

## Some Suggestions for Studying - Online Geology 101 (Gwyn Jones)

### 1. **READY... Review past material and strategies:**

- \* Consider how the online format differs from classroom-based courses, and what traits it shares. Feedback from students who've taken online classes: Almost universally -- and perhaps surprisingly to newcomers -- **it takes *more work, more time, better self-motivation, better organizational skills to succeed in an online class.***
- \* Carefully read graded work you've gotten back -- quizzes, labs, homework, etc. Try to figure out what went well for you, what didn't, and why. Find the correct answers to any questions you missed.
- \* Work on ways that will help you learn the material more easily, deeply, and/or efficiently. Are certain types of concepts or questions especially difficult for you? Which ways of learning seem to work really well for you?
- \* Choose one or two new learning strategies and try them for a week. For example, try outlining the textbook chapters and labs, if you don't already.

### 2. **SET... Prepare to learn the next material:**

- \* Start early. (Now's a good time.)
- \* Check the syllabus to see what's coming up next -- readings, assignments, labs, quizzes, etc.
- \* Skim each item that's due soon, to get a sense of what's involved -- amount and depth of material, resources needed, etc.
- \* Estimate how long it will take you to do each. Be realistic...It usually takes longer than it seems like it should!
- \* Write down a schedule of what you'll do when.
  - Tackling each item has several stages: setup, first-pass learning, studying, organizing/synthesizing, review.
  - Break large tasks into smaller "chunks". Don't count on being able to learn a ton of information in one study-session.
  - **Cold Hard Fact:** We cover the *same* amount of material for the *same* number of credits as a classroom-based course, which meets 8 hours a week. I expect that you'll be spending those 8 hours a week you'd normally spend in lecture to study for this class...That's in addition to the time you would have spent studying in the traditional class format!
  - Make up a schedule, write it down, and stick with it, no matter what. It's easy to let this commitment to yourself slide (hey, no-one's checking up on you), but please don't. It's vital to your learning.
- \* When you sit down to work, have all the needed materials ready at hand -- sharpened pencils with erasers, notebook for taking notes, printed lecture notes, your own notes, appropriate lighting and noise level, glass of water, etc.
- \* Make sure you're fed and rested enough to be effective.

### 3. **GO!... Study/learn the material:**

- \* Stick to your schedule -- A friend of mine who teaches study skills classes uses a timer with an alarm.

- \* Every half-hour, stand up and take a 5-minute stretch to help clear your head and get the blood moving. If you start getting distracted or nodding off, work standing up for a while (sounds weird, but it works).
- \* Pace yourself so you're moving fast enough to stay alert, but slowly enough that you understand the material.
- \* All sorts of studies have shown that to truly learn something, you need to be exposed to it at least 3 times. Practically no-one "gets it all" the first time -- A lot of the students who seem to grasp things quickly have had some exposure to the material or way of thinking before.
- \* Don't be afraid to pause and ask yourself, "Am I understanding this, or just passing my gaze over it?"
- \* Where concepts are unclear or an interesting thought or question pops into your head, jot a note to yourself. If it looks like it'll be straightforward to find the answer, spend a short time looking for it. If not, note how you'll try to find out.
- \* Exchange phone numbers and email addresses with one or more of your classmates. Contact them when you're unsure of information, and/or to study for tests.
- \* Consider this order (it works well for many "top students"):

### **1. Start with the textbook:**

- Read the book before attempting any assignments! You'll pick up a lot more if you've already familiarized yourself with the material. Science textbooks are not like novels--Plan on reading each chapter at least twice, and interacting with it intensively. Jot questions in your notebook or textbook.
- Mentally prepare -- Realize there's a lot of information in the book, and concepts build on previous material. You might have to read a paragraph several times in order to "get it"...and that's okay!
- Remember that *my lecture notes are on my website*. The notes may be helpful to you, so it's probably worth printing out one chapter's notes to see.
- Read the textbook Chapter Summary to see what you'll be learning.
- Read the chapter itself, underlining, highlighting and/or taking notes as you go.
- Pay special attention to the figures and tables -- "A picture's [often] worth a thousand words."
- When you think you understand the material well, test yourself by trying to define the Key Terms at the end of the chapter, and answering the Questions for Review (and For Further Thought questions). (You might prefer to wait until after you've viewed any videos/CDs/websites, or do it at this point.)

### **2. Then work with videos/CDs/websites related to the textbook material you just learned:**

- Mentally prepare -- Think of these materials as brief lectures by visiting geologists who are supplementing and maybe clarifying what's in the book. They're not nearly as comprehensive as a "regular lecture", but as we don't have regular lectures anyway, seek information in other formats.
- Skim related homework questions to see the kinds of things you'll be asked.
- View the material, with notebook, pencil, textbook (for reference), remote controller, etc in easy reach. Take good notes. (I can't ask you about everything that's in these materials, but there's lots of other important information in there.)
- Rewind/replay and watch it again, this time with related homework questions in hand. Answer what you can on scrap paper, pausing and/or rewinding as needed. Remember that not all the questions will be directly from the video/CD-ROM/website.

