ADVICE FOR STUDENTS

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SUGGESTIONS FOR GETTING A GOOD GRADE

Your teacher’s commitment to you
I hope to create a friendly, non-threatening atmosphere in class. Hopefully this will give you an opportunity to form study groups with your peers.

Astronomy resources for you
These include, in no particular order:
1. The professor
2. Your classmates
3. The entire textbook, including the introduction “How to Succeed in Your Astronomy Class”
4. *The questions asked by the book in the middle of the chapters*
5. The end-of-chapter questions
6. Mastering Astronomy website: www.masteringastronomy.com, which is free to you when you purchase a new textbook.
7. The FREE astronomy tutor(s)

Why homework is assigned
In 2006, an astronomy student received low grades on the first two of the four tests I offered that semester. She came to speak to me and afterwards she started to seriously use all of the resources listed above. She also followed the advice given about studying regularly. As a result of her hard work and dedication, especially in the 2nd half of the semester, she earned the highest grade in her class on the last exam. The resources truly are helpful! This story (and its occurrence more than once) is why we now have frequent homework assignments based on the 4th (starred) item in the list above. It truly is for your own good, I promise

More Suggestions for getting a good grade
1. Develop college-level study habits
   This is a college level class. You are expected to work at a college level, and that requires good study habits which, most importantly, include study and thinking time and effort from you. You will do better if you come to class, pay attention and are THINKING about what is discussed. If you don’t do all of those, expect to have a more difficult time. And of course, study regularly, not just a day or two before the tests.

2. Reading the textbook is important; please do so often. I chose this textbook for a reason, and I want you to take advantage of this expensive and important resource. Your first week, in addition to the appropriate chapter(s), I suggest the following.
   Strongly recommended reading:
   • Pages xxiv-xxv, How to Succeed in Your Astronomy Course
   Interesting reading
   • Pages xxvi-xxviii, Forward: The Meaning of The Cosmic Perspective

3. Form study groups and compare notes with classmates before and/or after class
   Research has shown that most groups of 2-4 study very well together, and most students benefit from studying in groups more than they benefit by working alone. The group’s stronger students improve by helping the other students because you learn the most (i.e. a lot) when trying to explain things to others. The not-as-strong students improve because they have a personal “tutor.” Everyone wins.
4. **Ask questions in class**
   There are plenty of opportunities in class to ask questions. There may be times when you feel like you simply “don’t get any of it.” Stop me BEFORE you get to this point. If you are making a serious effort to understand class and aren’t getting the concept at all when we’re discussing it, let me know during class, because you’re not alone.

5. **Physical science classes are not focused on memorization**
   The bulk of the test questions are about concepts, not facts. Facts can be memorized; concepts must be understood. If you spend most of your study-time trying to memorize things, you’re setting yourself up to do poorly because you’ve misunderstood one of the major goals of this course. You need to study concepts MORE than you need to memorize facts. Most students are required to take a science class to help learn how to think critically, not to memorize a bunch of facts you’ll never see again in your life.

6. **Extra credit – should you do it?**
   While extra credit is available as described in another handout, it is MUCH more likely that you will improve your grade by spending time studying. How much could you learn during the time it takes to go to watch an astronomy movie? You have to go to the store and get the movie (1 hour). You have to watch the movie (3 hours). Then you have to write a report about it. (1 hour). Total time spent: 5 hours. You’ll probably gain more points by taking those 5 hours and preparing for the next test.

7. **Take thorough notes**
   Write down anything the teacher writes down or presents on the computer screen. If there wasn’t enough time, check the web page and/or visit the instructor during office hours.

   The one thing most students don’t do enough: write down things teachers say, including questions asked during class and the answers to them. I try to give time for students to think about the answer before I give the answer, sometimes waiting until the next class period before giving the answer. Use that “wait time” to think about the question, and if you get it wrong, write yourself a note “I didn’t get this during class.” Write this note EVEN IF you understand the answer after it’s given, because it is not something you got on your first try. Therefore this was not something “easy” for you.

8. **Review your notes, multiple times**
   Review your notes at least twice: once the same day of class (with a colleague, as recommended above), and at least once more within a week. Then, review your notes again while studying for the test.

   If you try to do all of your studying a day or two before the test, like the 12 foot toss in the ring toss game, you’re asking for trouble. You are also putting yourself at a big disadvantage if you try to cram at the last minute because you can’t ask questions if you get stuck.

9. **What to study**
   First and foremost, review your notes and handouts. Nearly all of the questions come from material we discussed in class. Test questions may not be exactly the same questions asked in class, but if you truly understood the concepts in class, you should be able to answer all of the test questions correctly. Review the questions in the book, especially those listed elsewhere in this handout.
10. Under-used services

Very few students come to **see teachers during office hours**. If my office hours aren’t convenient for you, set up an appointment. I’m here a lot. Another option: send me email asking questions about class or call me on the phone.

Jessica Asbell, the **FREE astronomy tutor** in the Learning Resource Center, is also available. She will offer additional help, both general and topic-specific. She’s a great resource.

11. Test-taking strategies

**Get a good night’s sleep.** The extra 1-2 hours you spend cramming at the end of a long night probably won’t help you as much as having a fresh, alert mind. You don’t retain a lot of material you read, if you’re very tired when you read it.

Many students finish tests before class ends and then they leave. Unless you’re in a hurry, there is no reason to leave the moment you answer the last question. Many students lose points even when they know material because they accidentally left questions blank, marked the wrong answer, or marked the answer but for the wrong question. You have plenty of time in class to take the exams, and I give you that much time for a reason. **Use the time to your advantage. Check your work and don’t leave ANYTHING blank.** You might guess right.

