

FAST FACTS**Preparing for Exams**

Today, like so many other days in your academic career, you have a test in one of your classes. You come to class already feeling frustrated even before you've seen the test. Why? Past experience tells you that no matter how many hours you prepare and how well you feel you know the material, you never do as well as you expect, given your preparation.

Here comes the test. You quickly scan it and find that, while you are fairly certain of the answers to at least half of the questions, the other half look relatively unfamiliar to you. Once again, you feel you're getting cheated out of the rewards you deserve for your efforts.

What's going on? It could be that, despite the devotion with which you feel you've prepared for the test, you haven't done all of the things you could have done to prepare for it.

How well you've prepared for a test isn't measured, unfortunately, just in how many hours you've put into preparing; it's measured by how you use those hours. Maybe there are some methods of preparing for an exam that you haven't thought of that could help you.

Research and experience have shown that learning and adopting new study skills can help students in many different kinds of classes perform up to their potential. Not knowing a particular study skill is not a matter for embarrassment; after all, no single individual knows every method for studying in college! The important thing to remember about study skills is that anyone can learn them. So, if you find yourself having trouble preparing well for exams, maybe it's just a matter of learning a few new skills.

Strategies for Exam Preparation**Scheduling time effectively**

If you're a student who feels you're spending a lot of time preparing for your exam but still aren't doing as well as you expect, maybe you aren't squeezing in all the time you could. Often, study time in preparation for an exam is slighted because the CMU student has so many other responsibilities. Studying for an exam is not an "assignment" in the same way that writing a paper is an assignment because you don't hand in your test preparation. But it is just as important to allocate time to preparing for an exam!

The first thing to do is to sit down and estimate how much total time you can and should devote to preparing for this exam. Then try to break that time into increments. If you have 10 hours, you'll remember more studying in 10 one-hour sessions rather than in 1 ten-hour session.

The nice thing about studying for an exam is that one can use those bits of time that more concentrated tasks might rule out. For instance, if you're waiting in a line somewhere for 15 minutes, you can usefully spend that time studying for an exam. Memory works best when you've had time to digest material, so grabbing snatches of time throughout the day can be a very effective way to review.

Decide what will be on the test

The next thing to do, after you've allocated time to preparing for your exam, is to decide what the exam is going to be about, as specifically as possible. You might start by going back to your syllabus and reading the course goals.



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Remind yourself how the themes laid out in the course affect the information presented in the course. Or ask yourself how you would explain this exam to someone who is not in the course as a way of testing how well you really understand what you are going to be tested on. Often, how well you can explain what a test is going to be about and what its purposes are is a measure of how well you are currently prepared for the test.

Identify what you do know and what you do not know

Preparing for an exam involves making decisions, including deciding what you do and do not know. Don't spend the same amount of time preparing for every topic. Studying everything with equal emphasis can be tempting, because you may feel like you're doing a thorough job, but concentrating on what you do not know is a better use of your time. When you've more or less equalized your knowledge of all the topics that the test covers, *then* review all the material together, not before.

Relate your textbook and lecture notes

What is the relationship between lectures and textbook readings? Almost always, the textbook serves as a backdrop to the more focused lecture material. Even if your instructor wrote the textbook you are using, a lecture is designed to highlight and trace the themes of the course in a way a textbook cannot. In general, therefore, you should use your lecture notes as a way to orient your review of the textbook. The textbook may, in one sense, contain "everything you need to know on the test"; but in another sense, your textbook is simply a collection of

information given its full meaning by the design and implementation of the course you are taking. Review your lecture notes and write down the major themes the course is tracing. Then go to your textbook and flesh out these themes as necessary, as well as looking for any major themes you may have missed in your lecture notes but that you suspect will be present on the test.

Reorganize materials

One of the best methods for retaining information and for testing the extent of your knowledge is to reorganize study materials. Too often, you can deceive yourself into thinking that you understand and remember more than you actually do, if you study for an exam by only reviewing materials from textbooks and from your notes as they were originally presented. You will retain more if you restructure material in a way that makes sense to you. Here are two methods:

Use notecards. Notecards are great because they're so versatile. Here are some suggestions:

- Put sample questions or problems on one side of your notecards and the answers on the other. This is an especially good way to create the experience of seeing material outside the context of a specific chapter or section of your notes. Do you know this material well enough to know it outside its familiar context? Remember, exams are always "unfamiliar" in this sense, too.
- Make a notecard for every concept or idea you're studying and then match these to problems or questions you might expect on the test.

- If you tend to have trouble working under the time constraints of a test, set per question time limits for yourself when using one of the above notecard methods.

Mind mapping. Mind mapping is a simple yet effective technique of test preparation. A "mind map" is a diagram of important concepts and their relationship as they appear in your mind (thus the name). You can do a mind map focusing on any particular topic a class has covered and/or on all the material the class has covered. Take a sheet of paper and jot down a key concept. Then think of another concept that relates to the first one. Write that one down and connect them. Draw a line between the two concepts. Write alongside this line the idea that connects these two concepts. Then think of a third concept and see how it relates to the first two. And so on. At the end of this process, you'll have a "map" that describes not only material from the class, but also the way this material fits together. Also, mind mapping can expose any gaps in your knowledge. Is a section of your map blank?

Use long-term test preparation strategies

If you find yourself re-learning large amounts of material right before the exam, this usually means you never really knew it to begin with. You may have partly comprehended the material when it was first presented, but you never transferred this material from short-term to long-term memory. If you have this problem, the following two strategies may help you transfer material to your long-term memory:

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Prepare for your future review the first time you read your textbook. If you've read actively, you can prepare more effectively. When you first sit down to do an assigned reading, make sure you underline or otherwise mark the most important sections. Then, when you review, you can return to these sections, perhaps making notes in the margins as you review.

Take active lecture notes. Listen for the themes and goals of your course while you're in lecture. Write down not only what's on the blackboard, but what it means in terms of the course's themes and goals. The problem with simply copying what's on the board is that copying does not help your memory the way organizing the material you're hearing in your own words will. This method is most effective if you're caught up on your reading for the course because you'll have a better idea about the themes of the lecture and will be able to concentrate more on remembering—as opposed to simply understanding—the material.

Test yourself

Challenge yourself to activate your memory. When you review, do more than read your textbook and notes over. "Self-test" by asking yourself questions, as if you were administering the test. If you review your course materials passively, it's easy to fool yourself into thinking you have material better fixed in your memory than you actually do. Try to do more than memorize what your course materials say. Try to make sure you really understand the implications and applications of the materials you're reviewing. Simply looking at something over and over doesn't mean you really understand it

nor will it necessarily put it in your memory for the test. Try looking away from the book or your lecture notes and asking an original question about the material you're reviewing. Can you answer? And can you do so without looking back at your written material? If you can, the chances are very good that you will understand and remember this material for the test.