

STUDY GUIDE FOR KALAT'S

**Includes Guide for  
Non-Native Speakers**

Introduction to  
**Psychology**

SIXTH EDITION

Pamela Brouillard

STUDY GUIDE FOR KALAT'S  
INTRODUCTION TO

# Psychology

SIXTH EDITION

Pamela Brouillard

*Texas A & M University,  
Corpus Christi*

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This study guide has been updated and revised to accompany the text *Introduction to Psychology, Sixth Edition* by James W. Kalat. The basic structure of the study guide has been reorganized from the previous edition and its content has been updated to reflect changes or additions to the new Kalat text. It does however, continue to retain content from the fifth edition, and I am indebted to the previous authors, Ruth H. Maki and William S. Maki, who provided the basis for my revision. The content in the Guide for Non-Native Speakers by Sally C. Gearhart has also been slightly revised, but the structure of the work remains essentially unchanged.

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*Pamela Brouillard*  
*June 2001*  
*Corpus Christi, Texas*



## How to Use This Study Guide

This study guide was developed to accompany Kalat's Introduction to Psychology, Sixth Edition. Each chapter is divided into four sections:

*Chapter Summary:* Presents the main points of each chapter in your textbook.

*Fill-In-The-Blank Key Terms:* Focuses on definitions of new terms and ideas.

*Short-Answer Essay Questions:* Asks you to identify and describe key concepts and ideas.

*Multiple Choice Practice Test:* Tests your overall knowledge of the material in the chapter.

Try to work through each section of the study guide after you have read the material in your textbook. If you have questions, try to follow up with your instructor or teaching assistant during class or office hours. Below are a few tips to help you begin studying. A more comprehensive guide for studying, developed by Maki and Maki, also follows.

Following a few of these simple guidelines will help to make your college experience more successful.

- Be enthusiastic! Psychology is a fascinating subject and this course is likely to be one of the most interesting you will ever take. Enjoy it!
- Set realistic goals for yourself. Starting college is an exciting and sometimes difficult experience. Try to discover what your abilities are as you settle into college life and adjust your personal goals to reflect them.
- Develop successful study habits.
  - Try to schedule your time across classes and activities.
  - Read the assigned material before class.
  - Take advantage of your study guide.
  - Don't wait until the last minute to prepare for assignments or exams.
- Go to class! Being on time, listening respectfully and asking questions are all part of the classroom experience. Learn to enjoy and profit from it.
  - Listen and learn.
  - Take notes (don't just highlight in your book).
  - Make friends and find other students to study with.
- Take care of yourself! Good learning depends on good mental and physical health. Don't neglect the essentials.

## **GETTING THE MOST OUT OF YOUR PSYCHOLOGY COURSE (AND COLLEGE)**

You are about to begin to study a fascinating subject--psychology. In some ways, you have been studying psychology for years. You have always been observing, predicting, and trying to control human behavior. Now, however, you are going to learn about how psychologists study behavior using scientific methods. Psychology is inherently an interesting topic, so you should be motivated to learn more about it. This introduction is designed to help you get the most out of your psychology course and out of your college experience.

### **BEFORE THE COURSE BEGINS**

#### **Start with a Positive Attitude**

What you believe can influence how well you do. In your text, you will read about an experiment by Greenwald, Spangenberg, Pratkanis, and Eskanazi (1991) in which students listened to tapes that were supposed to have subliminal (below threshold for perception) messages. The messages were about losing weight or about increasing self-esteem. The subliminal messages themselves had no effect, but students' expectancies did produce changes. Those students who thought that the tape should increase self-esteem did increase in self-esteem (even when the tapes contained no messages). So, thinking that they would be more self-confident made the students feel more self-confident.

