

Biological Concepts - Unity (Bio 105) Lab Syllabus

D25L (Tue 12:40 – 2:40 pm) Halsey 201

B11L (Wed 3 – 5 pm) Halsey 211

Fall 2016

Instructor: Dr. Toivo Kallas

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Office hours: M 1:50 – 3:50, Tue 3 – 5. Other times by appointment. Anytime by phone or e-mail. (S.A.F.E. trained – all students are welcome.)

Lab Manual: **Bio-105 Concepts in Biology: Unity, Laboratory Manual** (Fall 2016 edition). Bring it (and your lecture text) to every laboratory meeting.

Lab Objectives and Statement of the Liberal Arts: Students will gain practical experience in experiment design and use of simple experimental procedures through which we can learn about the functions of biomolecules, cells, and living organisms. Our goal is to understand how we can use the scientific method – i.e. make hypotheses, make predictions, and design experiments to answer questions about living organisms and gain understanding of the world around us. A basic understanding of biology and the methods of science is important for ANY member of society to make informed decisions about environmental, medical, and ethical issues that greatly influence ALL of our lives. The goal of Biology-105 and the Bio-105 labs is to contribute toward that knowledge.

Attendance: Students must attend all lab sessions -- ***Missed labs cannot be made up easily.*** If you have a valid excuse (participation in university sponsored athletic or academic event, loss of an immediate family member, or verified medical condition) YOU must arrange in advance with another lab instructor to attend their lab session. ***Labs can only be made up during the week as the scheduled lab.*** Schedules are posted on the lecture D2L site and outside of the lab room that show when and where other lab sections meet. ***Students who miss labs or leave before finishing lab exercises will receive zero credit for that week.***

Lab grade: Final grades for Bio-105 are assigned by your lecture instructor. Usually 25-33% of your final grade is determined by work done in the lab. See your Bio-105 lecture syllabus for details. In our lab section, **50% of the lab grade will be based on quizzes, 40% on lab reports, and 10% on attendance and maintaining clean and orderly conditions in the lab.** Quizzes will be on-line via D2L. These quizzes may be taken at any time starting from the day following the lab through the day before the next lab session. I will not count your lowest quiz score in your grade. Some additional quizzes may be given in class. Further information on quizzes and lab reports is described below and will be discussed in class.

Lab materials:

- 3-ring binder or folder for lab manual, note book paper, and ***your lecture text book***
- 15 cm ruler, calculator, #2 pencils and erasers

Policies:

- No food or drink is permitted in the lab room
- Clean your work area when you arrive and before you leave! -- *students leaving dirty lab benches will not receive full credit.*
- **Cell Phones and electronic devices must be turned off while in lab – unless used for lab activities such as taking notes, photos, making graphs, or viewing presentations.** Texting and non-lab uses are not permitted during the lab. If you must leave your phone on in case of an EMERGENCY (i.e. in a life or death situation), set it to vibrate.

To succeed in Bio-105 lab:

- Read (and think about) the exercise **before coming to class**. I may give some quiz questions on material that you should have read in advance.
- Understand the rationale (reasoning) behind each exercise
- Understand why the experiments are done the way they are. What does each reagent (chemical or solution) do? What is the purpose of each procedure?
- Understand how your results support or refute the hypotheses being tested
- Connect exercises in lab with material covered in lecture
- Participate in class discussion -- Ask questions and take notes!
- Success in lab requires time for study. You may have to work hard to cover each of the points listed above. Simply showing up and going through the motions will not earn you a good grade in the lab!

Lab reports: I will require lab reports for some of the exercises and will usually ask for a group lab report. Lab report forms are in the back of your lab manual. The lab report form is short BUT you must think carefully about how to word your responses. You must be concise and clear and go straight to the point. Some lab reports will include graphs or tables. Lab reports will usually have the following sections:

Hypothesis. This is a broad statement that proposes a **possible explanation** for a phenomenon. Hypotheses are based on observations that you or others have made. They may be simply “educated guesses,” but in all cases they should be relevant to the experiment or questions being asked. Do not write “If – Then” statements for hypotheses.

Proposed Experiments and Controls. Outline the experiments that you did or propose to do, including control experiments.

Predicted Results and Rationale. State the outcomes that you predicted for your experiments and explain how they would support or refute your hypothesis. State the purpose of each control. This is where you may use “If – Then” statements: *If my hypothesis is correct, then such and such an outcome must occur.*

Actual results. Briefly describe your results. Also briefly describe graphs or other supporting data that you have included.

Conclusions. Explain how your actual results supported or refuted your hypothesis. Ideally, you want to give an explanation or interpretation that describes how your results helped understand the phenomenon that you tested.

Note that lab reports should be written in the PAST tense because they describe work that you did in the past.

Cheating policy: Cheating of any kind will not be tolerated. Cheating will result in an F grade in the class and possible expulsion from the University. *Students are referred to the University of Wisconsin Oshkosh Student Discipline Code as detailed in specific provisions of Chapter 14 of the State of Wisconsin Administrative Code. Any student(s) found in violation of any aspect of the above Code (as defined in sections UWS 14.02 and 14.03) will receive a sanction as detailed in UWS 14.05 and 14.06. Examples of violations include: looking at another student's exam or answer sheet and copying the answers during an exam, talking or whispering to another student during an exam, and receiving text messages during an exam on an electronic device. Sanctions range from a grade of zero for the assignment in question to an oral reprimand to expulsion from the University of Wisconsin Oshkosh. Students have the right to request a hearing and to appeal sanctions (as defined in UWS 14.08-14.10).*

Statement on Students with Disabilities: Students with disabilities are welcome in this course. Please see me during the first week of class so that we may arrange all possible accommodations.

LABORATORY SCHEDULE for Fall 2016: See page 4 of your lab manual.