Course Emphasis: This course will emphasize the experimental basis for the study of biochemistry. Students should be taking BIOL/CHEM 463 while enrolled in this course. This course will extend your understanding of how the chemistry of life is studied. You will use a project-based approach to engage in laboratory investigation followed by creation of a poster to present your results.

Course Goals:

1) To establish a true biochemistry learning community. This means we are all important players in the learning process. We share the responsibility to:
   a) come to class prepared
   b) actively participate by asking questions and discussing topics
   c) commit to learning as much as possible both as individuals and as a group

2) To establish structural and multidimensional literacy in biochemistry. Nominal literacy -- Many people are here!! They understand that something is biochemical in nature but are naive in their understanding and have many misconceptions.
   Functional literacy -- Many people are here!! They use biochemical vocabulary, define terms, but most things are memorized.
   Structural literacy -- We want to be here!! Students understand biochemical concepts and procedures for studying biochemistry. They can explain these concepts in their own words.
   Multidimensional literacy -- We want to be here!! Students understand the relationship between biochemistry and other disciplines and the relationship between biochemistry and society.

Assessment of your learning:

To determine if you are meeting the goals of this course and learning biochemistry, I will use a few different assessment methods. As much as is possible we will discuss the ideas we are covering so you can verbally convey your understanding (or misunderstanding). This will allow me to provide immediate feedback to you. Such forms of assessment will not count towards your grade for the course.
Written assessment will be used to formally determine how well you are understanding the material we are discussing. This assessment will take the form of written exams and scoring of the posters/write ups you create. I will use a combination of matching, multiple choice, true and false, short answer, essay, and problem solving questions in the exams. The schedule for the exams is found within this syllabus. Homework problems and assessment of your laboratory notebook may also be used to monitor your progress, although they will not be used to determine your grade.

**Attendance:**

This course is designed to be interactive. Students will be expected to collaborate both inside and outside the classroom, therefore attendance is very important. If you miss a lab, it’s like missing an entire week of classes. There is no extra credit work in this class.

Make-up exams: An unauthorized absence from an exam will result in a grade of zero for the exam unless you have a signed excuse from an MD, law enforcement officer, or next of kin. There are a few (not many) valid reasons to miss an exam. If there is a valid reason for you to miss an exam, it is YOUR responsibility to notify me **BEFORE** the exam and complete the work prior to the exam if at all possible. Make-up exams are always harder than the original exam!

**Exams and points:**

<table>
<thead>
<tr>
<th>Posters or write ups 3 x 50</th>
<th>150 pts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final exam</td>
<td>150 pts</td>
</tr>
</tbody>
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Total 300 pts.

**Grading:**

| 90-100% | A     |
| 80-89%  | B     |
| 65-79%  | C     |
| 50-64%  | D     |
| Below 50% | F     |

***Final grades are based on total lab points. I reserve the right to utilize a grading curve to determine your final grade. I will not curve downward.
Text and readings:

Gretch, D.G. Laboratory Notes for Biochemistry 473, 2006. (To be distributed)

Laboratory notebook. (Mead composition notebook) quadrille

Required readings will be assigned or presented in class in advance. These readings will be part of the basis for classroom discussions and will be tested over as well. Labs should be read prior to the day they are performed.

Tentative topics to be covered in Biochemistry Lab
BIOL/CHEM 473

1-19 Introduction
1-26 Review of Lab Essentials
2-2 Lab 1: Purifying a Protein to Homogeneity
2-9 Lab 1
2-16 Finish Lab 1
2-23 Lab 2: Activity staining in non-denaturing electrophoresis
3-2 Finish Lab 2
3-9 **Spring Break**
3-16 Lab 3: Cell Culture and Kinetics of Protein Expression
3-23 Lab 3
3-30 Finish Lab 3
4-6 Lab 4 TLC and GC Analysis of Lipid and Fatty Acids
4-13 **Spring Mini Break**
4-20 Finish lab 4
4-27 **Final Exam**