To maximize your time spent studying, you want to emphasize active learning (not passive learning).

Passive learning is where someone else does the work and you simply listen or read. For example, an instructor puts together a lecture and then presents it and you simply listen and watch. Another good example is when a textbook author writes and compiles a text, and then you simply read the words. Passive learning includes

- listening to a lecture without taking notes
- reading a textbook (or internet page) without taking notes or practicing or such
- etc.

Active learning is where your mind is engaged and thinking and analyzing the topic that you are studying. Active learning is much more time efficient than passive learning.

After students have simply passively listened to a lecture, they will typically only remember 10% of the lecture content.

Visual images present a tremendous amount of information at the same time, and this makes the brain analyze and engage more than simply listening to words. As a result, students will often remember 3 times more when there were visual images of content, compared to when there were simply words to listen to (or read).

However, even presentations (or textbooks) with images typically only result in students remembering 30% of the material covered (lectured or read).

TAKING NOTES is an essential tool for students who want to maximize their time spent studying. Whether when listening in class, or when reading the textbook, students should take notes on the material as they go.

To take notes, you must actively analyze and process the information, and this engages the mind. Taking notes provides focus, and focusing on the material typically results in a significantly higher retention of content.

To take notes, you must continuously evaluate the material and identify the major concepts, the supporting ideas and examples, the vocabulary, etc. By forcing your mind to sort and classify the material, you come to understand the material.

In a typical classroom, when students are asked questions about the previous class meeting topics, the students who took notes typically remember more without even referring to their notes. Students who sat passively during the previous lecture, sometimes they can't even remember the overall topic (let alone the subtopics or examples). And in the long run, the result is that the students who take notes don't need to study as much before an exam, whereas the students who don't take notes often look at the material blankly, with the words only ringing faint bells of recognition.

For the online student, the textbook and its CD-ROM are your classroom, with the internet as an useful accessory tool.

Here's the most efficient way to study for an online course:

> Insert the textbook CD-ROM and open the chapter that you want to study
> Open the textbook to the same chapter
> Open your Geology Study Guide to the lecture outline of that topic

>> Work your way through the textbook CD-ROM chapter graphics and illustrations
-TAKE NOTES AS YOU GO!
-Use the outline in the Green Study Guide as a checklist and make sure that you get as much of that info as possible
-Use the textbook for more information and photos as you work through the CD-ROM

>> Using what you've learned, your notes and the textbook, start working the exam questions for that topic in the Green Study Guide (don't put this off, do it the same day that you go through the CD-ROM and textbook chapter).
- You should be able to figure out and/or complete most of the questions with the textbook and CD-ROM. For questions that you still can't figure out, search the internet for more information or help.
- If you can't figure something out after using all of these resources, send me an email or give me a call. Continue to study while waiting for a reply. Never put your course progress on hold while waiting for a remote response.

>> To assist you with the course material, there are also well-done videos and DVDs available in the LPC library. Check the front cover of your Geology Study Guide, and then page through the first few pages of the study guide and you will find even more videos listed (with call numbers).

Highly recommended are the Earth Revealed videos. This video series was created and produced for distance education. Each topic is covered cleanly and simply in a 30-minute video.

This video series is also available online at learner.org. The downside to viewing the series online is that the images have historically been small and when expanded they become pixilated and that makes them unusable for viewing and understanding the geologic features being studied.

Las Positas College has several copies of this series. Some may be checked out by students, while one set can only be viewed on campus. Chabot College also has a copy of this geology series, so if you live over in Hayward you could access the series from Chabot.

Viewing or using this series is not a requirement of the course. It is however, highly recommended by previous students who wanted more than the textbook (and its CD-ROM).

Just as with the textbook and the CD-ROM, the best way to maximize your time studying with the videos is to take notes while viewing them. Taking notes will actively engage your mind and force you to analyze the material instead of passively existing while it's on the screen. Actively engaging your mind means that you will need less review and studying later!

Of note, there are folks who have graduated from college who are now posting web articles and blogs where they are lamenting the fact that they coasted through college without taking notes. As a result, they now find themselves with jobs where they sit in meetings and they don't know how to listen to the meeting and take notes at the same time. And what that means is that when the meeting is over, they don't have the information they need to do their job and they are finding it embarrassing to admit to their bosses (who are probably shocked that their new employee needs everything repeated or written down for them).

