

# Biochemistry Laboratory CHEM 3820 Section 1

Prof. Michelle Knowles

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Meeting time and location: Monday and Wednesdays 1-4:50 pm, SGM 209

Office: SGM 101 Email for times to meet

TA: Justin Shady [Justin.Shady@du.edu](mailto:Justin.Shady@du.edu)

**Course Goals:** The purpose of this course is to learn modern biochemistry laboratory techniques, how to write scientific papers, and give scientific presentations. In the last 4 weeks, we will perform a biochemistry research project that you come up with.

## **Materials:**

- Lab Notebook: must be bound (not spiral, not a 3 ring binder)
- All other materials (handouts, lab manual) will be posted on Canvas.

## **Grading:**

- A. Pre-labs:** There are 5 prelabs due at the start of class. If they are not complete at 1pm, they are considered late and 5 points are deducted.
- B. Lab Reports:** There are 4 lab reports due. All reports must be written in the format of a journal article (Abstract, Introduction, Materials and Methods, Results and Discussion, Bibliography). You must write your lab report and analyze your data INDEPENDENTLY! If two reports are identical in any way, including the same figures, both get zeros. You must print the lab report. Do not submit it via email unless the TA approves this.
- C. Notebooks:** Your notebook should contain a written procedure of the lab that day and include the purpose of the experiment and actual recorded data (*i.e.* the mass measured on the balance). The methods can be transcribed from the videos on canvas and needs to be complete before 1pm on days of class. If it is not, you will lose 3 points from the notebook grade each time. It needs to be signed by the TA or Dr. Knowles. Notebooks will be graded randomly during the term by selecting any completed lab and evaluating what you have chosen to include.
- D. Lab Participation and preparation:** Be involved in lab and clean up when you are done. Lab preparation is graded critically. Prior to coming to lab you need to do the pre-labs and watch the pre-lab lectures. Both will be posted on Canvas one week before they are due and pre-labs will be collected by me at the beginning of lab.
- E. Independent Projects:**
- a. Group Plan (due Day 1)
  - b. **Updates:** (individual grade)
  - c. **Report:** This is a journal style paper that should be written independently but using all of the group data. You should fully understand what other members did.

- d. **Presentations:** One formal group presentation over the projects will be done in March during the last week of classes. Details will be given in class.

**F. Exam:** The exam will be given in Week 7 and covers the theory and application of protein purification, characterization and spectroscopy that will be covered in labs 1-4. The text, discussion questions, data analysis (including linear fitting of data), and journal articles posted on Canvas will be covered.

### G. Grading

| <i>Assignment</i>                      | <i>points</i> |
|--|---------------|
| Prelabs(5, 10 pts each)                | 50            |
| Lab reports (4, 50 pts each)           | 200           |
| Independent Project Report and Updates | 75            |
| Presentation                           | 50            |
| Exam                                   | 100           |
| Lab Notebook                           | 25            |
| TOTAL                                  | 500           |

The lab, *including the balances*, must be cleaned up at the end of every session. If not, the entire class will lose points.