#### **Set Difficult, but Realistic, Goals**

Expecting that you will do well in a course is the first step to doing well. But, thinking about doing well isn't enough. You need to produce a good study plan and stick to it to actually do well. Make a pronouncement at the beginning of the term that you will work as hard as possible to succeed in your courses. But, that's not enough. Set specific, difficult, but realistic, goals for each of your courses (getting all A's, a B average, or a C average--whatever is reasonable for you). In addition, set up a specific short-term goal for each test and assignment that you do for each course. Such goals will both help to increase your self-confidence and your performance (Locke and Latham, 1990). College instructors tend to give lower grades than high-school instructors, and the competition is much tougher. And yes, college instructors give Fs to students, even those who take all the tests (if, of course, they fail most of them). So, don't take success for granted. On the other hand, don't become discouraged. Set up realistic goals and work to meet them. Plan to reward yourself at the end of the term if you achieve your goal. The reward could be something like going on a camping trip to a favorite place, buying new clothes, or whatever might work to motivate you. Then, stick to your contingency plan. That is, give yourself the reward only if you meet your goal. Setting up smaller rewards for your short-term goals, such as getting a B on a test, is also a good idea.

#### **Look Through Your Textbook.**

You have already purchased your book, so you have accomplished the first step to succeeding in your introductory psychology course. Take a look at your text. Although you may think that you already know what psychology is, you probably don't have a good idea of what this course will be about (even if you took a course in high school). In college, psychology is generally taught as a scientific discipline. So, you will observe as you look through your text that there is a chapter on research methodology early in the book. That chapter is critical for you to understand

how psychological research is done and why it is important to do research in psychology. Start with an open mind; you are about to study behavior in a way that you never have before. Look at the various chapters in your book so that you can see the range of topics that it covers. Yes, there is biology in psychology; understanding the biological underpinnings of behavior is an important component of the area of psychology known as psychobiology. Other psychologists study learning, memory, development, and language. As you look at your text, you will discover that personality and mental disorders are covered toward the end of the book. You can understand those topics much better after you understand the biology of behavior, the principles of learning, and the development of behavior. So, read through the chapter Learning Objectives in your book to prepare yourself for the topics that you will study in the course. Knowing what is coming will make you better able to integrate and understand the topics.

### **Find Some Friends (or Make Some) Who Are Taking the Course**

One of the best ways to study is with a study group. Learning in a small group is a very effective way to learn. (Druckman & Bjork, 1994, Chapter 7). Such a group can force you to read the material and to understand it well enough to be able to present it to others. Four people is about the right number for your study group. Contact three other students and find a time once a week when you can meet for about 2 hours. Put this time into your schedule for the term and stick to it; plan to meet with your study group every week at the prearranged time. Make sure that you have serious students who are willing to spend the time both in and out of the study group to prepare for the course. Don't let anyone have a free ride. Everyone in the study group must be committed to learning as much as possible in the course.

### **Make a Practical Schedule**

At most universities, you are expected to spend about 2-3 hours a week studying for every 1 hour a week that you are in class. This means that you should study about 6-9 hours a week for a course that meets 3 hours a week. If you are taking five such courses, this translates into a "workweek" of 35-45 hours. Think of studying as your job. (If you have another job, think of studying as a second job.) Be sure that you are able to schedule enough hours to do the "job" that you are actually paying to do. Yes, college is different from other types of jobs in that you are paying to do it (or someone else is, if you are fortunate enough to have financial assistance). The fact that you are paying to be in college makes it doubly important that you take it seriously and do your studying "job" competently.