- Do the assigned homework, using the information you gathered above and any outside references. You're always encouraged to go beyond the assigned materials, to explore more deeply on your own.

### **3. Review and do the labs:**

- Mentally prepare -- For the online class, you have all of the materials you need to do the lab, in the manual, related websites, textbook, and occasionally your own house. Think of working on labs as playing detective -- e.g., "reading the rocks" to find out how they formed. Lab is also a great way to get hands-on involvement with the course material.
- I've included background information for most of the labs, but it's pretty condensed. If you've read the textbook first, you'll understand the lab better.
- Read the lab carefully, working through the questions with equal care. Try to answer your own questions with the resources at your disposal. If you're still stuck, mark the question, post/email me a question, and move on to the next question.

### **4. Work on other homework assignments:**

- Examples include: graphing assignment, discussions, etc.
- Mentally prepare -- Some assignments use different methods of learning than you may be used to.
- Read the instructions very carefully! When you're working on your own, it's easier to get confused.
- Do the assignment. Leave yourself time to re-check it before turning it in. Consider asking a friend or colleague to check your assignment also -- for "flow", typos, sense, etc.

### **4. Preparing for Quizzes/Exams:**

- \* Mentally prepare -- If you've used the methods above, studying for tests is the easiest part of the process. This is because you already understand most of the material.
- \* Start early, and pace yourself. This is especially true if you suffer from "test anxiety" (like I do!).
- \* Read the syllabus for deadline and material to be covered, and check previous tests to see the likely format. Schedule the test for a time and place where you will not have other distractions.
- \* Spend at least as much time studying and preparing as you would for a classroom-based test.
- \* Remember, once you start taking the quiz or exam, you must finish it at that sitting, within the time limit. Organize yourself so you don't waste precious time looking for information during the test.
- \* Some ideas I can personally recommend:
  - Rewrite your notes, merging textbook notes with video notes into one.
    - + If you're a visual learner, consider rewriting your rewritten notes again, the night before the test.
    - + If you're an auditory learner, try reading the notes aloud (to yourself, a friend, your dog...)
  - Make flash cards of terms and concepts. (In our textbook, most defined terms are in bold type.)
  - Form a study group -- Groups of 2 to 4 tend to work best. Test yourselves by making up examples and having the others answer them. Start simple, and build to the hardest questions you can think of.
- \* Study hard, then get enough sleep the night before and eat a good breakfast on test day! Breathe deep and remind yourself how much you've learned!

My first boss told me one of my assets was that I knew when to ask for help. Don't torture yourself by struggling for hours with something you just don't "get". Look in books or on the web, ask a classmate, or ask me! ☺

## Common Myths About College Science

### **Myth #1: I used to be able to do Science.**

After taking certain introductory courses, many women (and men) begin to question their ability to do science even though they may have done well in science in high school. It is important to remember that introductory courses aren't necessarily indicators of what science is really like or how well you'll do in science.

### **Myth #2: Nobody else in the class would ever ask this question. The professor will probably think it's a stupid question.**

There are few questions in this world not worth asking. In fact, the responses of the faculty we surveyed were unanimous: they find it rare that a "stupid" question is asked. Questions alert professors to material which the class is unsure of and to where they might try different approaches to get the point across. For each question you wish to ask, there are most likely a large number of your classmates with a similar question.

Ask yourself why you aren't raising your hand if you have a question. Hesitation to ask questions may reflect an underlying lack of confidence in one's own understanding of the material. The importance of challenging feelings of self-doubt can hardly be over-emphasized. If you're still uncomfortable raising your hand in class, don't let your question go unanswered. Ask a friend, ask a TA or go up and ask the professor after class. If your first attempt at asking a question doesn't meet with a satisfactory response, don't be discouraged from asking questions in the future.

### **Myth #3: If I go to see my professor I am wasting his/her time.**

All the professors we surveyed asked that we encourage you to talk to them about course material. Office hours are the best time to approach professors with questions. However, if you can't make office hours, set up an outside appointment. If it is difficult to contact a professor, try writing your questions down and leaving a note in their mailbox, or, even better, try e-mail. Avoid the mad rush to office hours right before an exam by asking questions as they arise. Go to office hours prepared with specific questions or concepts that you want to address.

Another great resource is your teaching assistant (TA). The TA may be more accessible than the professor and may have a different approach to communicating concepts.

### **Myth #4: Nobody cares if I don't do well.**

Many students whom we interviewed were unsure how to deal with their own personal academic problems, such as a disappointing test performance. Not understanding why you performed poorly is a very legitimate basis for a conversation with a professor. Try to brainstorm those factors that might have contributed to a disappointing performance. Then you will be in a better position, with your professor's help, to come up with strategies to improve your performance.

Study after study has indicated that women are more likely than men to internalize blame for poor academic performances. Look for concrete factors that may have contributed to your poor performance and address them. Remember, you were good enough to get into Brown, and you are good enough to do science.

### **Myth #5: If I can't do labs, then I can't do science.**

Some students find labs difficult, but thorough preparation can minimize the time and effort you spend in lab each week. Find out specifically what the TA or professor is looking for in a write-up. Don't wait until the last minute to write your lab, but don't let it become overwhelming.

