

## Principles of Biology I - BIOL 1107K (Fall, 2014) Section H

### 1. Course Information

- Course number and section: BIOL 1107K (section: H) CRN: 81734
- Course name: Principles of Biology I
- Hours of credit: 4
- Lab location and room number: Bailey Science Center 1083, Monday 1:00 pm - 3:50 pm
- Department, College, University: Department of Biology, College of Arts and Sciences, Valdosta State University

### 2. Instructor Information

- Instructor name: Dr. Jonghoon Kang
- Instructor contact: BC 2217, 229-333-7140, jkang@valdosta.edu
- Instructor office hours: T & R 9:30 am - 11:00 am (You may discuss course-related issues)

### 3. Course Description

Lab Manual: Goddard, R.H. 2013. Methods and Investigations in Basic Biology. 6th edition.

### 4. Lab Conduct (Policies)

- Arrive on time. Students who miss two labs without an excuse or three labs total cannot receive a lab grade above a "D" (60%). Attendance will be recorded using the lab quiz, which will be given the first 10 minutes of the lab. So, do not be late to lab. In the event that a student misses a lab with an excuse, s/he should email the instructor within 24 hours of the missed lab. It is the instructor's prerogative to accept the excuse or not. Absolutely no laboratories can be made up, and no work will be accepted late. If you are more than 15 minutes late, you may not be allowed to enter the lab, so please be on time.

- It is strongly advised to maintain a laboratory notebook with drawings, descriptions, data etc. of the laboratory exercises. A dedicated notebook is required. The notebook will help you study for the quizzes. Your lab notebook will be checked and the results will be included in your lab score.

- No eating or drinking in the lab.

- Attendance to lab is mandatory. Excused absences are usually given for medical emergencies and documentation must be provided; the professor determines whether or not an absence is "excused" or not. If a student misses three labs for any reason the student cannot earn higher than a "D" for his/her final grade. Except under extenuating circumstances, labs cannot be made up outside of scheduled laboratory sessions. Students are still responsible for all lab content even if they received an excused absence.

- Students must take care of lab equipment. Notify the professor if something is not working properly or if something breaks during the course of the lab

- Each student will be assigned a microscope. It is the student's responsibility to properly use the microscope. After lab the professor will check each scope to make sure that it was put away properly.

Failure to do so will result in one point being subtracted from the student's total lab points (not the final percentage) each week it is not put away properly. Notify the professor if your microscope is not functioning properly.

- Cell phones are not allowed to be used in lab with the exception of using them as timers or cameras to take pictures of data when necessary.

- Email: Please email me only from a VSU email account. I am unable to respond to emails from non-VSU accounts.

-Academic integrity is the responsibility of all VSU faculty and students. Students are responsible for knowing and abiding by the Academic Integrity Policy as set forth in the Student Code of Conduct and the syllabus. All students are expected to do their own work and to uphold a high standard of academic ethics. Cheating (including plagiarism) will not be tolerated. The instructor reserves the right to dismiss you from the course without credit if you are caught cheating. You will be respectful of your instructor and your fellow students at all times, or you will be dismissed from the class and potentially the course.

- Print out this syllabus and keep it in the lab notebook.

#### 5. Lab assignments and Lab Practical Exams:

Throughout the semester lab assignments will be given. These assignments are due at the start of the following lab period. No late assignments will be accepted (see above).

#### 6. Assessment or Evaluation Policy

BIOL 1107 is a 4 credit course, and the Lab section of the course will contribute 25% of your grade.

**11 quizzes (110) + A1 (10) + A2 (10) + N (10) + R (10) = 150.**

**Lab quizzes.** There will be a 10 point quiz at the beginning of each lab session, so do not be late for lab! The quizzes will be based on material from the previous labs. If there is an error with your quiz grade you must contact me on the week the quiz is given, as grades will become final by the following week.

**Lab Assignments.** There will be two assignments. Each assignment is worth 10 points. Questions regarding assignment grades must be made during the week the grade has been given to you, as grades will become final by the following week. Assignments are due at the start of class unless otherwise directed, and will not be accepted late. The assessment will be based on your lab manual.