So before classes begin, set up a schedule that you are likely to be able to follow. Put in all the things that you must do at specific times--classes, the times when your study groups for various classes have agreed to meet, your other job for which you are paid (if you have one), meetings that you must attend, time for family obligations, social activities, and so on. Then, see where you can schedule blocks of time for study. Unlike high school, you will probably have lots of free time between classes during the day. **USE IT!** Don't look at those 2 hours between classes and assume that it is time to waste, or time to sit around and talk with friends. Assume that your psychology class meets 2 hours after another class 3 days a week. Schedule those 2 hours to go to the library and study for psychology on those 3 days. If you use those 2 hours to study for psychology 3 times a week, you have arranged for almost all the time that you need to study for the course. Add 2 hours for a study group for psychology, plus an hour to review one night a week, and you have

provided enough study time for one of your courses, psychology. Set up a similar schedule for your other courses. It is important that you set up a studying schedule **that will work for you**. If you always get hungry and eat lunch, don't put study time in the library from 11 to 1. You simply won't stick to it. Also, if you cannot sit still very long, don't schedule a block of 4 hours straight for study. Put a study place in your schedule and stick to it. For most students, going to your Union's dining center and planning to study will not work. Friends will join you, and soon you will be talking and not studying. So, before classes even begin, work up a schedule that fits your life-style, including both specific times for study and also places where you will study. Try your schedule for a while; if some part of it is not working, rearrange it and try the new schedule for a while. The important aspect of setting up such a schedule is that you end up studying at a constant rate. You will be "up" on the readings and you will not need to cram for tests.

If you've tried to set up a schedule based on 3 hours of studying per course and you simply could not fit in enough hours because of your other commitments, you should think about changing your course schedule. Don't take more courses than you have time for. It is better to take longer to get through college with good grades than either to fail your courses or to squeak through with a minimal GPA. Too easy a schedule can be a mistake also. So, before the term begins, you need to assess your situation accurately and decide whether you will have the time to handle the course schedule that you have set for yourself.

## **WHAT TO DO DURING CLASS**

### **Go to Class**

In most college courses, your instructor won't take attendance, and he or she may not even know whether you're there or not. Still, it is important to attend every class. One reason is that many instructors present material in class that is not in the textbook, and that material is often included on tests. If you miss classes, you miss important material, and you will miss more test questions. (And no, don't tell your instructor that you missed the last class, and ask her whether she "covered anything important." Of course she did; instructors always cover topics that they, at least, deem important.) Even if your instructor does not ask test questions that are directly related to lecture, but not covered in the book, he or she still probably uses the lecture to emphasize certain topics. There is a huge amount of material covered in your introductory psychology textbook. No one could possibly learn it all in one, or even two, academic terms. Thus, students can use the lecture to determine which topics the instructor finds most important (and probably most interesting). Those topics are likely to be overrepresented on tests relative to topics that your instructor did not discuss in class. You cannot know which specific topics will be emphasized on the test unless you attend every class and listen to what is being covered.

### **What to Do (and Not to Do) in the Classroom**

You should attend class in order to learn. Hearing material, as well as reading it, will help you to understand and remember it better. If this is why you are attending class, why sit in the back of the room where both hearing and seeing will be more difficult? The backs of large classrooms are often noisy with students talking and otherwise disrupting the class. So, avoid the back. You have taken the time to come to class (and you have paid for it!), so sit in the front and make the most of it. Most of the best students sit in the front and they interact with the instructor. Sitting in front and being an active learner will both help you to learn better and help make the class more interesting to you. Even in very large classes, instructors usually get to know a few students who sit near the front and who interact with them.



Don't sit with your friends if you will end up talking with them during class. You should have "talk with friends" time in your schedule, and the middle of class isn't the time. Talking in class distracts the instructor, distracts your fellow students (who have also paid to attend the course), and means that you get less out of the course. If sitting with your friends means talking with them, sit somewhere else. And don't go to class either to read the newspaper or to study for tests in other classes. If those are your goals, go somewhere else where the lecturer won't distract you, and you won't distract the lecturer.

So, you are in class, and you have chosen a seat near the front where you can both see and hear well. You are all ready to pay attention and learn all you can. What do you do in class?