**Read a question entirely, TWICE,** before you write anything down.

You have plenty of time to **go through the test multiple times.** I recommend answering all of the “easy” questions first. For questions you don’t know, leave them blank on your first try, and then go back through the test later and answer them. Whatever you do, before you turn in the test don’t leave a question blank, even if it seems too hard.

**Compare questions that are asking about similar concepts.** For instance, if question 1 asks when a new moon rises, and question 12 asks when a new Moon sets, you should know the time difference (12 hours) and can make sure your answers are consistent.

On questions that seem confusing or tricky or unfamiliar, try to **break the question down into smaller questions.** On ANY question, ask yourself a question similar to the one on the test, to see if you understand the concept. In other words, change the question around. If you can’t answer your own question, you might want to think about the actual question more. For complicated questions, try to simplify the question and answer that. Then try to add in the complication.

12. About the homework

a. Don’t try to answer the question by flipping through the book (or your notes), finding the appropriate text or picture, and writing down your answer. You haven’t learned anything from this.

b. **Homework is such a small part of your grade – the only reason you have to do it is to help you learn.** It is NOT a big grade factor. **Use homework to learn, not just to get a grade.** If you don’t think about the homework, you’re not learning anything.
STUDENT SUPPORT SERVICES

There are many student support services that may help you while you attend El Camino College. Some of these are directly relevant to astronomy, while others are more general.

For financial assistance, please consider visiting the Financial Aid office as well as the CalWORKS department and/or the EOPS program.

El Camino College also has a full service health center located next to the pool. Their phone number is (310) 660-3593 extension 3643. Because ECC believes healthy students are more likely to be successful students, we offer a variety of health services for you, either free or at a very low cost. The FREE services include: chiropractor, physician (doctor), psychological counseling (group or individual), HIV testing, and STD (sexually transmitted disease) testing. Low cost services include: pap smears, blood tests, pregnancy tests, and immunizations.

The Health Center offers free workshops for students on the following topics: managing anxiety, anger management, understanding depression, test anxiety, and building long-term relationships. See the Health Center for specific dates and times.

You may wish to consider enrolling in one of the Academic Strategy classes below. These are 2-unit, credit/no credit classes (i.e. no letter grade assigned) which meet 4 hours per week for eight weeks. See the Fall Schedule of Classes for more information.

- Academic Strategies 25ab, Thinking Skills for College Courses
- Academic Strategies 30ab, Test-Taking Strategies
- Academic Strategies 31ab, Study Techniques
- Academic Strategies 33ab, Memory Techniques
- Academic Strategies 35ab, Listening & Note-taking Strategies
- Academic Strategies 40ab, Mathematics Anxiety

You might also want to consider the Student Enhancement Program (SEP) Workshops in Counseling Services. These are a series of workshops offered throughout the year which help students generate solutions to problems affecting academic performance. Students discuss problems, formulate action plans, engage in exploration of resources, and report back to their group their findings and action taken. For more information visit the counseling center, or call (310) 660-3593 extension 3458.

There are also a variety of student group programs that have been shown to be very successful. These include the First Year Experience, Project Success, the Puente Program, CASA, and other programs in the Student Services area, often called “SSTARS.” Please investigate.

For more information about anything on this page, and especially for help choosing which courses to take, see your counselor. If you don’t have a counselor you know by name, make that a TOP PRIORITY!
ADVICE ON CREATING FLASH CARDS

Flash cards are useful for a variety of study environments, especially memorization. Generally, breaking up memorization is easier when you break it up into smaller increments. Here are some tips created by one of my geology colleagues about creating flashcards for this or any college course:

1. Use small cards, such as 3 x 5 cards, or cut up paper into small cards. The more cards the better.

2. Do not put too much information on each card. Just one or two things (otherwise, you defeat the whole purpose of them). Cards are not study sheets. They are “quick checks” of one or two items.

3. Put the question/vocabulary word on one side (label it “Q”) and put the answer/definition on other side (label “A”).

4. To make study time more efficient, go through your notes a few times before creating your flashcards, so that you can write flashcards for only information you haven’t already memorized.

5. Do not wait until just before the exam to make the cards. These should be done every week – remember the 3 foot tosses - and studied well before the exam.

6. The cards should be studied by you first. Then, the have a partner ask you the question and you provide the answer.

7. There are at least four types of flash cards:
   a. Concepts: These are typical long answer questions on tests. These often involve why and how things happen.
      (example: Q: What is the cause of longer summer daytimes?)
   b. Lists: These are typical multiple choice questions.
      (example: Q: Which direction is the Sun at 6am
         A: East
   c. Definitions: Know the meaning of important words.
      (example: Q: What is an astronomical unit?
         A: The distance between the Earth and Sun, 93 million miles, 8 light minutes.
   d. Diagrams: Know how to draw, label, and understand the diagrams (including maps) we have used in class.
      (example: Q: Draw the Moon, Earth, and Sun when the Moon is first quarter and it is noontime.)

Remember: These don’t do you much good unless you give yourself time to study them and quiz yourself over and over.
Make one example of each type of flash card (see attached advice sheet)
Put “question” or blank diagram on “front side” and “answers” or labeled diagram on “back side.”

<table>
<thead>
<tr>
<th>LIST</th>
<th>DIAGRAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Front”</td>
<td>“Front”</td>
</tr>
<tr>
<td>“Back”</td>
<td>“Back”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DEFINITION</th>
<th>CONCEPT</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Front”</td>
<td>“Front”</td>
</tr>
<tr>
<td>“Back”</td>
<td>“Back”</td>
</tr>
</tbody>
</table>