BIOL1406 **Enzyme Lab Report Instructions**

We have 3 weeks for the lab result March 23rd is the due date.

Due Date:

March 25, 2020 (by 11:59PM)

(Late submission penalty: 1 day late = 25% reduction; 2 days late = 50% reduction; 2+ days late = ZERO. Since you have ~3 weeks to complete this lab report, there is absolutely **no excuse** for not turning this in on time. For example: computer died, Internet didn't work, personal issues, work problems, etc. should NOT be an excuse because you should have started this lab when we did the lab. Please DO NOT wait until last minute or few days before due date to start working on the lab report. Submit it early and have it done so you won't forget about it!

Last Day for emailing me a first draft: (OPTIONAL)

March 18, 2020 (draft emailed to me after this date will NOT be read)

(If you want me to take a look at your first draft before your final submission, send me an email with your first draft as an attachment. I will comment and return the document back to you.)

Plagiarism:

Just as we do not tolerate cheating on exams and quizzes, plagiarism is NEVER tolerated as well. I have a system/tool that will check your lab report against a global database from the Internet and amongst other students in the same class/different class/different year, etc. It will VERY CLEARLY highlight sections where you copied and paste from website directly, and sections that were copied from exactly which student.

If your lab report is a work of copy and paste from different websites, different students, no original work, it will be a **ZERO**. In addition, the student you copied from will also receive a penalty of **50% reduction** in grade regardless how great the lab report is. I will email both students the plagiarism report.

How to submit the lab online through eCampus:

1. In my course shell, go to "Lab Materials".
2. Click on "Enzyme Lab Report"
3. Scroll down to "Assignment submission"
4. Attach your file by "Browse My Computer"
5. Your file MUST be in Microsoft Word or PDF file format. If it's the wrong format, eCampus will not read it, and it will be a zero.
6. Click on the check box for agreeing to the "Plagiarism Tools".
7. Click on "Submit" and wait for confirmation before closing out.

Required parts of the lab report:

1. **Title (2 pts)**
   -Title must be descriptive (example: "Lab 6: Enzymes" or "Enzymes turn brown" is NOT a descriptive title)

2. **Abstract (4 pts)**
   -3 to 4 sentences that summarizes the entire paper (include purpose, procedure, results, and conclusions)

3. **Introduction (12 pts)**
   -Describe background information about the lab, include discussion of the following:
   a. State and describe the peroxidase reaction (2pt)
   b. Describe how you can monitor the reaction with guaiacol (2pt)
   c. Describe what a spectrophotometer is and how it was used to measure enzyme rates (2pts)
   d. Describe how data was analyzed (how reaction rate is determined) (2pts)
   e. [VERY IMPORTANT] 4 hypothesis for the 4 different effects on enzyme reaction rate (enzyme concentration, pH, temperature, and inhibitor). INCLUDE predictions! (4pts)

4. **Materials and Methods (3 pts)**
   -No details necessary. Summarize your procedures for this lab (write in past tense since you already did this lab). DO NOT copy and paste instructions from lab manual in this section.

5. **Results (12 pts)**

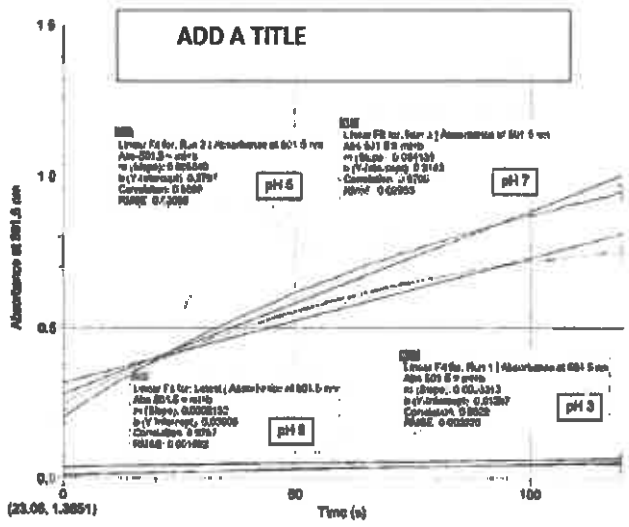
-4 line graphs from classmates (just copy and paste the graphs from eCampus by going to the Enzyme Lab Graph Upload menu) (4pts)

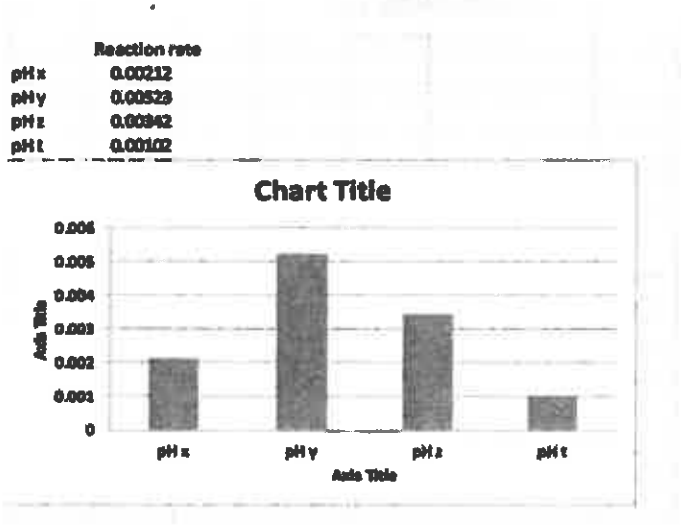
-From the line graphs and reaction rates (slopes) you have obtained from your classmates, you need to make 4 bar graphs through excel. (X axis should be the different parameters in chronological order, Y axis should be reaction rate) (8 pts)

Example: For the set with different temperatures, X axis should have: 0, 23, 40, 50, and 100 degrees C, and Y axis should have all the different reaction rates that was given for those temperatures.

-If you don't know how to use Excel to make bar graphs, read through lab manual p. AII-1 and AII-2.

Example of Graphs:





6. **Discussion and Conclusions (15 pts)**

-This section should have paragraphs describing in detail the answers for the following questions:

A. For each parameters (enzyme concentration, pH, and temperature) tested answer these questions: (12 pts)
   a. Did the parameters have an effect on enzyme reaction rate? How was it affected?
   b. Was an optimum condition (one with highest reaction rate) observed?
   c. If so, what was the optimum condition?
   d. Are you results in agreement with what we learned in lecture about enzymes?
   e. Are your hypotheses supported or falsified? If falsified, explain what happened and what could be the reason.

B. How did boiling affect the activity of peroxidase? (1 pts)

C. Was hydroxylamine a strong, moderate or weak inhibitor? Give the basis for your answer? (2 pts)

7. **References (2 pts)**

-One reference should be your lab manual:

Perez-Ramos, Sara, Couvillon, Stacie; Laboratory Manual for Biol 1406, Molecular and Cellular Aspects of Life, Labs 5&6

-Second reference must be included from an external source (another textbook, online website). If it's a website, it MUST be from a .org, .edu, or .gov website in order for it to be considered as a reliable resource. You just need to copy and paste the webpage address as a resource if it's online.

-You can have more than 2 reference if needed. If anything in your lab report that did not come from your own ideas originally, you must have proper reference for the material.