### **Listen, and *Understand* What Is Being Said**

Listen carefully and ask questions if you do not understand what is being presented. If you are embarrassed to raise your hand in class, ask your instructor before or after class or during office hours. Or if you have a teaching assistant, find him or her during office hours. Another alternative is to write out your question and hand it to the instructor or leave it on the podium before the next class. Most instructors will make every effort to answer students' questions. Don't let material that is unclear go by--make every effort to understand it.

### **Take Notes**

Taking notes improves class performance, and taking notes and reviewing those notes helps even more. Students take better notes with more experience in college. Notes become more organized, more selective, and more accurate (Van Meter, Yokoi, & Pressley, 1994). Your notes should differ depending upon what you will need to know for tests. If your instructor will want you to know definitions on a multiple-choice or a matching test, then you need to take down more verbatim facts. If, however, concepts will be stressed either on multiple-choice or essay tests, then you will need to write more general concepts in your notes (Van Meter et al., 1994). Whatever the final purpose of your notes, never try to write down everything verbatim without thinking about it. Try to pick out important points. After you understand a point, write it in your own words (unless it's a definition and you will need to know it verbatim for the test). Go back over your notes soon after class and put comments on them. While the lecture is still fresh in your mind, fill in gaps that you missed and clarify points that are fuzzy in your notes. Try to add some other examples or apply the concepts to other situations, and jot those down in your comments. Later, your notes, plus comments written very soon after the lecture, will make a great source to review for your tests.

An example of a good set of notes with comments written on them is shown on p. x. The student put the line down the left side before class. The class notes were written on the right side. The purpose of the left column is to add comments after class. The printed comments in the left column were added after the lecture to clarify the notes.

### **Make Up Missed Classes**

If you have to miss class, get the notes from someone who takes good notes. (But do not miss class unless missing it is really necessary.) Don't assume that the material you missed won't be on the test; it surely will! Make an agreement in your study group that you will share notes with

each other (but only when one member has a good reason for missing class). Even getting notes from someone won't be as good as being there yourself. Notes are personalized with material that the notetaker thought was important and material that the notetaker did not know before (Van Meter et al., 1994). Therefore, looking at two sets of notes would be a good idea. Go through one set of notes and write out your own notes in your own words. Then look at the other set of notes and fill in things that were missing from the first set and write in clarifications for the first set. Put in question marks where you don't understand something and be sure to have that clarified either in your study group or by your instructor or your teaching assistant.

## GET THE MOST OUT OF YOUR STUDY TIME

The goal of studying is to understand and remember information so that it can be used at some later time: first, for tests in your course; later, as knowledge to help you better understand your experiences and solve real-world problems. If this broader goal is to be met, you need to understand material; simply memorizing terms and definitions is not enough. Most instructors will try to tap your understanding of material on tests. Understanding and applying material takes time, but the methods described below will make your studying more efficient and more effective than simply reading the textbook several times. As a student, your main job is to learn and apply information, so you should have already planned your time so that this can be accomplished on a regular basis, several times a week. Learning the material presented in your courses is a matter of getting information into memory and later getting it out. Chapter 7 of your textbook contains an entire chapter on memory processes, but those aspects that are specifically relevant to studying will be described below.