By taking notes while in class, or while reading a book, you will serve two very important goals. First, you will actively engage your mind and this will produce more efficient studying time. Second, you will be practicing how to take notes, and this may be very important after you graduate and start your career.

Taking good notes takes practice. Your methods for taking notes will evolve. You will devise your own systems and your own shorthands. Some folks like to use colors to help them sort the information. Over time you will get better and better at listening and watching and taking notes on what is important at the same time.

But if you don't practice it, you won't get good at it, and you might even think you can't listen and take notes at the same time. You can. It just takes practice. You will get better at it.

Las Positas College is a two-year school, where we offer freshman and sophomore level classes. It is during those classes that you are supposed to get good at taking notes. That way, when you enter your junior year at a 4-year school, when you will be focusing more on courses specifically for your major, you should already know how to take good notes and your level of performance will be appropriate for a third-year student.

If you choose to coast through your classes without taking notes, however, you will find yourself at a severe disadvantage when you transfer to finish your last two years of your Bachelor's degree. Students who practiced at taking notes will leave you behind.

No one is going to make you practice. But I can tell you that taking notes, practicing at it and getting good at it, is one of the most valuable skills you will cultivate as a freshman

and sophomore. Really focus on spending time on getting good at taking notes while listening or watching someone's presentation.

For the online student, you need to take notes when working through the CD-ROM and when reading the textbook.

One of the major mistakes that I see when students take online classes, is that the students become much too passive. That students attempt to learn the material by silently reading the textbook to themselves. That approach typically results in struggling to the end of the chapter and then realizing that you don't remember what you just read! That's too inefficient to waste time on. Don't waste your time with that approach.

The material isn't going to somehow simply soak into your mind as you silently read the words on the page. The material and concepts aren't going to suddenly become clear by simply passively watching a video or something on the internet. You need to be active and analyze what you are hearing and/or seeing. Taking notes engages your mind and makes you more efficient and effective when studying.

In summary, the most efficient way to learn is to actively take notes and don't just passively watch or read or listen. Take notes and work the practice examples and run internet searches to find more images of the geologic features. Make yourself be active and you will learn more efficiently and more quickly.

How can you tell if you are studying actively or passively?

- Passive studying
  - Simply listening or watching or silently reading
  - You won't remember much afterwards, because you weren't expending much effort. You spent time, but not effort, and the result could actually end up just being a waste of time. Think of how many times you forced yourself to slog through silently reading textbook chapters in previous courses and then couldn't remember what you'd read. That's a waste of time.

- Active studying
  - You are expending effort while listening or watching or reading
  - You are taking notes
  - You are analyzing what is being said or done while it is happening
  - You are categorizing and classifying the information and details
  - You are asking questions about the material
    - You then look for the answers to your questions, either in the textbook or online or from other students or from the instructor
  - You will remember more because you will actually have learned more
  - You will have notes and summary sheets of information to use during the exams

If you are someone who has a busy schedule, and/or you are someone who hates wasting time when studying, then you want to study actively, not passively. When you study, make the effort to focus on the topic and make yourself an active learner. Take notes, analyze the material, ask questions, look things up, run internet searches. These types of things will make your study time more effective and therefore, more efficient and useful.

Avoid simply reading or watching or listening. Don't be passive. It's a waste of time.

Ultimately, the active learner generally enjoys their courses more and is able to remember more of the material years down the road. That's a true feeling of accomplishment. When the course material and the time you spent on it is useful for something months or years later.

Learning to take good notes comes with time and practice. Learning to be an active, efficient studier also takes time and practice. Over time, you will get better and better at it. You will become a better student, you will be able to take better, more useful notes, and you will be able to learn things more quickly and with more confidence. All it takes is time and practice. Unfortunately, there are no shortcuts passed the time and practice. The students who persevere and don't give up or quit, those are the ones who will finish their college degrees and have something useful to use when they go on to their careers and jobs. It's not about intelligence or how smart you are. It's about putting in the time and the willingness to put in the effort without dropping into the passive role too often.

I hope that when you are done with this Geology course, that you have improved your note-taking skills, that you have more confidence in your note-taking and that you have become more of an active learner instead of a passive learner. I hope that you will recognize when you are slipping into the passive, simply watching or listening role, and I hope that you will then realize that you should start taking notes to keep your mind actively engaged and processing and learning.

I also hope that by the end of this course, that you have truly learned some geology that will stick with you for the rest of your life. I hope that you find the geologic images and features fun and interesting.

Geology actually is a very cool subject that is all around us all the time.