.9 %</td>
</tr>
<tr>
<td>C</td>
<td>70.0—79.9 %</td>
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<tr>
<td>D</td>
<td>60.0—69.9 %</td>
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<tr>
<td>F</td>
<td>0.0—59.9%</td>
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</table>

If you have a question or complaint about how a particular lab report was graded, you must notify me in writing no later than five (5) class days after the lab report was returned to you. Your written appeal should discuss the specific nature of the problem. Grades will NOT be changed if you do not make an appeal within the two class-day period. It is recommended that you keep ALL graded papers until the end of the semester. In the event of a question or discrepancy about a grade on a particular activity, you will be required to produce the item in question before any grade is changed.

Note: If you drop the course, you MUST still check out of lab. If you check out at the end of the semester and do not clean your equipment satisfactorily, your course grade will be penalized by one letter grade!

Make-up Policy:

There will be NO make-up quizzes or labs during the semester. If you miss a lab for an excused reason (as specified by university regulations), you need to consult with the instructor as soon as possible.

Attendance Policy:

You cannot do the lab if you are not present (obviously)
- There are no “make up” labs.
- You are responsible for notifying the professor [NOT the TA] (in writing) if you know that you will have to miss a lab
- A student missing one laboratory for an unexcused reason will receive a grade of zero (0) on that activity
- A total of two absences will result in the student's lab grade lowered by one letter grade
- Three or more absences will receive an automatic grade of F in the course
- If there are extenuating circumstances (e.g. serious illness), you are responsible for notifying the professor as soon as possible

Semester Withdrawals:
Please note: The last day to drop this course without receiving a WP or WF on your transcript is Wed. Apr. 10th. If you drop the course, you MUST check out of the lab also. If you do not check out of lab, the Registrar will not authorize the drop. Please contact me if you wish to check out of lab.

Academic Integrity Policy:
Each student should acquaint him/herself with the University's codes, policies, and procedures involving academic misconduct, grievances, sexual and ethnic harassment, and discrimination based on disability. Copies of the SFA Policies and Procedures Manual can be obtained in print or online from the Office of Academic Affairs (http://www.sfasu.edu/upp/pap/academic_affairs.html)

Students engaging in academic misconduct (including cheating, plagiarism, or any other action that can improperly affect evaluation) will be subject to sanctions in accordance with SFA Academic Integrity Policies. **I will recommend a grade of "F" for the course and expulsion from the University for any such violations.**

**Academic Disabilities Policy:**

Stephen F. Austin State University is committed to providing reasonable accommodation for all students with disabilities. Students with disabilities who require accommodations in this course are requested to speak with me as early in the semester as possible. Students with disabilities must be registered with the Office of Disability Services prior to receiving accommodations in this course. The Office of Disability Services is located in Human Services Bldg., Room 325, (936) 468-3004 or (936) 468-1004 (TDD).

**Lab Conduct Policy**

- You are expected to follow the Chemistry Dept. safety rules **AT ALL TIMES** while in lab. A copy of the departmental safety agreement will be provided for you to read and sign.
- You are also expected to conduct yourself in a mature and responsible manner while in lab. **NOTE:** Usage of cell phones while in lab is **PROHIBITED.** Turn your phones off before coming into lab. You will be penalized for using cell phones in lab.
- Lab begins promptly at the listed time. **BE ON TIME!** If you are late, you will NOT be allowed to make up the quiz. Failure to do any of these will result in a substantial grade penalty. Repeated or serious conduct problems will result in you being kicked out of lab permanently, and can result in disciplinary action from the university.

I reserve the right to change any items contained in this syllabus. This includes, but is not limited to: course content, scheduled dates, grade cutoffs, and fraction(s) of final grade assigned to individual components of the course. If I need to make such changes, I will inform you of the changes in writing. **This syllabus in no way constitutes a legally-binding contract on my part.**

**Lab Reports:**
Lab reports MUST be submitted into Dropbox on D2L in order to be graded. A lab report template will be provided (as a Word document) on D2L for each lab activity. You should download these files and use them for writing your lab report.

- Lab reports MUST be formatted properly. Detailed formatting and file-naming instructions will be provided for each lab report. Reports not conforming to these guidelines will NOT be graded.
- Lab reports MUST be submitted in PDF format. No other format will be accepted. This can easily be done in MS word. Please see me if you need help on doing this.
- Lab reports MUST be submitted by the specified due date. This information will be provided on the materials posted on D2L and will be covered in class as well.
  - Any report submitted after the due date will incur a penalty for each day (or fraction thereof) that the report is late (weekends & holidays included)
    - 1 day late = 15% penalty
    - 2 days late = 20% penalty
    - 3 days late = 30% penalty
    - 4 days late = 40% penalty
    - 5 days late = 60% penalty
    - 6 days late = 75% penalty
    - 7 days late or more = a grade of zero will be assigned for the activity
- **The bottom line: Turn your reports in on time!**
Organic Laboratory Policies