### Sample Notes for Improving Memory Lecture

<p>Date: Wednesday, Oct. 17</p> <p>Mnemonic means memory in Greek Also called peg system</p> <p>Need to be able to imagine thing you want to remember Imagery plus verbal code puts it into memory twice</p> <p>Originated by Greek speech-givers</p> <p>Can use rooms in home So, imagine what you want to buy in each place This is the retrieval plan</p>	<p><u>Improving Memory by Using Mnemonic Devices</u> Text:</p> <p>Chap.7</p> <p>1. Useful mnemonics</p> <p>A. Pegword</p> <p>How does it work?</p> <p>Uses words that rhyme with numbers (1 is a bun, 2 is a shoe)</p> <p>Make interacting image of rhyme and thing to be remembered</p> <p>Go through rhyme at retrieval, pulling out images</p> <p>Useful for remembering imageable things in order (up to 10)</p> <p>B. Method of loci (locations)</p> <p>How does it work?</p> <p>Uses well-learned locations along a route</p> <p>Make interacting image of location and thing to be remembered</p> <p>Imagine walking through locations at retrieval, pulling</p>
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<p>Like “Every good boy does fine”</p> <p>Need to watch that you don’t remember rhyme, but not real items</p> <p>Need to be able to imagine keyword</p> <p>Think of Russian word delo as jello Imagine a “cap race” with the leader changing often, for capricious Use for plant species in hierarchy- imagine angel for angiosperm</p> <p>A. and B. are the two main points about memory To remember well, you need to 1) get it in (encode) well 2) get it out (retrieve)</p>	<p>out images Useful for remembering imageable things in order (many)</p> <p>C. First-letter mnemonic How does it work? Take first letter of words to form a sentence or story  Use the sentence or story to retrieve the first letters Useful for memorizing in order (many things) May be difficult to get from first letter to term</p> <p>D. Keyword mnemonic How does it work? Turn unfamiliar term into English keyword that sounds similar Make an image of keyword and meaning of term Unfamiliar term should result in retrieval of keyword plus image When can it be used? Foreign language vocabulary  English vocabulary  Biological taxonomies</p> <p>2. Why do mnemonics work? A. They promote a deep level of processing  1. Many use visual images which forces one to think of meaning  2. Most tie new material to already known material B. They give a good retrieval scheme to pull memory out</p>
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### Memory is Dependent Upon a High Level of Learning and Good Retrieval Cues

Research on memory has shown that the amount of time that information can be retained in memory is directly related to the level of learning. *Information that is overlearned* (learned perfectly and then studied beyond that point) *is remembered longer* than information that is just barely learned (Krueger, 1929). One way to ensure that material is learned well is to *process the information to a deep or meaningful level* ( Craik & Tulving, 1975). Material that you thought of

only in terms of surface structure (e.g., what do the words sound like?) is not as well remembered as information that you thought of in terms of its meaning (how is this concept similar to one that I already know?). Students often repeat a definition over and over to themselves with the idea that this will strengthen the concept in memory. Memorizing a definition word for word is unimportant; being able to use the word is much more important. Furthermore, experimental studies have shown that mere repetition does not increase the likelihood that the material will be recalled later. Craik and Watkins (1973) showed that words that had been repeated over and over for 12 seconds or more were not remembered any better than words that had been repeated for only 1 second. On the other hand, *repetition that involves thinking about the meaning of material and connecting it with information that is already known is effective in increasing memory.*

### Effective Ways of Producing High Levels of Learning

*Material that is understood is remembered better* than material that is not understood (Bransford & Johnson, 1973). Understanding material means that you have tied it into concepts that you already know, and this is one of the ways to produce a meaningful memory. If you do not understand material, don't simply try to memorize it by repetition. This is not effective. It is almost certain that the material you do not understand will appear on the test, so spend the time to ask someone to help you understand it. A good test of understanding is to try to apply the material to real-life situations or to come up with some examples of your own.

*Making images of concepts can help memory.* Images may help because they result in both a visual and a verbal memory code (Paivio, Walsh, & Bons, 1994). Try to visualize concepts whenever possible! Making bizarre images can also help. Use bizarreness sparingly, however, because bizarre images are only remembered better when they are mixed in with common images (McDaniel, Einstein, DeLosh, May, & Brady, 1995) and when you will have to remember without many cues on your test (Riefer & LaMay, 1998).

*Generating information can increase memory.* Jacoby (1978) showed that generating answers, even if they were simple, led to better memory for the answers than simply reading them. Foos, Mora, and Tkacz (1994) found that generating outlines, questions, and answers led to better test performance than reading instructor-prepared materials. However, make sure your questions and outlines hit most of the main points because generating helps only on test questions directly related to what you generate. Anything that you can do to produce material rather than being a passive reader should help (Linden & Wittrock, 1981).

