# How to be a FATHEAD!

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Here are some strategies employed by successful students. I refer to such students as FATHEADs because of the great volume of learning they have achieved. Here is how you too can become a FATHEAD.

F **Focus on Learning** The goal of taking a course should be learning. In a perfect world there would be a one-to-one correspondence between grades and learning. We do not live in a perfect world. Your goal should be to learn as much as you can within the confines of the grading system. Many students have the goal to work as little as possible within the confines of the grading system. Both approaches take into account the importance of grades but with the latter approach learning doesn't even enter the picture!

In almost every class period a concept or a method is introduced that you will be responsible for learning. In a programming course, concepts and methods tend to be cumulative. So, the topic presented today will probably require understanding of the topic presented during the previous lecture. If you haven't spent time with that concept since the previous lecture, then you will not have proper understanding of the previous topic, which will necessarily prevent you from understanding the topic of the day. You should spend time with each topic as it is presented. If you are focused on learning then you will spend time with those topics and concepts whether or not an explicit assignment has been given that requires you to explore them. If your focus is on minimizing the amount of work you have to do, then you will wait until an assignment is given. Rest assured that the assignments will come, but I may present two weeks of topics prior to an assignment. If you haven't been keeping up on your own, then the assignment may seem quite difficult.

A **Attend Class** Significant learning takes place during every single class period. You don't have to ask because the answer is "Yes ... we are doing something important in class." Unless you have a contagious illness or have died, you need to be in class. If you are not in class the instructor (usually) won't throw a fit or send threatening e-mails, but you will very likely do poorly in the course. If dire circumstances prevent you from attending one lecture, you are, of course, not doomed. However, you will need to work hard to get lecture notes, assignments, announcements, etc.

Implied in this is that you be on time to class and show up ready to focus on the material at hand. It does precious little good to "attend" class and then proceed to work on homework for another class while you are there. Likewise, if you are so tired you can't keep your eyes open then you will not reap many of the benefits of attending class.

T **Take Notes** If the instructor writes anything on the board you should make doubly sure that you have that information in your notes. That does not mean that the only things in your notes should be what the instructor wrote on the board. Taking notes will help you keep your attention on the material at hand. It has been said that the shortest pencil is longer than the longest memory. That is true, but an additional benefit of writing something down is that the act of taking notes will improve your memory of what was discussed. Your notes will be your best source of information when preparing for exams.

Repetition is necessary for many types of learning. Before coming to the next class period, review the notes you took previously.

H **Hustle** Hustling means more than doing things fast. It implies an attitidue of concentration, initiative, and hard work. Learning is often difficult. Many assignments will require determination and large quantities of time before they can be understood and completed. If you've never been stumped by an assignment before, then you've never been challenged and you are currently way below your academic potential. If university-level computer science courses were a breeze then every high school dropout would teach themselves the material and take your job while you were wasting time with an education.

A difficult assignment is not a weakness on the part of the teacher, but rather is evidence that you are doing something substantial and worthwhile. Attack assignments with the attitude, energy, and work ethic of an winner.

E **Enjoy Proper Rest** Numerous scientific studies have linked proper amounts of rest with good health and with improved performance in learning and problem solving. If your health fails, even temporarily, then you will be forced to miss class which, as we have already said, has dire consequences to your performance. Even if you somehow manage to attend class while sick you will be uncomfortable and will not learn effectively. Your brain requires sleep for learning to occur. Something happens while you sleep so that concepts that were perplexing prior to going to sleep become clear. Difficult concepts often require many "think-sleep" cycles before they become evident. If you come to class tired you will not learn well. If you do homework while tired, you will submit shoddy work. If you are too busy to get proper amounts of the sleep then you are too busy. Not getting proper amounts of sleep as a general approach to life is counter-productive. Your brain and body require various "stages" of sleep. Sleeping a couple of hours here and there will not provide ample opportunity for all stages of sleep.

A **Act with Integrity** In an academic setting acting with integrity is most often associated with "doing your own work." It should go without saying that a violation of an instructor's academic integrity policy will result in stiff penalties as prescribed by the course syllabus. Even if you don't get caught, you will have failed to learn the concepts and methods that will be necessary for success in future assignments, exams, and (even) jobs.

One other aspect of integrity involves showing respect for your instructor and for other students. At a minimum this requires giving your full attention to the instructor during class time. A more noble endeavor would be to employ the golden rule advocated by Jesus Christ: "Do to others what you want them to do to you."

D **Devise a Plan** It is, at times, shocking to see how many students approach an assignment, an exam, a course, or even life, with less thought than they give to the purchase of a cell phone. Most students do not employ FATHEAD strategies naturally. It requires effort, discipline, and planning. As an example, if you are going to get proper amounts of rest you will likely have to rearrange your life. You will have to plan days, weeks, and sometimes, months ahead.

If you have one week to work on an assignment but wait until the night before it is due to start on it then you are setting yourself up for failure! If you want to be properly rested for an exam you will have to spread your studying out over a period of time. If after the first exam in a course you find you are not learning all that you should, you need to rearrange your life to be able to employ the FATHEAD strategies. This will require planning.