- You are not in freshman chemistry anymore. The organic lab can be a dangerous place. Many of the chemicals you will use are toxic, corrosive, flammable, or otherwise hazardous. You do not need to be afraid of these chemicals; however, you do need to have a healthy respect for them. If you have a question about how to handle a chemical or piece of equipment properly, ask the TA or the professor.
- The best safety device you have in lab rests upon your shoulders. You have a brain. Use it. Think BEFORE you do things.
- Many accidents or mishaps in lab can primarily be attributed to two main factors:
  - Failure to prepare thoroughly for lab—You MUST know what chemicals you will be using and know the hazards associated with them. Pay special attention to any special warnings or directions given in the text or handouts. Listen attentively during the pre-lab lecture. Ask questions if you are unsure of how to handle a particular chemical or how to do a procedure. It is much better for you to ask and take a few minutes of class time than for you to do something incorrectly, ruin an experiment, and possibly create a safety hazard in the lab.
  - Momentary episodes of carelessness—Many times students simply forget that they should (or should not) do something until they do it (or don’t do it). At that point, it is too late. THINK about what you are doing. If you see a classmate doing something incorrectly, tell him/her. A lot of these problems can be alleviated, or even avoided, through proper, thorough preparation.
- A copy of the SFASU Department of Chemistry safety rules has been provided for you as part of this syllabus. READ THEM!!! You MUST sign this form before being allowed to participate in lab.
- You are expected to follow all safety rules AT ALL TIMES while in lab.
- ATTENTION FEMALE STUDENTS: IF YOU ARE PREGNANT, OR IF YOU FIND OUT YOU ARE PREGNANT WHILE TAKING THE LAB, PLEASE NOTIFY THE COURSE COORDINATOR AT ONCE!
- APPROVED SAFETY GOGGLES MUST BE WORN IN THE LAB WHenever ANYONE IS CONDUCTING AN EXPERIMENT! IF YOU ARE CAUGHT NOT WEARING GOGGLES, YOU WILL BE KICKED OUT OF LAB AND WILL RECEIVE A ZERO FOR THAT DAY’S LAB. Goggles must fit tightly around the eyes and be “splash-proof”. Goggles are provided for you in your lab drawer. If the goggles do not fit properly, or are not comfortable, please notify the TA or the professor immediately so that we can get you better goggles. You may NOT wear any other type of eye protection in lab without the express permission of the professor.
- NO FOOD, DRINK or TOBACCO USAGE is allowed in the lab! Water bottles, etc. should be kept in your backpack.
- NO EXPOSURE OF SKIN BELOW THE NECK, EXCEPT FOR THE ARMS is allowed in the lab!
  - This means that tank-tops and sleeveless shirts are not allowed
  - No shorts or open-toe shoes (sandals & flip-flops). YOU WILL NOT BE ALLOWED TO PARTICIPATE IN LAB IF YOU ARE WEARING SHORTS OR OPEN-TOED SHOES. If you often wear flip-flops to class, I recommend that you store an old pair of tennis shoes in your lab drawer and change shoes before lab. In the warmer months, if you wear shorts to class, bring a pair of sweats with you and change before lab.
  - Wear comfortable shoes! You will be on your feet the whole time.
  - Don’t wear nice (or expensive) clothing or shoes to lab. You will get chemicals on them, even if you are careful. Oftentimes, you won’t even realize that you got something on your clothing until you wash it and see a hole in it.
- Backpacks must be stored on the racks on the lab benches, NEVER on the floor or benchtop.
- The only things you should have with you when doing the lab are: your lab notebook, pen, calculator, and pre-lab outline. Lab texts should NOT be out during lab.
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<thead>
<tr>
<th>Date</th>
<th>Scheduled Activity</th>
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<tbody>
<tr>
<td>01/30</td>
<td>• Lab policies</td>
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<td>• Begin library assignment</td>
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<td>02/06</td>
<td>• Lab Safety &amp; familiarization</td>
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<td></td>
<td>• Check-in to lab</td>
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<td>02/13</td>
<td>• Recrystallization-Part 1</td>
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<td>• <strong>Turn in Library Assignment</strong></td>
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<td>02/20</td>
<td>• Recrystallization-Part 2</td>
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<td></td>
<td>• Discussion of Acid-Base Extraction Lab (theory)</td>
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<td>02/27</td>
<td>• Acid-Base Extraction-Part 1</td>
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<tr>
<td>03/05</td>
<td>• Acid-Base Extraction-Part 2</td>
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<tr>
<td>03/12</td>
<td><strong>No lab—Spring Break</strong></td>
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<td>03/19</td>
<td>• Indigo Lab</td>
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<td>03/26</td>
<td>• Soap Lab-Part 1</td>
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<tr>
<td>04/02</td>
<td>• Soap Lab-Part 2</td>
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<tr>
<td>04/09</td>
<td>• Biodiesel Project: Preparation-Part 1</td>
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<tr>
<td>04/16</td>
<td>• Biodiesel Project: Preparation-Part 2</td>
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<tr>
<td>04/23</td>
<td>• Wrap-up of Biodiesel Project</td>
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<tr>
<td>04/30</td>
<td>• Clean-up &amp; check-in</td>
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