*Repetitions of material should be distributed, not massed.* Many experiments, using many different types of materials, have shown that repeating material immediately after the first presentation (massed presentation) does little to help memory. *Repeating material after other material has been presented* (distributed presentation) *does help memory* (e.g., Melton, 1970). Studying once a day for a week will lead to better memory later than studying the same material seven times during a single day (Bahrnick Bahrnick, Bahrnick, & Bahrnick, 1993). For example, reading your text twice with 24 hours between the first reading and the rereading will produce better memory than reading it twice with no time between the readings (Krug, Davis, & Glover, 1990). So, a good plan would be to read a chapter before your instructor is going to lecture on it and then to reread it 2-3 days later, after hearing the lecture. Plan your study time so that you can take advantage of the effects of distributed study. Don't put off studying until the last minute so that all



you can do is massed study (otherwise known as cramming). It won't be very effective in the long run.

### Retrieval Cues are Important to Get Information Out of Memory

*Practice retrieving rather than spending all your time trying to input material into memory.* Material that has been tested is remembered longer than material that wasn't tested (Runquist, 1983). Furthermore, testing yourself in a distributed way is also helpful. Gradually increasing the intervals at which you test yourself is better than always testing yourself after the same amount of time. For example, you might study material and then test yourself on it after one hour, then after three more hours, and then after a day has passed (Cull, Shaughnessy, & Zechmeister, 1996).

*Retrieval is best when the conditions of testing match the conditions of learning* (Tulving & Thomson, 1973). No matter how well you know material, you must ultimately show your knowledge by pulling the material out of memory. Simply getting it into memory is not enough; retrieval is also necessary. Many experiments have shown that if you think of a concept in one way while learning it, you will need to think of it in the same way when your memory is tested. Otherwise, you may not be able to remember it. If you are going to have essay tests, plan how you would answer a question. Learn a series of key words that will help you to recall each point. You might find that a mnemonic system, such as the method of loci described in Chapter 7, could be helpful. If you are going to take a multiple-choice test, try to think of the concept in as many different ways as possible. *The more ways that you store a concept in memory, the more likely that your understanding will match one of the alternatives on the test.* Nitsch (1977/1979) has shown that people can better recognize a concept that is tested in a new way if they have learned with varied examples. So, try to think of as many different examples and ways of understanding a concept as you can.

*Similar physical conditions at encoding and retrieval help.* The match between study and test is also true for environmental conditions. There is some evidence that studying and being tested in the same room might help (Smith, Glenberg, & Bjork, 1978). However, don't worry if your tests are in a different place from your lectures. Sauflely, Otaka, and Bavaresco (1985) found that students who took tests in rooms that were different from their classrooms did not do any worse than students who took tests in their classrooms. If you learn material well and in several different environments, you will probably be able to remember the material in any setting. However, there is some interesting recent evidence that suggests that the music you listen to may affect your ability to learn and remember on tests. Balch, Bowman, and Mohler (1992) found that students who read text material while listening to music that had words remembered less of what they read than students who either listened to no music or who listened to music without words. They also found that students who listened to either classical music or jazz while studying did better on tests when listening to that same music during the tests. Your instructor probably won't want you to listen to tape recorded music during your tests (he or she may become suspicious about what you're listening to if you have an ear phone in your ear). So, your best bet is to study without music. This is particularly true if you are introverted. Music is distracting to introverts and listening while reading results in poorer memory for material (Furnham & Bradley, 1997). Instead of listening to music

while studying, use music as a reward. After you have studied for an hour with no music, take a 15-minute music and refreshment break and listen to your favorite music, undisturbed by studying.

### **Using Your Study Group**

Each week your study group should meet for about 2 hours; that time should be used for studying, not visiting. (You may plan to all go out afterward for an hour to visit, but visiting should be avoided during the study-group time itself.) Groups will need to work out their own study procedures, but here is a schedule that will make the group efficient in studying.

