CHEM 355-01 – Research Methods in Biochemistry – Spring 2020
SSMB 311E
Wednesdays 3:30–6:30 PM and 3 more hours per week (determined by the experimental schedule)

Instructor:
Dr. Fox, SSMB 304, foxjl@cofc.edu, 843-953-8094
Office Hours: 1–2 PM Mon./Fri. and other times by appointment (arranged via email)

Course Description:
In this course, you will work in a research lab environment to address a research problem by learning and applying modern biochemical techniques. These techniques include microbial cell culture, sterile technique, media and plate preparation, autoclave use, site-directed mutagenesis PCR, agarose gel electrophoresis, bacterial transformation, plasmid extraction via mini-prep, primer design, analysis of DNA sequencing results, and protein expression. You will also communicate your research to others via a variety of methods. Pre-requisite: CHEM 354L or permission of instructor.

Student Learning Outcomes:
- Apply a variety of standard biochemical lab techniques for the analysis of a research problem in biochemistry
- Compose a scientific manuscript based on results obtained in the course
- Defend and present your results at a poster session
- Interpret real data, examine its meaning, and formulate a modified research plan

Grading Policy and Scale:
Experimental work on research project and lab notebook 60%
Poster creation and presentation 20%
Final paper 20%

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Required Materials:
1) Safety glasses or goggles
2) Lab coat
3) Nitrile gloves (not latex)
4) Bound composition notebook to serve as a laboratory notebook
5) Ballpoint pen for all lab notebook recording
6) Calculator

Safety:
Please review the departmental Lab Safety Policy available on the departmental website. You are responsible for your own safety and the safety of those around you. This responsibility includes reading the procedures before arriving in lab to identify and anticipate safety hazards as well as speaking up if you observe someone doing something unsafe. If you do not wear appropriate safety gear, you will not be allowed to work in the lab. Please note:

1) Safety glasses or goggles are mandatory at all times in the lab,
2) Proper footwear, long pants, long sleeves, and lab coats are required to minimize your skin exposure to chemicals and other hazards, and
3) Nitrile gloves must be worn when handling chemicals.

Attendance Policy:
Labs are experiential learning courses that emphasize the scientific method and data interpretation and they provide training in essential technical skills for chemists and other scientists. It is not possible to master these essential technical skills without attending the labs. Thus, attendance in all lab periods is crucial. Unplanned absences, even when accompanied by an absence memo, will not be accommodated. **In all cases, if a student misses 3 lab periods, whether these absences are excused or unexcused, that student will receive a WA for a final grade.** A WA grade is equivalent numerically to an F. If you are ejected from lab for a safety violation you will get a zero for the experiment, and it counts as an unexcused absence.

Academic/Scientific Integrity:

SNAP (Students Needing Access Parity):
If you have a letter from the SNAP office and need academic adjustments or accommodations because of a disability, please contact me in a timely manner. If you have a disability and do not have a SNAP letter, please contact the SNAP office (http://disabilityservices.cofc.edu/).