SUGGESTED STUDY TECHNIQUES

The conscientious use of proven study methods can help students to improve their mastery of subject materials and to improve their grades. In a physiological sense, although **LEARNING** involves understanding, it is mostly a matter of **REPETITION**: The more exposure students have to their subject materials, the greater their chances of retaining that information. The more times a neuronal circuit (pathway) is excited (used) in the central nervous system (brain and spinal cord) the more that circuit will be facilitated (remembers).

When students begin to study Microbiology they must recognize that: 1) most of the information presented will be "new" to them, and 2) much of the vocabulary used to present this information will be unfamiliar. Studying a new course "in a different language" is more difficult than taking a "more conventional class". It is somewhat similar to studying the history of Czarist Russia with the instructor lecturing on the history in Russian. You would obviously need to master the language before you can master the history. Therefore, when studying Microbiology (as well as many other academic subjects) you must learn the language in order to master the information.

The following techniques can be useful in **any class** where there is a large volume of information being presented and much of the vocabulary is new.

1. Establish a schedule (similar to your class schedule) and extend it for a full 24-hour day, 7 days a week. Know when you have free time to study and **use** it. Don't waste time sitting in the campus center, lounging on the lawn or watching mediocre TV. When you need to play, do so energetically, and when its time to study, do so intensely. Don't try to play and study at the same time.

2. Understand your physiology. Recognize when you are really alert and when you are sluggish mentally (like after meals). **STUDY ACCORDINGLY!**

3. Complete all reading assignments **before** the lecture and/or lab addressing that topic. You will find this makes the lecture and lab material easier to understand.

4. Make sure notes taken during class sessions are complete and accurately represent the information being presented. Most students write down less than half of the material received orally, and this is often inadequate. If necessary, share notes with another student and/or invest in a small recording device and record lecture and lab presentations. Recorded information can be reviewed before the next class session, and will allow you to fill in any gaps present in your notes. Reviewing recorded lectures increases accuracy, and allows for **REPETITION** of the subject material.

5. Use flash cards for vocabulary. **REPETITION IS LEARNING**, whether it is in college or in the second grade. Write each new term on one side of a 3X5 card along with the word **define**. On the other side of the card write out a complete definition for the term in the form of a question, leaving a blank space for the term being studied. This method will allow you to study for both definition and fill in the blank type questions. You will find that flash cards take time to make up, but are highly effective if used properly. For best results, do not attempt to put too much information (more than two new terms) on a single card. Note - If you have to turn each card over before you can answer the questions asked, you do **NOT** know the material.

6. Review is repetition; **REPETITION IS LEARNING**. Review each night before the next day's class. Pick up points on quizzes. **KNOW WHAT TO STUDY**, and if the instructor tests from lecture materials, don't waste time excessively studying other sources of information. Review several weeks ahead for finals. Get ahead of the crowd. Try simply reading and re-reading your notes from beginning to end at least three or four times a week (it will take less time each time you read them, and is more **REPETITION)**. If you have reviewed ahead of time you can come to the instructor and get questions answered while others are feebly cramming.

7. Rewrite or record your lecture notes using a word processor. It is time consuming but is more repetition. **REPETITION IS LEARNING**. Look up unclear portions. Write a second set of notes containing only that information you could not immediately **remember** from the originals.

8. Set small, attainable study goals. If you are successful in attaining your initial goals, you will be encouraged to formulate and accomplish additional goals. **Success feels good!**

9. Review some schoolwork each evening before going to sleep. This is usually a very efficient learning technique as there is little or no interference with the formation of memory. This method is particularly valuable when trying to comprehend difficult subjects.

These techniques, when used properly, yield a high degree of success. If you force yourself to use them (over and over again), establish a regular pattern and follow it, you will be successful. "Hit and miss" study habits result in "hit and miss" learning and yield "hit and miss" grades. Consider your role as a student analogous to a sharpshooter; with practice you can be one of the best, but without it you're just average.

Note – Some electronic devices support the use of applications allowing for simultaneous recording and note-taking. The “Notability” app will integrate audio recordings with written information, and let students select specific sections of notes for review. Clicking on a section of notes will automatically bring the audio recording to that location.