#### Last Week's Material

1. Each member should have written questions over a part of the material as assigned at the last meeting. During the week, group members should write answers to all question. The study session should begin by trading the written answers to questions and having everyone "grade" someone else's questions. The textbook and notes should be used to ensure accurate grading.

2. A discussion about any difficult concepts or frequently missed questions should follow until everyone understands each answer.

#### This Week's Material

3. Each group member will have been assigned a topic to "teach" (perhaps a section from the chapter, or from a recent lecture). How you break up the material may depend upon how much the instructor takes out of the book on tests and how much he or she takes out of lecture.

4. Each group member should "teach" the other members his or her assigned material. All group members should feel free both to ask questions and to clarify concepts as each person teaches.

#### Next Week's Assignments

5. Everyone should have looked at what is coming next week and have an idea about what topic he or she would like to teach next. Part of the assignment will be to write about five questions on the topic; the other part of the assignment will be to prepare to teach it. Study groups may find other procedures that work for them. However, using the group to provide tests for each other is an essential aspect of the study plan. Use of the study group is incorporated into the SPAR system described below

### **SPAR: A Method of Studying**

The SPAR method is a study method that should help you to incorporate the guidelines described above. It was developed by Rusche (1984) and is similar to the SQ3R method (presented in Chapter 7), but it is easier to remember the key words that go with SPAR than with SQ3R (people forget the three Rs). **SPAR** stands for **S**urvey, **P**rocess meaningfully, **A**sk questions, and **R**eview and self-test. Application of this method, with your textbook and study guide, lecture material, and study group, will be described.

#### **Survey**

The main goal here is to ask "What am I to learn?" Having a general idea of the topics will help you to tie the material in with concepts that you already know.

### Textbook and Study Guide

First, look at the Outline of the chapter in your book. This gives you an overview of the contents of the chapter. Next, read through the introductory material in the chapter to give you some idea about how the ideas presented in the chapter are relevant in everyday life. At the beginning of each section, there are questions that will be answered in the section. Think about how you would answer them before reading the chapter. There is a Summary at the end of each section. Read each point in the summary and think about what type of information would be needed to understand that point. Finally, read the Learning Objectives in the study guide for a more detailed idea about the specific concepts to be learned.

### Lecture

Look at your course outline or syllabus so you know what your instructor will cover each day. Read the relevant material in your textbook before going to class so that you will have the background for the topic.

### Study Group

At the end of each weekly meeting, assignments of topics should be made for the next week. Looking over the upcoming material in order to agree on topic assignments will also serve the Survey function in SPAR. Each member should be assigned a specific topic to teach the next week and also to emphasize in writing questions.

### **Process Meaningfully**

The main goal here is to understand the material in a meaningful way, that is, to process it deeply and produce a high level of learning.

### Textbook and Study Guide

Read the chapter carefully. Do your first reading of the chapter before your instructor lectures on the topic. Stop and think about what you have read at the end of each section. Don't just try to recite what is in each section-- understanding is critical. Try to relate material to what you already know. Think of other examples of the concepts. If you can form visual images of the concepts, do so. Try to answer all of the questions that are asked in the sections of each chapter. If your instructor has assigned more than one section, it would probably be better to work with only one section at a time.

### Lecture

Go back over your notes soon after class and put comments in the left column. While the lecture is still fresh in your mind, fill in gaps that you missed and clarify points that are fuzzy in your notes. Try to add some other examples or apply the concepts to other situations, and jot those down in your comments. See the sample notes given earlier.

### Study Group

One of the best ways to learn is to teach others. Presenting material to other individuals forces one to process it meaningfully. Each member of the study group will need to process some of the material very meaningfully in order to "teach" the other members. "Knowing" something requires far less processing than "teaching" something. However, everyone should read all of the material and process it meaningfully as described above.