While introductory science labs may improve your understanding of lecture material, they probably say little about your ability to be a scientist or to do independent research. They do provide the opportunity to acquire basic lab skills which will be important for future independent research.

### **Myth #6: Study groups don't help.**

Study groups - either formal or informal groups of students working together - can be immensely helpful, particularly if you make working in groups a part of your regular study schedule. By working with others, you can gain a new perspective on the material. Having to explain concepts to others makes you understand them even more solidly. The ability to solve problems and communicate with others is essential for success. An ideal study group consists of individuals who are committed to balancing participation and listening, and with whom you feel comfortable. Look for study partners in your unit, your lecture, and your lab. Also, getting involved in a WiSE affinity group will introduce you to possible study partners.

When you first start working with your study group, discuss the format of the study sessions, expectations of participants, and the goals of the group.

### **Myth #7: I can't get a good liberal education if I'm interested in pursuing science.**

Science concentrations require a significant commitment in terms of the number of prerequisites, limiting what you can study beyond the sciences. However, advisors and upper-class students strongly recommend taking classes in a variety of areas, not only in the sciences, during your first year at Brown. If you choose not to pursue science avidly when you first arrive at Brown, but are attracted to it in your second year, it is by no means impossible to start your concentration later. Placement out of some basic sciences can reduce your prerequisite load. For some students, a good liberal education includes study abroad. By planning with an advisor, you can study abroad while pursuing a science degree, even in engineering.

The Bachelor of Science degree is not the only path to take in science, even if you plan to continue with graduate study in the sciences. You can pursue a Bachelor of Arts in several science concentrations. Dual concentrations in science and a humanities field are also a possibility. In addition, Brown allows for the development of independent concentrations whereby you can work with faculty to develop a focus that meets your interests.

### **Myth #8: I can't change the system. I can't change the class. My feedback doesn't matter.**

If an issue arises about a certain aspect of a course, voice your concerns immediately. Your professors or TAs are great starting points for a discussion. If you still feel that your concerns are not being addressed, approach the Department Chair or a Dean. If you feel uncomfortable approaching a faculty member alone, then arrange a meeting with other students. In the past, student feedback has resulted in improvements of educational opportunities at Brown; the Undergraduate and Teaching Research Assistantship (UTRA) Program even pays a student to work with a professor on course reform.

## What's Your Learning Style

### The Visual/Verbal Learning Style

You learn best when information is presented visually and in a written language format. In a classroom setting, you benefit from instructors who use the blackboard (or overhead projector) to list the essential points of a lecture, or who provide you with an outline to follow along with during lecture. You benefit from information obtained from textbooks and class notes. You tend to like to study by yourself in a quiet room. You often see information "in your mind's eye" when you are trying to remember something.

#### *Learning Strategies for the Visual/Verbal Learner*

- \* To aid recall, make use of "color coding" when studying new information in your textbook or notes. Using highlighter pens, highlight different kinds of information in contrasting colors.
- \* Write out sentences and phrases that summarize key information obtained from your textbook and lecture.
- \* Make flashcards of vocabulary words and concepts that need to be memorized. Use highlighter pens to emphasize key points on the cards. Limit the amount of information per card so your mind can take a mental "picture" of the information.
- \* When learning information presented in diagrams or illustrations, write out explanations for the information.
- \* When learning mathematical or technical information, write out in sentences and key phrases your understanding of the material. When a problem involves a sequence of steps, write out in detail how to do each step.
- \* Make use of computer word processing. Copy key information from your notes and textbook into a computer. Use the print-outs for visual review.
- \* Before an exam, make yourself visual reminders of information that must be memorized. Make "stick it" notes containing key words and concepts and place them in highly visible places --on your mirror, notebook, car dashboard, etc.

### The Visual/Nonverbal Learning Style

You learn best when information is presented visually and in a picture or design format. In a classroom setting, you benefit from instructors who use visual aids such as film, video, maps and charts. You benefit from information obtained from the pictures and diagrams in textbooks. You tend to like to work in a quiet room and may not like to work in study groups. When trying to remember something, you can often visualize a picture of it in your mind. You may have an artistic side that enjoys activities having to do with visual art and design.

#### *Learning Strategies for the Visual/Nonverbal Learner*

- \* Make flashcards of key information that needs to be memorized. Draw symbols and pictures on the cards to facilitate recall. Use highlighter pens to highlight key words and pictures on the flashcards. Limit the amount of information per card, so your mind can take a mental "picture" of the information.
- \* Mark up the margins of your textbook with key words, symbols, and diagrams that help you remember the text. Use highlighter pens of contrasting colors to "color code" the information.

- \* When learning mathematical or technical information, make charts to organize the information. When a mathematical problem involves a sequence of steps, draw a series of boxes, each containing the appropriate bit of information in sequence.
- \* Use large square graph paper to assist in creating charts and diagrams that illustrate key concepts.
- \* Use the computer to assist in organizing material that needs to be memorized. Using word processing, create tables and charts with graphics that help you to understand and retain course material. Use spreadsheet and database software to further organize material that needs to be learned.
- \* As much as possible, translate words and ideas into symbols, pictures, and diagrams.

