There are two different projects in this course:

1. **Experimental Project**

**Objective**: This course provides experience with techniques of broad use in enzymes. Your main goals in each experiment are:

1. To learn a new laboratory method
2. To use the method to measure the activity of the enzyme
3. To use the method to collect reproducible, interpretable data
4. To analyze useful results from your data
5. To locate and determine the values of $V_{max}$ and $K_m$ on a Michaelis-Menten graph
6. To locate and determine the values of $V_{max}$ and $K_m$ on a Lineweaver-Burke graph
7. To describe the relationship between the enzyme’s affinity for the substrate and $K_m$
8. To explain the meaning of your results

**A Case Study**: Study the kinetics of the selected enzymes from serine proteases from potatoes

**Laboratory Report in Publication Form**

This report satisfies the **Department of Biochemistry** requirement for a full report in publication form in all lab courses. Turn in the following materials by 2:30 pm on the Saturday specified on the course calendar. For individual parts of the report, such as figures, graphs, and tables, follow closely the guidelines for Laboratory Reports, being sure to include all specific materials listed here.

**Content**: Divide the Report in Publication Form into seven numbered sections, each with the content described below:

1. Summary
2. Introduction
3. Material and Methods
4. Statistical Analysis
5. Results
   1. 4. Discussion
6. Conclusions
7. Acknowledgements
8. References

**Quality**: This report should be an example of your best writing, prepared with the same care you would take in a writing course. Your ideas should be clear and insightful; your paragraphs should be organized, coherent, and in sensible order; your sentences should be logical and
grammatically correct; your words should be thoughtfully chosen and correctly spelled. Deficiencies in these areas will result in rejection of the report.

**Appearance:** The physical appearance of the report should also be exemplary. No part of the report should be handwritten or hand-drawn. Use the computer in all parts of its production: a MS word processing program for the text, an Excel spreadsheet program for tables, a **ChemWin** program to draw the chemical structures, a Visio program to draw diagrams, and a Graf fit or **Prism program** for graphing graphs and charts.

**Significance:** Write this report like a scientific publication in which you are reporting your work as if it were original research. Throughout the report, speak of the work and the results as if it were research having value in itself; do not describe the work as a course experiment with educational goals.

### 2. Oral Presentation Project

This project is designed to give you some experience with reading and interpreting your data that deal with the experiments that you did in the lab and with making an oral presentation of a scientific study using PowerPoint. It will focus on your results from the experiments that dealing with the kinetics of the selected enzyme and you will give a short oral presentation on your analysis of your data. Prepare and give a 10-15 minutes oral presentation that gives an overview of the study described in your lab report and an explanation of the data that supports your conclusions. The presentations will be given in class on **the last week BEFORE the general courses examination begins.** Submit a soft copy of your presentation saved in CD disk or flash memory using PowerPoint.