

Some General Studying Advice from Dr. Myers

I had some difficulty with some of my early biology courses primarily because the material was so new to me. I did not take biology in high school and I just did not spend enough time in my freshman biology courses working with the material. I generally only worked with one study partner at a time and the total hours spent discussing the course material and using the terminology with the study partner really was insufficient. For me, reading the book and reading/studying my notes were not enough, especially since I had so little background in biology.

Some things that might have helped me back then and which might help you now are:

- 1) Set the goal of trying to really understand the course material and spend at least a little time every day on that material (lots of short study sessions are much more effective in long-term learning than a few big "cram" sessions).
- 2) Spend as much time as possible explaining to other students (including tutors) the learning objectives/content of the lecture and lab (the more you verbalize the terminology and biological relationships and processes, the easier it will recall information for exams).
- 3) Exert extra effort to identify concepts and processes that you do not understand and meet with the instructors to explain to them how you understand or don't understand the concept or processes with which you are having difficulty. Don't just say to the instructor that you don't understand something. Explain to them your thinking about the topic so that the instructor will have a better chance of correcting a misunderstanding or filling in a missing step.
- 4) Instead of just rereading/studying your notes rework them into outlines, short essays, flow charts, etc. Also add to your lecture notes annotations of related material from the textbook or Google searches to help you understand the topics more deeply. I discovered on my own that just rewriting my notes to make them neater did not help me learn. However, when I reworked them, especially into short essays, I retained the information much better, even when the exams were primarily multiple choice questions. My problem at the time was that writing even short essays long hand was too much of a chore for me. Typing on the computer is much easier for me and can be very effective in getting your ideas down. However, you need to learn not to waste time correcting typos and grammar problems as you type. Reworking your essay later to clean it up and make it concise and unambiguous should be a really effective long-term learning exercise.

An option for item 2 above could be to recruit some willing faculty members to listen to your explanation of a topic or process. These could be just 5-10 minute sessions; so, not a big imposition of a faculty member's time. You could try getting permission for 5-10 minute drop-in sessions with several willing faculty members (I am willing to serve in this capacity; although, in some cases, I may have to decline if I am really busy, but I expect those instances will be very rare). The faculty members that you recruit for "study aids" do not even have to know the material you are studying, so long as you can explain it to them clearly. After you have studied and practiced your explanation of a topic or process, you may believe you know the material well enough and don't want to impose on your "faculty-member study aids;" however, I recommend that you use faculty members or any other willing person as a resource for "one more" repetition in the learning process – at least until you are certain that you really have the material down solidly. Even then, showing off a little to a faculty member has benefits too. Having a bunch of short sessions with a variety of faculty members has the important/useful side benefit of helping those faculty members to get to know you better and vice versa. In the future, those faculty members might be able to provide you with especially strong letters of recommendation because they know you so well.