Study Advice, with emphasis on Science courses  
(Dr. Stuart Cromarty, Associate Professor of Biology).

Information gathered is from 12 years of Biology teaching experience. Students that closely follow these directions are the students that achieve their academic goals.

1. **Think of academics like training for a sport or working out in the gym.**
   To be successful you need to treat academics like training or working out. It should be done regularly and with discipline. Be proactive! Anticipate problems! Be aware of deadlines! Don’t be paralyzed!!

2. **How much time will I spend studying?** Remember that college is a full-time job! For every *hour* you’re spending in class you should be spending *one* additional hours studying, completing assignments, and preparing for upcoming classes. A typical course load of 15 credits would thus commit you to as much as 15 hours of work a week outside of class. Face it, you’re going to be very busy, and you’re normally going to be working 7 days a week.

3. **Getting ready:** Read your textbooks more than once – it’s not a novel. It’s a valuable resource – use it as such. Keep referring back to it. Study the figures – they’re there for a purpose. Remember that reading a science text takes time. Completing assigned readings before coming to class will allow you to ask questions if you are confused about any aspects of the reading.

   A useful approach for text assignments is to begin with a first reading. This may be fairly quick, but your purpose is to understand the basic concepts of the text. Study the figures and consider their relation to the text. Remember that the figures are there for a reason. The authors are trying to show you something that they’re discussing in the text. It should be clear to you what that is. As you read, take notes and write down any questions you have. Keep a list of terms or sections that you may not have understood. Note that the above suggestions apply to reading a journal article as well. Remember that reading journal articles typically takes more time than reading a section from your textbook.

4. **Week by week success in a course.** Always begin with your syllabus. What are the week’s assignments? On Saturday you should be planning for the week ahead. What reading do you need to complete in preparation for the coming week? Some of it must be completed by Sunday evening in preparation for your Monday classes. Some of it can be completed later during the course of the week prior to specific classes. Let’s consider a week and how you might approach it.

   On Saturday you’ve examined your syllabus and you know what your assignments are. Begin with a quick overview of the reading. Look at the figures as you skim the text. What are the main concepts that the reading is addressing? Your goal here is to get the big picture. On Sunday you should read the chapter again. Your goal is to catch the details. You should be taking notes at this point. The relationship of the figures with the text should be clear to you at this stage. If not, start your list of questions that you will be asking you instructor, mentor, or teaching assistant. Keep a list of key terms and list any that you don’t fully understand. You’ll want to ask about these. Once you’re done, get a good night’s sleep.

5. **On Monday, go to class (on time)!** Take notes as you listen to your instructor. You should make marks in the margins if you’re unclear about the content of some part of the lecture. These will be questions you may ask later. At the same time, if something is unclear to you, don’t hesitate to ask a question in class. If you’re confused, chances are good that your peers are too. Be sure to participate in discussions. Share your thoughts, your questions, and your opinions. Remember that you’re going
to learn from both your instructor and your fellow students. Contribute to making the classroom an interactive environment. Be sure to pick up any assignments or handouts before leaving class.

So, class is over. Is that it? Not quite yet. After class you should review your notes. Fill in any gaps in your notes. You may need to ask your instructor if you’ve missed something. Identify any questions you may have. Examine the notes to be certain the major concepts are clear to you. Be sure you can rework examples (i.e., problems) without the aid of your notes. If homework problems have been assigned, be certain to review the problems immediately so that you can ask any questions you may have. Try to do each problem as soon as possible. Work with a friend in the class. Working together with a peer is a good way to review.

So, you’ve done the reading and you’ve attempted the problem sets. Do you have any questions? If you do, make use of your instructor’s office hours. Be sure to attend mentor sessions. These sessions are a great opportunity to review and ask questions. If you’re concerned that you need more help, visit the Academic Support Center. Don’t make the mistake of not using all the resources that are available to you. They’re there for you, so make full use of them. And the week continues… Be sure to keep up with the reading, problem sets, and other assignments. Don’t fall behind. Once you do, it can be very hard to catch up.

6. So what to do with that first problem set?
   Well, for starters, do it! Don’t use the approach that if it’s worth doing, it’s worth doing at the last minute. Review all the problems the day you receive them so that you can ask the instructor about anything that’s unclear. Start the problem sets within a day of receiving them. Remember, most faculty start class by saying, “so, any questions”? Take advantage of this. Attempting to complete the problems early allows you to identify specific problems that you may need assistance with. Again, the later you begin, the less likely you will be to get the help you need.

7. How do I prepare for lab?
   Key to a successful lab is advanced preparation. Read the lab manual and any assigned readings or problems. Your instructor may ask you to prepare your laboratory notebook in advance of the lab. Be sure to do this so that you will be prepared to work efficiently. Be certain to come prepared to ask any questions you have regarding the procedures, the conceptual content of the lab, or its relation to the overall content of the course. Most of your lab work will be done with other students – you owe it to them to come to lab prepared and on time. While conducting the lab, try to look beyond the details of the technical work and keep the main point of the exercise in mind.

8. Preparing for and responding to exams.
   If you are completing course assignments and getting timely answers to your questions, you should arrive at the exam with a firm foundation to successfully answer the questions presented to you. Cramming is rarely a good strategy, and a good night’s sleep is also key to your performance. Remember that the exam is an important tool that will help you chart your progress in developing an understanding of the material. Use your exams to identify concepts that you have not yet mastered. As the old adage goes, “learn from your mistakes”. Be certain to review your exam, consulting any keys that may be posted, and ask your instructor about any unresolved questions you may have.

Remember: Once you plan for your studies you can enjoy college life and all the new experiences and opportunities that you will be exposed to.