

Study Hints

The following is a growing list of study hints with input from various instructors and students. If something really works for you that's not addressed here, please share it with us! Thanks.

- Start with the obvious: attend the classes you paid for. Copying/printing and reading through point form notes from a class you've missed will only tell you what you've missed. It does not replace 1-3 hours of being immersed in the subject, having terms and concepts explained to you, being able to ask questions and participate in other learning activities.
- PUT IN THE TIME (*minimum* recommended study time/week for this course: 6 hrs – in *addition* to attending lectures and labs regularly). There is a lot of new information to be assimilated, as well as a whole new vocabulary describing this information. Unfortunately, there is few short cuts around this basic requirement of simply devoting sufficient time to the subject. Set yourself a study schedule and stick with it. Attaining a good mark in a course usually involves making it a priority.
- Information is retained best if you review it at least once within 24 hours after you have first learned it. The "Principle of Primacy and Recency" states that we remember best that which we first learn, and also that which we most recently learned. This same principle suggests that study in several intense sessions (30-60 minutes) is more useful than extended study of two or more hours at a time.
- Studying is not the same as cramming lists of facts or simply reading through the text book. Successful studying means actively working with the material in various ways (see examples below) and committing to achieve a certain level of understanding, integration of facts, and ability to transfer knowledge to new situations
- Focus on the lecture notes as a guide line of what is important to know for the exam. Use the text to better understand key words and concepts covered in the notes and focus on those sections to expand on your notes, rather than simply reading the text book cover to cover.
- Skim the section or chapter you are planning to learn to get an overview of the highlights, *before* you try to learn the details. If there is more than you can absorb, first absorb the general concepts rather than the details. Once you know the generalities, you have a mental framework on which to attach the details which will give dimension and meaning to the general concepts. Work from general to particular.
- Details which fit into a pattern are much easier to remember than isolated details which don't relate to anything. You can form patterns by drawing diagrams, organizing your notes into tables, graphs or meaningful pictures, by mnemonic devices, concept maps and in other ways. This also fits into the previous strategy of working from general to particular.
- Simply reading and re-reading your notes may be not as useful as actively working with them by re-writing them in a different format (condensed, expanded, reorganized etc., see also examples above), explaining them to a study partner, making up and answering your own exam questions etc.

- Look over the day's material *before* coming to class (lecture notes are usually posted on the web by Friday of the previous week) – this is really helpful, as it can give you the mental framework for the major *general* categories of information to be covered. You can also bring any questions that arise directly to lecture.
- If you find you absorb better in lecture if you are just listening, instead of both listening and copying notes, then print out the lecture notes ahead of time, so you only have to fill in details, examples, exam question hints etc. during lecture.
- If you are not already inherently interested in a topic, making connections to your own body, behavior or ecological niche will perhaps raise your level of interest. This will make studying more meaningful. Simply allow your interest to be peaked... Your instructor and your text book are trying to make these “real life connections” whenever possible. Keeping these in mind, and coming up with your own connections while studying will hopefully make learning the basics less of a “chore.”
- If you don't already know how to take notes from lectures, you should work on learning this important skill. If you do know how, it is good to try and improve this skill. The most important skill of note-taking is to write down just enough to summarize and organize what has been said, and to stimulate your mind later when you review the notes.
- You should ask questions about any parts you don't understand, as soon as you have the problem, rather than waiting until exam time. If there isn't enough time to answer your particular question in-depth during lecture, please feel free to get help during office hours, special appointments or any scheduled review sessions.
- It helps to study with others, or at least to discuss the subject material with others. You can also use a study group to select or make up practice exam questions for each other, as well as discuss the answers.
- Use all available resources for practicing exam questions, e.g.:
 - Self-quizzes at end of chapters
 - Returned quizzes and assignments
 - List of review questions provided for each exam
 - Sample questions on text book web page
 - Instructor's numerous hints during each lecture
 - Your own and your study partners' imagination
- Make a list of the scientific terms used in this course that you did not know before. Write a definition or explanation of the concept for each of them (use the “Greek and Latin in Biology” sheet and your text book's glossary for help if necessary). Then quiz yourself or your study partner both ways: scientific term → definition, and definition → scientific term.

- Go over your old quizzes and assignments. Make sure you understand (or else clarify with your instructor) any corrections “in red”. Go to the place in your notes and text where the particular information is covered. Learn from your mistakes by asking yourself questions like: did I not understand the concept or did I skip over these notes when studying? Did I not study in sufficient detail? What other questions might I be asked on this material? etc.
- “3 back – 1 ahead” review sessions assure sufficient repetition for retaining material: as a habit, spend ca. 20 min reviewing the last lecture, with an additional 5-10 minutes each for the 3 lectures before that, and for previewing material to be covered next.
- “Cornell Notes” is a note-taking strategy, whereby you leave a blank column (ca. 1/3 of page’s width) at the side of the page, which you can later use for study notes such as sample exam questions, definitions, summaries... (this also works by writing in the blank space between powerpoint slides, or on the back of printed lecture notes)
- “SQ3R” is a reading strategy to get the most out of your text book. S = survey: skim headings, objectives, summary, review questions to get the big picture. Q = question: what do I already know about the subject? can I recall the headings/major categories I just read? what are the main issues? 3R = read, record, recite: read 1 paragraph or page at a time, carefully; record key notes or highlight only key words or phrases selectively (based on direct relevance to the big picture); recite key information by cuing yourself with the headings.
- Cloverleaf – cover 4 bases: to memorize terms and practice for exam questions, place a term (e.g. convergent evolution) in the center of a piece of paper portioned into 4 sections: definition, explanation (typically longer, more detailed than definition), examples, comparison (if applicable) with a related term (e.g. divergent evolution) – change or expand as necessary (e.g. quadrants could represent taxa if studying taxonomy)