

## GRADING POLICY.

### Note: ALL EXPERIMENTS MUST BE SUCCESSFULLY COMPLETED INCLUDING THE WRITTEN OR ORAL REPORT IN ORDER TO RECEIVE A PASSING GRADE IN 5.310.

Each experiment will be graded on the basis of quality of the laboratory work and the write-up. The TA responsible for that experiment will grade experiments. Your TA should discuss the comments and evaluations with you. Questions, suggestions, comments, and complaints not handled by the TA's should be directed to Dr. Gheorghiu and/or Dr. Schrenk.

All experiment reports, which have been graded, are returned to you with a date stamped on the cover sheet. Please take time to check the total score, and to look at the comments made by the TA.

You have SEVEN (7) calendar days from the TA return date stamped on the cover sheet to request any review of the grading of your report. This request should go first to the TA responsible for the grade and then if a question related to grading remains the faculty teaching 5.310 (see details under Laboratory Organization). After seven days from TA return date, no report will be accepted for change of an incorrectly added score or any re-evaluation. If your Report is re-graded, it is your responsibility to check with Dr. Gheorghiu to verify that your grade has been updated on your 5.310 grade record.

**IT IS YOUR RESPONSIBILITY TO TAKE THE TIME TO PROMPTLY LOOK OVER EACH REPORT WHEN IT IS RETURNED TO YOU.**

#### **Grading policy:**

**Final Grade = Experiment Grade + Lecture Quiz Grade + Safety Quiz**  
(max. 625)                      (max. 500)                      (max. 100)                      (max. 25)

#### **A. Experiment Grade (80%): 100 points per experiment**

- (a) **Lab Quiz** (check the lab schedule; closed book ~15 min.). **15 points**
- (b) **Pre-lab preparation.** **10 points**  
It is essential that you have reviewed the experiment and recorded in your lab notebook all the information required to perform the experiment **without** consultation of the Laboratory Manual.
- (c) **The factual record.** **20 points**

## Grading

Data, procedure signed and dated. It is important to develop good habits in keeping a notebook.

- (d) The Staff's assessment of technique, deportment, safety, etc. **5 points**  
(e) **Lab Report** (either written or oral) **50 points**  
This includes points for correct identification of unknowns and data quality

The major part of the grade for the Lab Report is based on the analysis, interpretation and quality of the results, as well as the calculations, graphs, and the discussion sections. The Lab Report should demonstrate what you learned from the experiment and your ability to interpret and explain your experimental results. No grade for an experiment will be given without the laboratory report.

### **B. Safety Quiz (4%)**

There will be a **closed book** quiz on Safety based on the mandatory safety lecture AND required readings (especially the section on safety in this lab manual) on the first day of the first experiment.

### **C. Lecture Quiz (16%)**

There will be a **closed book** Lecture Quiz after the lectures are completed.

### **D. Grading Scale:**

**100% - 90%.....A**  
**89% - 80%.....B**  
**79% - 70%.....C**  
**69% - 60%.....D**  
**59% and less.....F**

### **E. Details of the Experiment Grade**

#### **Laboratory Quizzes (15 points)**

There will be five lab quizzes during the semester. The quizzes will be given in the laboratory on the days indicated in the schedule. Any topic related to the theory, procedure, analysis and safety of the experiment may be fairly probed. The emphasis should be on the lab manual and **application** of information from the morning lectures. More theoretical aspects of the lectures will appear on the final lecture quiz.

IF YOU MISS A LAB QUIZ DUE TO AN **EXCUSED** ABSENCE FROM LAB, SCHEDULE A MAKE-UP QUIZ WITH YOUR TA AS SOON AS POSSIBLE, WITHIN ONE WEEK.

### **Pre-lab Preparation (10 points)**

The quality of the pre-lab preparation is assessed in two ways. The first and more important is your ability to follow your notes within the laboratory. The second is the grade assigned to the quality of the pages you turn in to your TA at the **BEGINNING OF EACH EXPERIMENT.**

**It is forbidden to use the Lab Manual during your work!**  
**The only sources you are permitted to examine during the time you carry out the experiment are your pre-lab notes. Exception: the Appendices containing detailed information on how to run an instrument or use of Excel may be brought into the lab.**

### **Laboratory Notebook (20 points)**

Your TA, based on the pages you turn in at the END of each day's experimental work, will assess the quality of each day's laboratory record. Organization, comprehension, completeness, lacks of extraneous or irrelevant entries will all be considered. See the section on notebooks for more details. These pages may be read in parallel with the written reports and examined during oral reports.

### **Staff Evaluation of Laboratory Techniques (5points)**

These are guidelines for evaluating laboratory techniques for the students. The TA (along with other staff members as appropriate) will assess and keep a record of the following:

1. The student is able to follow instructions.
2. The student wears goggles and observes lab safety.
3. The student arrives in laboratory on time.
4. The student is able to complete experimental work and leave the lab by 5:00 p.m.
5. The student handles balances and other instruments with care.
6. The student comes to the laboratory well prepared, having read the experiment in the lab manual, and has the pre-lab notes in the lab notebook.
7. Work in lab is planned and well organized.
8. The student works well with the lab partner and is cooperative with others in the lab.
9. The student is able to work independently.
10. The student asks good questions.

### **Formal Written Report (50 points)**

## Grading

All categories listed below will be considered in grading the written report, but the relative weight will depend on the nature of the experiment. Your final grade for each experiment will be based on:

- (1) Results: accuracy, yield, and unknown identification. \* See individual cover sheets for further information.
- (2) Data Analysis: correct manipulation of data, error analysis, and sample calculations.
- (3) Technique: Efficient use of time, independence, and experimental expertise.
- (4) Organization, comprehension, completeness, lack of extraneous or irrelevant information
- (5) Quality of discussion and conclusion
- (6) Quality of writing/ ability to communicate scientific ideas-while not a writing class it is expected that the formal report will be a well written document. The ability to communicate one's research is an essential component of scientific research.
- (7) The agreement between the factual record and the report. **Please note that if an observation, measurement, procedural step etc. does NOT exist in the factual record, it can NOT exist in the written report!!**

*\* For some experiments you will be given the opportunity to identify unknowns during laboratory time and thus receive part of this grade in advance. This will permit the opportunity to collect additional data and re-evaluate unknowns to the extent scheduled time remains for that experiment and thus reclaim SOME of the points lost due to the initial incorrect identification.*

**See the report format section for more details on the proper form for the report**