## Ask Questions

The goal here is to anticipate the types of questions that you will be asked later, so you will have practice in picking out the main concepts.

## Textbook and Study Guide

The study guide will make this portion of SPAR easy because the questions are provided. Complete the Multiple Choice portion of the study guide soon after reading the relevant section. The questions are similar to those that are likely to appear on a multiple-choice test. Circle the answer to each question without looking at your text. Check your answer. If your answer is wrong, write the correct answer in the blank beneath the question. If you want to remember the concept better, it is important that you understand the reason why a particular question is right or wrong, rather than simply reading it in the study guide. Also, look at why the other alternatives are wrong to be sure that you understand the concepts tested in the question. If you still do not understand, reread the section of text that is associated with the objective tested in the question. If that does not help, ask your instructor or teaching assistant to explain the concept to you.

## Lecture

Go back over your lecture notes. Write questions of the type given under the Short-Answer Essay section of your study guide. Try to write one question for each main point discussed in lecture. It is important that you write the questions, so you can use them later. Be sure that your questions are relevant to the material and that they are not too general, but also not too specific. Examples of good questions over the notes on memory are given below.

## **Sample Questions from Memory Improvement Lecture**

1. How does the pegword system work? How is it similar to and different from the Method of Loci?
2. Describe how the keyword system can be used to remember definitions for abstract words?
3. How do all mnemonic systems encourage a deep level of processing?
4. In what ways do mnemonic systems work as effective retrieval schemes?

## Study Group

Here's where the study group really comes in. You can answer not only your own questions, but those written by the other members of your group. Each member of the group should be responsible for a specific topic. Part of the responsibility should be to write at least five questions



on that topic that could be answered by the other group members. Short-answer questions are probably best. Because you have the study guide with questions covering text material, you should mostly write questions that focus on lecture material. After each group member has "taught" his or her topic, the questions prepared by group members should be passed out. Actually, simply preparing the written questions is a great way to learn.

### **Review and Self-Test**

The main goal here is to test your memory and understanding of the material by answering questions of the type that will appear on a test.

#### Textbook and Study Guide

Presumably you have already read all of the assigned sections in a chapter and completed all of the sections in the study guide. Wait at least 24 hours before going on. This will allow you to forget material that was not processed meaningfully enough. It is important that you find out which material was not well learned before the actual test in your course. Now, return to the study guide. Write out answers to the short-answer essay questions for the chapter. The questions require retrieval from memory with few cues, so that your level of learning can be tested. If you can write answers under these conditions, you know the material well enough to do well on any kind of test. The study guide provides answers to these questions so you can check yourself. It also provides the page in the textbook where the answer appears. Don't simply read the answers. You know by now that generating answers is important for later memory. Once you have checked your answer, keep trying to answer the questions yourself until you can produce a correct answer from memory without the textbook or your notes. Now take the posttest and check your answers using the page references to look up errors.

#### Lecture

Write answers to the questions that you wrote over lecture material. Check your answers against your notes. If you cannot produce a good answer to a question, get some help. Once you have a good answer to each question, keep trying to produce that answer from memory without using your notes or text.

#### Study Group

During the week, each group member should write answers to the questions prepared by other group members, as well as those he or she wrote, without looking at the book or notes. This should be done during the week between your meetings. At the beginning of the next meeting, you can exchange your answers, and everyone can "grade" someone else's. The group should discuss errors and make sure that everyone understands the concepts, especially those that were missed on the "test."

### **PREPARING FOR TESTS**

If you have followed all of the above advice, you will be almost ready for the test when it comes. There should be no need to do massive cramming on the night before the test. However, you should add an extra hour or two to review the material. Use the materials produced in your study group. Take out those short-answer questions that the members of your group wrote and write answers again. Write the answers to the short-answer questions in the study guide again. Spend some time scoring your answers and also look back at your original answers. What have you