Tips for success in Biol 205 by Joann Otto & Carol Trent

In Biol 205, we examine a variety of processes that occur in cells. Often we will be discussing a topic over several days. Some students lose sight of the 'forest for the trees'; in other words, they become lost in the details and how they relate to the big picture. Further, we cover a great deal of material, and students who wait until the last minute to study are overwhelmed. There are several strategies to learn the material in the course efficiently. These are outlined below:

1. Read the text to get the major ideas and terms related to a topic BEFORE lecture. The text contains far more material than can possibly be discussed in lecture so do not worry about the details. The figures in the text illustrate the major ideas and should be very useful. By doing this reading prior to class, you will come to lecture prepared to listen and learn and to take accurate notes. At a minimum, read the bold headings of sections and the definitions of words in bold, study the figures and legends, and read the section or chapter summary prior to coming to class.

2. Soon after lecture, check your notes to be sure they are clear to you. Then, knowing the parts of the reading that were emphasized in the lecture, reread the text more thoroughly and focus on the parts that were emphasized in lecture. You can use the text to clarify your notes and cross reference figures that help you understand lecture material. It is very useful to write a paragraph summarizing the main points of the lecture or to make a list of the main points. If you cannot list only 4-5 main points, you probably do not understand the material (the forest vs. the trees problem).

3. Be an efficient learner. In the few minutes before class starts, review your notes from the previous lecture. Often, our discussion of a topic will span several lectures and by reviewing the previous lecture, you will get your brain ready for the new one.

4. Form study groups. There are different strategies to make a study group successful but all require that all the participants have studied the material prior to meeting. Groups may want individuals basically to teach the others how a process works; teaching is the best way to learn something. Alternatively, participants can quiz each on the study questions provided by the instructor. Taking the questions as a mock exam (and grading each other) is an excellent way to learn the material.

5. Take advantage of office hours. I am very willing to help you.

6. When taking an exam, carefully read the questions. The, reread each question to be certain that you understand it.

All of the above might seem to require a great deal of time. However, if you keep up as the quarter goes along, you will not be panic stricken the day before an exam. Further, keep in mind that, at the college level, you should be spending 3-4 hours studying for each hour you spend in lecture. As with any endeavor, you will get out of this class what you put into it.

Becoming an Effective Learner for Biol 205

Adapted from *A Miniature Guide for Students on How to Study and Learn a Discipline using Critical Thinking Concepts and Tools* by Richard Paul and Linda Elder

Effective Reading

1) Become an ***active reader***. First examine the structure of your textbook. Look at the table of contents for a chapter and summarize in your own words the main points of the chapter. Then use *close reading* to learn about the specific ideas which supporting the main points. After each paragraph, summarize the essential idea behind the paragraph using ***key terms***. Also be sure to examine each ***figure or diagram*** carefully and summarize their important points. Be sure to read the ***figure legend.***

2) Consider that this class is training you to ***think like a biologist***, and more specifically, like a molecular and cell biologist or biochemist or geneticist. Your instructor will help you look for ***interconnections*** that unify these sub-disciplines.

Effective Listening

1) Read your textbook in ***advance of lecture***. Oftentimes, lectures will use the textbook readings as background and will not make sense if you have not kept up with the assigned readings.
2) Test yourself before class by ***summarizing the main points of the previous class***. If you cannot summarize main points, you have not learned them.
3) During class, ***actively listen***. ***Ask questions*** to fill in missing pieces. ***Make interconnections*** with previous lectures or courses.

4) Note-taking is important tool for becoming an active learner. Lecture information will be posted on the course web site but this lecture information is absolutely NOT a substitute for coming to class and taking your own notes.

5) ***Test yourself soon after class*** by summarizing the main points of the class. Identify the ***key questions*** in the lecture.

Effective Learning

1) Learn how to ***identify what you do not understand,*** and, if possible, *why* you do not understand it.
2) ***Test your understanding*** of biology by explaining what you have learned to someone who is not taking Biol 205.
3) ***Always ask*** for clarification – by email, or questions in class or in office hours.

3) ***Understand the philosophy of testing.*** In general, our philosophy in testing for Biol 205 is to include on tests a mixture of factual recall, experimental analysis and applications of concepts to new situations. With this approach, students who try to memorize the textbook do very poorly. ***One way to prepare for the more challenging tests is to think about what would happen if one component involved in a process is not working.***