## **The Tactile/Kinesthetic Learning Style**

You learn best when physically engaged in a "hands on" activity. In the classroom, you benefit from a lab setting where you can manipulate materials to learn new information. You learn best when you can be physically active in the learning environment. You benefit from instructors who encourage in-class demonstrations, "hands on" student learning experiences, and field work outside the classroom.

### *Strategies for the Tactile/Kinesthetic Learner*

- \* To help you stay focused on class lecture, sit near the front of the room and take notes throughout the class period. Don't worry about correct spelling or writing in complete sentences. Jot down key words and draw pictures or make charts to help you remember the information you are hearing.
- \* When studying, walk back and forth with textbook, notes, or flashcards in hand and read the information out loud.
- \* Think of ways to make your learning tangible, i.e. something you can put your hands on. For example, make a model that illustrates a key concept. Spend extra time in a lab setting to learn an important procedure. Spend time in the field (e.g. a museum, historical site, or job site) to gain first-hand experience of your subject matter.
- \* To learn a sequence of steps, make 3'x 5' flashcards for each step. Arrange the cards on a table top to represent the correct sequence. Put words, symbols, or pictures on your flashcards -- anything that helps you remember the information. Use highlighter pens in contrasting colors to emphasize important points. Limit the amount of information per card to aid recall. Practice putting the cards in order until the sequence becomes automatic.
- \* When reviewing new information, copy key points onto a chalkboard, easel board, or other large writing surface.
- \* Make use of the computer to reinforce learning through the sense of touch. Using word processing software, copy essential information from your notes and textbook. Use graphics, tables, and spreadsheets to further organize material that must be learned.
- \* Listen to audio tapes on a Walkman tape player while exercising. Make your own tapes containing important course information.

## **The Auditory/Verbal Learning Style**

You learn best when information is presented auditory in an oral language format. In a classroom setting, you benefit from listening to lecture and participating in group discussions. You also benefit from obtaining information from audio tape. When trying to remember something, you can often "hear" the way someone told

you the information, or the way you previously repeated it out loud. You learn best when interacting with others in a listening/speaking exchange.

### *Strategies for the Auditory/Verbal Learner*

- \* Join a study group to assist you in learning course material. Or, work with a "study buddy" on an ongoing basis to review key information and prepare for exams.
- \* When studying by yourself, talk out loud to aid recall. Get yourself in a room where you won't be bothering anyone and read your notes and textbook out loud.
- \* Tape record your lectures. Use the 'pause' button to avoid taping irrelevant information. Use a tape recorder equipped with a 3-digit counter. At the beginning of each lecture, set your counter to '000.' If a concept discussed during lecture seems particularly confusing, glance at the counter number and jot it down in your notes. Later, you can fast forward to that number to review the material that confused you during lecture. Making use of a counter and pause button while tape recording allows you to avoid the tedious task of having to listen to hours and hours of lecture tape.
- \* Use audio tapes such as commercial books on tape to aid recall. Or, create your own audio tapes by reading notes and textbook information into a tape recorder. When preparing for an exam, review the tapes on your car tape player or on a "Walkman" player whenever you can.
- \* When learning mathematical or technical information, "talk your way" through the new information. State the problem in your own words. Reason through solutions to problems by talking out loud to yourself or with a study partner. To learn a sequence of steps, write them out in sentence form and read them out loud.

## Effective Study Strategies Will Help You Ace Your Science Courses

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*If you use these strategies regularly, you will find that your studying will be more efficient and you will achieve success in all of your courses, including the ones in science.*

Do you start studying for most exams one or two nights before the test? Do you complete most of your homework problems the night before they are due? Do you put off going over lecture notes until you begin preparing for an exam? If you answered yes to at least one of these questions, you are not using effective study techniques and are therefore not getting the most out of your classes. You are not alone. Most university students do not study in a manner that results in meaningful, long-term learning of concepts and development of problem-solving skills. The good news, however, is that these strategies are simple to learn and generally result in an immediate improvement in your learning and your course grades.

These study strategies involve getting the most out of your lectures, your homework assignments, and your tests and quizzes, as well as your professor and fellow students. In order to achieve a high level of success in science courses, you will need to implement a variety of learning strategies. Some of these are listed below.

- \* Preread the material that will be covered in lecture before the lecture. Use the syllabus provided by your instructor to determine the appropriate material to preread. By previewing the material, you'll be much better prepared to understand it when it comes up during the lecture.
- \* Be an active participant in the lecture. Sit near the front of your class, where you will be able to focus on the lecturer, avoid distractions, and see everything clearly. Try to form mental pictures of the phenomena being discussed, because visualizing the material will help you to retain more of the concepts.
- \* Take good notes, and review and rework them as soon after the lecture as possible. Develop a note-taking system that works for you. (Several different types are discussed in books on study strategies.) Research studies have shown that reviewing lecture notes within a few hours after the lecture considerably increases retention and understanding. Note areas where you are unsure and seek assistance from your instructor.
- \* Form a study group with classmates. Actively discussing the material with fellow students will help you better understand the concepts and remember the material.
- \* Visit your instructor's office hours regularly. Discussing concepts with your instructor will help you to clarify any you find confusing and will also help you get to know a faculty member better. This may come in quite handy when you are seeking letters of recommendation or information about graduate programs.
- \* Attempt your homework problems only after you have studied the material and know it well enough to work through the problems without looking at analogous sample problems or reviewing the solution in the solutions manual. One of the biggest causes of low performance on science tests is the habit of using the examples to do the homework. You must do the problem yourself; do not let the example do it for you!