#### Lab Notebook Guidelines

General:

- Your lab notebook should ONLY include materials from your 1107 lab (do not keep materials from other courses in this notebook).
- Try to keep your lab notebook legible
- You should be thorough in keeping your notes; the entire purpose for a lab notebook is to keep a record of your activities and results so that either you or others reading your lab

notebook will be able to replicate your activities. In other words, details are important! If you add 10mL of 0.1 M HCl to 200mL of water, don't write down "added HCl to water", because it would be unclear what concentration the HCl was, how much you added, and how much water you added it to. Your notes should be a full and complete record of your activities in lab.

- We are also going to use your lab notebook for exercises in metacognitive learning. Studies have shown that students have improved understanding and memory when they think explicitly about the learning process. Your lab notebook will be one way in which you formally THINK about how you are learning from lab.
- You will often be working in groups, but each individual's lab notebook should be a stand-alone record of the experiment.
- Number every page
- Every entry begins with the date in MM/DD/YYYY format and the time of day
- Keep a table of contents in the front of your lab notebook that is updated every week
- If you make a mistake, just cross it out; don't remove pages
- Begin each lab on a new sheet of paper

Lab Notebook Format: Follow this format, you will be graded on having an entry for each numbered item in the following guidelines. Some labs may require additional information and sections, but all labs will have the following items unless you are told otherwise.

1. Title and Date (1 pt)

Use this title in the Table of Contents in your lab notebook

2. Purpose/Objectives (1 pt)

Scientific purpose not educational one

3. Introduction (2 pt)

Theory, hypothesis, and prediction etc

4. Materials and Methods (2 pt)

5. Results (2 pt)

Record the results of your experiment, including every pertinent detail. Always transfer your group's results to your lab notebook. This includes recreating any tables or graphs from your lab manual in your lab notebook.

6. Discussion/Conclusions (2 pt)

- ✓ What was the one most significant thing you learned in the laboratory? Was this what you expected to learn (see Purpose/Objectives #2)? What else did you learn?
- ✓ Explain how the results support or do not support your hypothesis. If you do not understand your results, explain why you cannot explain the results, and what you need to know to be able to explain them. Be specific.
- ✓ What further questions do you have on the subject now that you have finished the exercise? Do the results make you think of any other questions in general about the subject?
- ✓ What further experiments can you suggest to carry out now that you have finished this experiment?

7. TENTATIVE LAB SCHEDULE AND TOPICS

Date:	Topic:	Assignments
Aug 18	Lab Safety and General Lab Introduction <b>Laboratory Safety: Exercise 1:</b> "The Black Box" - Scientific Method;	
Aug 25	<b>Exercise 2:</b> Basic Light Microscopy	Quiz 1
Sept 1	Labor Day Week – No Lab	
Sept 8	<b>Exercise 3:</b> Observation of Living Cells with Light Microscopy. Independent microscopy lab proposals discussion	Quiz 2
Sept 15	<b>Exercise 5:</b> Cellular Water Relations	Quiz 3, A1 due (proposal)
Sept 21	<b>Exercise 4:</b> Independent Group Microscope Project	Quiz 4
Sept 29	<b>Exercise 6:</b> Protein Extraction and Quantification from Living Tissues	A2 due (Group Research Paper)
Oct 6	<b>Exercise 7:</b> Enzymology: alpha amylase activity	Quiz 5
Oct 13	<b>Exercise 8:</b> Enzyme Regulation: "Investigation of the effects of temperature and pH on enzyme activity"	Quiz 6
Oct 20	<b>Exercise 9:</b> Photosynthesis	Quiz 7
Oct 27	<b>Exercise 10:</b> Cell Reproduction: Mitosis, Meiosis, and Cytokinesis	Quiz 8
Nov 3	<b>Exercise 11: Start:</b> Isolation of plasmid DNA from <i>E.coli</i> and restriction with MspA1I	Quiz 9
Nov 10	<b>Exercise 12:</b> PCR-based VNTR Human DNA typing	Quiz 10
Nov 17	<b>Exercise 14:</b> Transformation of the pGLO plasmid into bacteria	Quiz 11 Notebooks Due at end of Class
Nov 24	Thanksgiving Break	
Dec 1	Analysis of the transformation experiment and end of course assessment	Result assessment (R)

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	A1	A2	N	R	Sum	Final

**Final (%) = Sum/1.5**