Tip for Students in Introduction to Statistics

Here are some basic suggestions that you can use and remember during the course to help you be highly successful.

Monitor your learning: You should keep a weekly log of your work in this statistics course. Lan (1996) tested the effects of self-monitoring on statistics class performance. Lan assigned students to either a self-monitoring or one of two control groups. Students in the self-monitoring group kept a log documenting the time they spent using various learning strategies (e.g., group discussion, tutoring, problem solving), the amount of time they spent studying a particular statistical concept, and they recorded their confidence level in understanding the material. Lan found that students in the self-monitoring group performed at a significantly higher level than the other two groups and demonstrated a better ability to organize and understand course content. It is easy to fall behind in statistics and hence, monitoring your progress will enhance your ability to do well in this course.

Keep Up: "The material presented four weeks from today will be based on the material presented today." A statistics course consists primarily of successive skill layer development. Thus, what you learn in during Week Two will be based on the material from Week One and what you learn in Week Three will be based on an extension of Week Two and so on. Therefore, it behooves you not to fall behind; this is not a course where you can just pick things up in the middle.

Be prepared to make mistakes and to take risks: Mistakes are a necessary part of the learning process. If you fail to take risks and you aren't making mistakes then you are undercutting your own learning. Therefore, make sure you participate in all online discussions and activities, as this will enhance your learning. Do not hesitate to participate simply because you think you may make a mistake or you might have the wrong answer. It is, in part, through trial error how we learn.

Seek understanding vs. rote memorization: As each research problem or scenario is unique, so will be your analysis/interpretation of data associated with each study. If you simply memorize formulas, you will not know when to use them or how to interpret data once computed. Thus, seek to understand the concepts. If you understand conceptually the underlying logic of each statistical analyses, you will then know when and how to use each technique. A corollary to the maxim of "seek understanding vs. rote memorization" is "study to learn as opposed to studying for a grade." Also, avoid surface learning--looking for "cues" or specific words to provide hints to a solution. Often these words may lead you to a false conclusions. So, again, look to understand the deeper concepts and not just surface hints.

Bear in mind that statistics is not a math course: Students and teachers should recognize that quantitative literacy is only a small component of statistical literacy. Statistics is not branch of mathematics but is rather a distinct discipline within the liberal arts (Moore, 1998; Cobb & Moore, 2000). As such, it is most important to focus on the learning of ideas as opposed to simply learning how to compute formulas.
There may be more than one correct answer to a problem: Often times in statistics, there is more than one answer to a problem or a single answer can be interpreted in diametrically opposed ways. This is actually part of the fun of statistics! Nonetheless, this fuzziness can be frustrating for students who want one correct answer to a problem. Unfortunately, this desire for clarity does not reflect the ambiguity of real life. Keep in mind that statistics are not designed to provide "proof" for a research hypothesis. Rather, statistical techniques are designed to be used as a tool to help us make educated decisions about research hypotheses. As with many tools, they can be used in many different ways with different outcomes.

Practice: Practice using the problems provided in class: Practice using the problems in the text. Make up your own problems to help you study. As with the development of any new skill, practice can lead to increased competence.

Keep your sense of humor: Because the application of statistical knowledge requires logical and creative thought, anxiety may be your worst enemy in a statistics class. It is difficult to think clearly if you are surrounded by a cloud of panic. Thus, try to keep this class in perspective and look for ways to make the class fun for you. Should you find yourself overwhelmed, contact me or other students in the class to help you get back on track.

Be patient with yourself: Learning statistics is very much like learning a new language. Early on you do not have enough knowledge to speak in complete sentences but as your learning and skills develop so will your fluency. Thus, be patient with yourself as you learn the introductory concepts necessary for the development of statistical competence.

Ask questions: It is impossible for me to know that you do not understand a concept if you do not ask questions. Although it may be difficult to figuratively "raise your hand" in public and express confusion, in the long haul, it will be less troublesome than demonstrating your confusion on an exam.

Don't be afraid to ask for help: There are many ways that an instructor can help if you are having difficulty. Only by communicating with me can I assess how best to provide assistance.

Use additional resources: Feel free to use additional resources to enhance your learning. For example, your text may periodically recommend a reading for additional information relevant to a particular topic. In addition, the instructor may be able to provide a list of suggested readings. In addition, go to the library and make a point of reading professional journal articles (particularly the results sections) in your discipline. This will help you become increasing familiar with the application and interpretation of statistical information.

Pay attention to time management: Again, it is vital not to fall behind in a statistics course and as such, effective time management is essential. Therefore, at the beginning of the term develop a formalized schedule for study time, class participation, sample problems, homework, etc. Be sure to pace your readings and assignments. If you fall behind in statistics, it is difficult (although not impossible) to catch up.
Take good lecture notes: As with any class it is imperative to take good class notes. Learn to recognize key lecture points. Thus, write down information presented on the board, watch for repetitions in the lecture and readings, watch for other types of emphases, pay attention to examples, and listen carefully at the beginning and end of lecture for highlights.

Read, read, read. Read all course information and/or the syllabus very carefully. Look for details about the course requirements, assignments, testing procedures, technology used, schedule or due dates, and contact information. If you do not find details about these topics, ask your instructor at the beginning of the course.

Key steps to learn the course: Review the course materials before attending the class, pay attention on class lecture, study the materials and update the lecture notes immediately after class, and keep fresh yourself for the previous materials.

Communicate often. Check your email often, and respond promptly to your instructor and fellow classmates. Communicate with me during the office hour.

Attendance: Attendance at each class session is required for the successful completion of this course.

Be prepared to study hard. Statistics is a challenge course, but doable. Avoid interruptions and distractions while you are working on your course.

Reference:

Survival Tip for Students in Introduction to Measurement and Statistics (http://www.webster.edu/~woolf1m/tips.html)