- \* Rework all missed items on homework, quizzes, and previous tests as soon as possible after they have been returned to you. This will help you clear up any misconceptions and master material that you hadn't before.
- \* Use tutorials and other resources available through the learning center on your campus. Workshops on time management, listening and note taking, test preparation, test-taking, and other topics will be quite helpful as you develop the learning strategies that will enable you to achieve academic excellence.

If you use these strategies regularly, you will find that your studying will be more efficient and you will achieve success in all of your courses, including the ones in science. Students who use these strategies faithfully can experience a dramatic increase in their GPAs.

The keys to making any improvement strategies work for you, however, is to start using them and then to use them consistently. So, it is imperative that you begin implementing these study strategies immediately. Begin right now by prereading the material for your next lecture, or by calling friends to set up a study group, or by visiting your professor during her or his next office hours, or by resisting the temptation to use the sample problems to do your homework. The important thing is that you begin now, and watch your performance skyrocket.

### **Recommended References**

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{Note from Gwyn: Some of the wording applies specifically to the University of Puget Sound -  
But the strategies themselves can be applied at BCC or other colleges!}

## Getting the most out of your study time

### HOW DO I SURVIVE ACADEMICALLY IN COLLEGE?

Here are a few helpful tips from some of us who have been through it:

1. **Get to know** your advisor and check in with her/him regularly. She or he can help you with more than just your course schedule.
2. **Puget Sound fosters** a friendly environment, and people here are easy to talk to -- so if you have a question, ask someone for help with it.
3. **Learn to budget** your time from the very beginning. There is plenty of time for both your studies and your other activities, so long as you plan and use your time wisely.
4. **Take the initiative** to make friends on campus, particularly with people in your classes. The friendships will lead both to a richer social life and to mutual academic support (understanding assignments, getting notes when you miss class, working together in study groups).
5. **Get to know** your instructors and visit them during their office hours. You are not making a nuisance of yourself when you see your instructors for clarification of things that are happening in class, you are simply availing yourself of the faculty support that is a hallmark of Puget Sound. Students who work closely with faculty are usually more academically involved and always more successful.
6. **Take notes** in your classes. Nobody can remember all that went on in a class without them.
7. **Learn to type** and to use a personal computer, or find someone who can do these things for you (it's better if you can do them yourself).
8. **Get to know** upperclassmen in your major. They know the ropes and will be happy to share them.
9. **Always be sure** of prerequisites for courses and of the sequences in which courses should be taken before you register (these are in the *Bulletin*).
10. **Save the calendar** from the *Schedule of Classes* or consult the University's online Calendar so that you know the important academic deadlines (such as add/drop, withdrawal).
11. **Learn and practice** good study habits.
12. **Stay on top** of your studies, keeping up with them from day to day. You'll feel better about yourself as a student (and less guilty when you want to play). Most important, you won't get trapped by paper and exam deadlines, wind up cramming, and turn in less than your best work.
13. **Cultivate** a social life. All books and no play will take the fun out of life.
14. **Go to class**, participate in it, and make every effort to accommodate to your instructor's style in approaching the material (this does not mean merely swallowing her/his ideas and parroting them up at exam time, however). If you must miss class, inform your instructor in advance and pick up the assignment.
15. **Get involved** in campus life. Find out what the University has to offer beyond its academics from the Associated Students, and get involved.

## **TIME MANAGEMENT - The quality of your life will depend upon how you use your time.**

All activities require time. Your first responsibility as a college student is to be a student, but you will also need to allow time for food, exercise, fun, and rest. Your time must be managed if you are to have room for all these things.

There are 168 hours in a week. Here's how a successful student might use them:

- \* Studies = 45 (15 hours in class, 30 hours outside class)
- \* Sleep = 56
- \* Meals = 21
- \* Other = 46 (exercise, work, social life, unstructured fun)

Show most students the bare bones of these calculations, and their jaws will drop. This is because they don't feel there's nearly enough time for all they have to do. But if you take charge of your life, you'll find you have time to spare.

### **Rules for effective time management:**

1. **Fill dead time.** Arrange your schedule by blocks, and don't leave large blocks unplanned; the time will go to waste. Any block of an hour or more should be planned for.
2. **Study during daylight hours.** Research shows that your studying will be most productive in the active part of the day.
3. **Break up long periods of study.** Take a few minutes break time for every hour you study; breaks will keep you fresher, more alert, and more willing to stay with the books.
4. **Set aside time before classes which emphasize in-class activities.** Being ready to be actively involved will make them more enjoyable and productive.
5. **Set aside time after lecture classes.** Review of your notes from these classes will help fix the material in your memory.
6. **Tackle tasks by order of importance.** Take on the most important things first, regardless of whether you are looking forward to them or dreading them. Since there will always be times when you don't get everything done, it makes sense to be sure at least that the essentials are covered.
7. **Don't plan your time in too great detail or too slavishly.** The value of time management will be lost if you feel imprisoned every second of your life. Management of your time should liberate you, allowing free time for spontaneous fun after your work is done.
8. **Make sure your schedule allows sufficient time for rest, good nutrition, and exercise.** If you don't eat, sleep, and exercise regularly, none of your other plans will matter, because you'll be in no shape to carry them out. Take time to care for yourself.

### **Steps in Planning a Weekly Calendar:**

1. Purchase a daily planner or use the calendar bound in the *Logger*, and record in it your "fixed commitments" for the entire semester: eating, sleeping, exercise, class times, work times, family, community service, religious activities. Block these out. Make sure to allow enough time for eating, sleeping, and exercise.
2. Block out special activities on the days they will occur. Assume that Friday and Saturday nights will fill up by themselves, even if you haven't got special plans.
3. Block out the remaining time for study, in as regular a pattern as you can from week to week. Remember to allow 2 hours of study for every hour of class. Mark out specific time blocks for study in specific classes, as the timing of your study is important. Also record due dates for major projects and tests.
4. Remember to:
  1. study when you are fresh;
  2. study your toughest subjects when you're freshest;

3. plan breaks in your large study blocks;
4. study before participation and after lecture classes.
5. From time to time, review your schedule to make adjustments, if they are necessary.

## **YOUR STUDY ENVIRONMENT**

Managing your study environment is just as important as managing your study time

Successful students seek out a comfortable place, well supplied with study supports and free of distractions, to do their studying. They make a routine of studying at this one place. They do not invite their friends to join them (except in study groups before exams, and then they meet somewhere else); studying and socializing don't mix. In short, they find a place (not their room in the residence hall) where they can keep their attention focused on their work.

Research tells us that the place most likely to meet all of these conditions is the library. What specifically does the library give you that you need to study effectively?

- 1. Quiet:** Some students tell themselves that they concentrate well with the stereo going, the TV on, or with conversations or games taking place in the background. Research contradicts this claim. The overwhelming majority of students study best in complete quiet.
- 2. A Good Physical Setting:** In order to stay with the books for an extended period, you must be comfortable, but not too comfortable. In the library, you will find chairs that are easy to sit on but that keep you upright facing your work. You will find lighting that illuminates your books and notes without glare. You will find a work surface (either at a study carrel or at a table) that is uncluttered and spacious enough to spread out on. And you will find the support of easily accessible reference librarians and books when you are doing research.

Whether or not you decide to study in the library, make sure your study environment has all the advantages the library does. And when you use it, be sure you:

- 1. Use it regularly.** Patterns in our lives reinforce themselves. If you study regularly at certain times in certain places, then you will be psychologically ready for study when you go to those places. Let the habit help you.
- 2. Combat internal distractions.** Catch yourself daydreaming and put a stop to it. Catch yourself fidgeting (getting the paper lined up just right, opening and closing your notebook, rearranging your notes), and put a stop to it. Catch yourself planning activities for when you've finished studying, and return to the here-and-now. Continually reinforce yourself to study when it's time to study and you'll be finished sooner.
- 3. Avoid the temptation to share.** When you've discovered how well this study environment works for you, don't let your roommates or best friends in on it and drag them along, unless they will have their own private study areas, too. Unless you are forming a real study group, study must be a private affair. As it becomes more social, it stops being studying at all.
- 4. Have a plan.** Set realistic goals for each study session, and be sure you have all the materials at hand (books, paper, pen and pencil, notes, etc.) to reach those goals. Do only what you have planned to do; don't betray the mind you have coaxed into studying by pushing it beyond agreed upon limits -- it may betray you next time. Stay with your study until you have met your goals, breathe a sigh of satisfaction, and take off for some fun.

## **READING EFFECTIVELY FOR STUDY**

Reading for study is not the same activity as reading for pleasure, a fact that many students take a long, painful time to learn. In college, you are asked to read a great deal in a short time and to remember in detail what you have read. This is a new experience for most students coming to college.

Techniques for successful reading are numerous, but most boil down to a prescription for staying active in the reading process, questioning and interpreting as you read. Francis Robinson of Ohio State University has devised a technique called the SQ3R Reading Method, five steps for effective reading:

## **Survey, Question, Read, Recite, and Review.**

- \* By *survey* he means taking an overview of the reading assignment to get a sense of its overall thrust.
- \* By *question* he means asking yourself what the book's author is trying to get at, going after the who, what, when, why, and where of the subject.
- \* By *read* he means carefully reading for meaning, noting main points and key ideas.
- \* By *recite* he means stopping from time to time to recite to yourself from memory key ideas in the reading, rephrasing them in your own words.
- \* By *review* he means looking over the chapter later, after you have read it, to refresh your memory and help the ideas you have read stick.

Prof. Robinson's technique lays out the key processes you must go through to read successfully, even if you don't faithfully follow SQ3R. Whether you are reading a science textbook or a French novel, you should plan to scan it, question it, read it actively, rephrase its main ideas to yourself, and review it once you're finished. The most successful readers will read as if engaged in a one-on-one conversation, hearing the author out for a few sentences and then asking questions, clarifying claims or arguments, reviewing points that have been made. This is one of the reasons studying needs to be done in a quiet place without distractions -- you don't want your conversation with the author to be interrupted so you lose your train of thought.

Aids to memory while reading are legion, and different people thrive with different methods. The basic principle behind them all, however, is constant: stay intellectually engaged with the material. Perhaps the most durable aid to memory is notes taken while reading. It is also the most time-consuming. The idea is to take notes on main points, putting those points into your own words. The act of putting the material into your own words forces you to understand it; the act of writing it down reinforces your memory of it and distills it for study when you are preparing for a test.

A much more common aid these days is highlighting (or the old standby, underlining). Since most students own their books, defacing them is not a problem. Highlighting can be an effective tool, particularly in preparing the book for review later. But it can also be an effective means for shutting off half your mind while studying. Highlighting can allow you to note main points as you speed read without really thinking about them, without putting them into your own words for understanding, and without integrating them into the sense of the chapter or book as a whole. If you use highlighting, then, be sure also to write notes or questions in the margin, or at least review what you have highlighted before you go on to something else to be sure you have captured the gist of what you have read.

## **TAKING NOTES IN CLASS**

Research shows that of all forms of memory, memory for what we have heard (as opposed to having seen or read) is least effective. We tend to forget what we have heard easily, and quickly. For this reason, it is essential to take notes in your classes so as to capture what you'd otherwise forget.

### **Good note taking depends on good listening skills. To be a good listener in the classroom:**

1. Come to class prepared. Review your syllabus and notes so that you know what's planned.
2. Prepare to be interested, and concentrate. Boredom isn't a feature of classroom material; it is a feature of the student's attitude. Interest yourself in the material your professor is presenting. Involve yourself in what is being said.
3. Keep an open mind. Listen critically (that is, evaluate the merits of what is being said), but don't listen emotionally or dismissively. Try to take in everything whether you find it palatable or not; later, if you wish to take issue with what your professor or another student has said in a paper or on a test, you will have an objective record of it. If you are rejecting as you listen, you won't retain the details for a later rebuttal.
4. Attend to what is being said, not to how it's being said. Don't allow the professor's voice or mannerisms distract you from the point of his or her presentation or argument.

5. Fight distractions. Don't allow what is going on around you, or outside that window, to draw your attention away.
6. Listen actively. Sit up, lean forward, and engage the professor intellectually. You can think at about 4 times the rate he or she can speak, so use that advantage to hear nuances, weigh arguments, consider other points of view, assess conclusions. The more actively you listen, the more you'll take away from class.

**If you have good listening skills, good note taking skills should follow. Here are a few tips:**

1. Follow a recognizable pattern to organize your notes.
  - \* You might use an outline pattern, with indents, to show the relative importance and relationships between ideas.
  - \* Or you might use a chronological pattern (in a history class, for example), organizing material in an order of time.
  - \* Or you might use an enumeration pattern, organizing things on the basis of "three main points" of a lecturer's presentation, for example.Your choice will hinge both on how the material is organized as it is presented to you and on how it is easiest to record, but the important thing is to make sure you record it for your own use in an orderly way.
2. Write legibly. You want to be able to read your own notes fluidly. Make sure that what you have after class is intelligible.
3. Use a personal shorthand. There are a # of ways to speed up note taking. Rmv vowels from most words and you'll still recognize them. Use mathematical symbols to = words. If you practice, you'll be good @ making comprehensible notes in your own shorthand.
4. If it's on the chalkboard or whiteboard, it should be in your notes. Lecturers will give you several keys to the important material they are presenting. The unmistakable one is writing material on the chalkboard/whiteboard or projecting it on an overhead. Another is repetition. If you hear a word or phrase twice or more in the course of a lecture, it's probably worth recording. A third is emphasis. If the lecturer leans on a word or phrase heavily, it means he or she wants you to really hear it. Note all obvious keys of emphasis in selecting what to include in your notes.
5. Circle, star, or underline key points in your notes. Make sure the lecturer's emphases are so noted, somehow.
6. Leave room for expansion or clarification. You'll often want to fill in detail or clarification after class, when you're not trying to keep up with what's being said. Leave room to do that.
7. Listen attentively. It takes energy to stay with a lecture and take notes for an entire class. But it will pay off when you are reviewing for a test.
8. Capture ideas as well as facts, and record the lecturer's examples to support them. Make sure you have the overall sense of the lecture and enough of the lecturer's own words and examples to reconstruct his or her argument later.

## **PREPARING FOR AND TAKING EXAMS**

If you have managed your time well for study, have read and studied effectively, and have attended class and taken good notes, most of what you need will be at hand when you sit for an exam. No special techniques for test-taking will save the student who has not gone to class, read the material, or done much of any studying until the night before the test. By the same token, if you have been diligent all through the semester, you probably don't need many tricks to perform well.

Many students report symptoms of a malady called "test anxiety." Entering a testing situation thinking they are ready, they find their palms getting sweaty, their pulse quickening, and their breath growing short. When they sit down and look at the test, their minds go blank, and they can't get started, let alone excel.

Studies show that the best way to combat test anxiety is to be really ready and confident when you sit down for a test. Certainly, relaxation techniques, stretching, deep breaths, and positive imaging will help to calm you, but preparation will do more -- it will bring you through. And once you have tasted the confidence bred by proper preparation, it will be the only way you'll want to deal with test anxiety.

**Assuming you have practiced good study skills during the term, the following tips should help you prepare effectively for a test:**

- \* Stay caught up with your work. Don't find yourself reading something for the first time just before the test; that time is for review and memorization.
- \* Take notes, underline, or highlight your books. These techniques should allow you to review your books without completely rereading them.
- \* Schedule your time for review so that you aren't forced to do it all at the last minute. Cramming your review for a test is almost as bad as cramming first readings for a test.
- \* Clear up questions before the test. Ask your instructor or a classmate for help in identifying important material for the test and in clearing up subjects you don't understand. Also be sure to ask the instructor just what sort of test (objective, essay) will be given and what sorts of questions will be on it.
- \* Review class materials regularly. Regular review during the semester will reinforce your final review for the test.
- \* Use 3 X 5 cards in classes that require a lot of memorization. You don't want simply to recognize material you've seen before for some tests, you want to recall it without cues (your instructor will expect you to). For such memorization, there is nothing like 3 X 5 flashcards to help you imprint the material on your brain.
- \* Condense your notes onto briefer review sheets. This activity will draw your concentrated attention to the material that is most important. It will also serve as an active review.
- \* Review study questions or sample tests. If your instructor gives you study questions, or if you have sample tests over the same material you are studying, use them to "rehearse" for the test.
- \* Put together a study group shortly before the test. Especially if you have already reviewed, a study group can be a lot of help in anticipating what kind of questions will be asked and how they should be answered on a test.
- \* Work on your confidence in a last night tour through the material, then go to bed and get a good night's sleep. If you have prepared well all along, your last night before the test should be a final review, one in which you reinforce your confidence in how well you know the material. A good night's sleep will calm you and give you full access to your long-term memory (where the test material should now be) when you sit for the test.

If you are well-prepared, your test anxiety should be minimal. After all, you know this stuff!

**Here are some tips for test-taking, with a few special strategies for essay and objective exams:**

- \* Arrive early, find a good seat, and go over some major points in your mind before you receive the test. You'll feel calmer if you're not rushing or scrambling.
- \* When you receive the test, read the directions, slowly. Make sure you know what is being asked of you. Be deliberate, because at this stage, racing induces panic.
- \* Plan how you will use your time. Get a sense of how much time you have for each question, and stick to that.
- \* Find questions you consider easy and do them first. You'll develop confidence as you handle the questions you're ready for.

- \* Ask the instructor for clarification if you don't understand a question or a part of the instructions. Faculty are usually happy to explain anything on a test that is ambiguous to you, so long as your request comes before the test begins and doesn't solicit answers to actual test questions.
- \* Check the time periodically to see that you are using it wisely. Don't lose track and find you won't be able to finish a significant portion of the test.
- \* Check your work. Never leave the test early. Use any time you have left over to expand a thin answer or to check your work. You will almost certainly find, reviewing your work, that you can improve what you've written or correct an error.

**If the test you're taking is objective (e.g., multiple choice, true/false):**

- \* In most cases, answer all the questions, whether you're sure of them or not. These tests are usually scored on the number of correct answers. An unanswered question, then, is counted wrong. Even if there is a penalty for wrong answers, guess if you can narrow the correct answer down to two choices (except, of course, for true/false tests).
- \* Be careful how questions are worded. Look for negatively worded questions and qualifiers (e.g., "always/never") that are keys to the correct answer.
- \* Be careful with your time. It's easy to be stumped by a single question, fall behind, and fail to answer questions you are sure of. If you hit a question that stumps you, put a check alongside it and carry on -- you can return to it later if there's time.

**If the test you're taking is essay:**

- \* Read all the questions first, noting how much each counts, and plan your time accordingly. Essay tests require an overall strategy, and it should be decided at the beginning.
- \* Restate the question in your first sentence. This way, you'll be sure you understand what's being asked.
- \* Remember that all good essays include a thesis, arguments in support of the thesis, and evidence (examples, illustrations) in support of arguments. Make sure each of these elements is in your essay.
- \* State your points concisely, and provide examples. Instructors are experts at identifying filler, and filler will take up time you could be using to make points. Spend your time making points and backing them up.
- \* Leave room at the end of each question for additional material if there's time. Especially if your time budget forces you to move on before you've said all you want on a question, leave room for more if there is time at the end.

Remember, the keys to success are preparedness, confidence, and calm, and you will bring all these things with you to the test site if you've been studying properly all along.