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ABSTRACT

This study skills curriculum is part of a "pipeline" program designed to recruit, matriculate, and graduate educationally disadvantaged students at the University of Medicine and Dentistry of New Jersey-Robert Wood Johnson Medical School (UMDNJ-RWJMS). It is an integral part of the Biomedical Careers Program (BCP) and the Science Enrichment Program (SEP) and offers diagnostic evaluation, individual study skills assistance, learning strategies sessions, and test-tasking strategies. The BCP is an eight-week summer program combining science course work, laboratories, and study skills instruction; it is offered to underrepresented minority and economically disadvantaged undergraduate students who wish to pursue careers in health fields. The Science Enrichment Program (SEP) is a six-week summer program for high school juniors or seniors who are interested in science or healthcare careers; it is anticipated that SEP enrollees would later be eligible for the BCP. Following the Introduction, the first sections of the text present an overview and the detailed curriculum for weeks 1-6 of the SEP. The next sections present overviews and curricula for the BCP level 1 and level 2 programs. Three appendixes contain study skills test taking materials for the SEP and BCP level 1 and level 2 programs. (RH)

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A STUDY SKILLS CURRICULUM FOR PIPELINE PROGRAMS

Created at UMDNJ - Robert Wood Johnson Medical School

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INTRODUCTION

This study skills curriculum was designed for pipeline programs at the University of Medicine and Dentistry of New Jersey-Robert Wood Johnson Medical School (UMDNJ-RWJMS) and will be a useful resource when designing study skills courses for high school and college students. UMDNJ-RWJMS has been a national leader in recruiting, matriculating, and graduating educationally disadvantaged students. The Science Enrichment Program (SEP) for high school students and the Biomedical Careers Program (BCP) for college students have played important roles in these efforts. The BCP program was established over 20 years ago to provide preliminary education and facilitation of entry services to underrepresented minority and economically disadvantaged undergraduate students who wished to pursue careers in health fields. Since its inception, the BCP has served over 750 students. The SEP, a newer program established in 1998, was designed to extend the pipeline to high school students who would later be eligible for BCP and for entering the health professions. The SEP has already enrolled approximately 60 students. Both the SEP and the BCP have been partially funded with grants from the U.S. Department of Health and Human Services Health Careers Opportunity Program.

Biomedical Careers Program (BCP) at UMDNJ-RWJMS

The BCP is an eight week summer program consisting of three levels of study, all of which combine science course work, laboratories, instruction in study skills and test taking, and career information and counseling. BCP Level I students are required to have completed one year of college including a semester of introductory level biology and a semester of introductory level math. The BCP Level I summer program consists of two science courses: Introduction to Microbiology (lecture and lab) and Introduction to Organic Chemistry. A study strategies course is integrated with the science courses. A test taking course teaches strategies for improving performance on verbal sections of standardized tests. BCP Level II students are required to have completed at least two

semesters of general biology and one semester of college math. The Level II summer program consists of two science courses: either Biochemistry and Microbial Physiology Lab or Introduction to Genetics and Genetics Lab, and Introduction to Organic Chemistry or Science Review for the Medical College Admission Test (MCAT.) A study strategies course is integrated with the science courses. A test taking component teaches strategies for improving performance on the Verbal Reasoning and Writing Sample subtests of the Medical College Admissions Test (MCAT). Students in BCP Level III have completed nearly all of the pre-professional science requirements. Students participate in research three days a week, take an Immunology course, and participate in MCAT Science Review. There is a test-taking component in BCP Level III that closely mirrors the material presented in BCP Level II. Therefore, it is not included in this document.

Science Enrichment Program (SEP) at UMDNJ-RWJMS

The SEP is a six week summer program for high school students entering their junior or senior year and interested in careers in science or healthcare. The program includes college level courses and tutorials as follows: Introduction to College English, Introduction to Statistics, Biology, and Biology Lab. A study strategies course is integrated with the science courses. A test taking component teaches strategies for improving performance on the verbal sections of the Scholastic Aptitude Test (SAT). Students also have the opportunity to work on a group research project, to be involved with computer research and career exploration.

Study Skills Curriculum for Pipeline Programs (SSCPP)

The SSCPP described in this document has evolved to be an integral part of both the BCP and SEP programs. The curriculum was developed and implemented by medical school faculty employed in the Cognitive Skills Program (CSP). Some changes are made each year to meet the needs of the students and faculty. During the academic year, the CSP plays a major role in providing academic support to medical, physician

assistant, and graduate students in the sciences. During the summer months, instruction is provided to students in the pipeline programs with the following two purposes: (1) to improve learning skills that will enhance performance in summer science courses and in subsequent high school and/or college courses and, ultimately, in professional school and (2) to address test-taking strategies, with a particular focus on skills required to do well on the verbal portions of standardized tests, including the Scholastic Aptitude Test (SAT), Verbal Reasoning and Writing Sample subtests of the Medical College Admission Test (MCAT), and other admissions exams e.g. the Dental Admission Test (DAT) and the Graduate Record Exam (GRE). The components of the SSCPP are as follows:

1. **Diagnostic evaluation**: During the first week of each pipeline program diagnostic tests, e.g. the *Nelson-Denny Reading Assessment* and the *Learning and Study Strategies Inventory (LASSI- HS),* are administered to all participants to provide information about individual performance. Results of the evaluation are discussed with each participant and goals are set for the program.

2. **Individual study skills assistance**: Each student meets individually with a Cognitive Skills instructor to follow-up on identified problems and to achieve self-determined learning goals.

3. **Learning strategies sessions**: Instruction in study strategies is integrated with the content of the science courses in which students are enrolled. The Cognitive Skills instructor is familiar with both the subject matter (though not a science expert) and the science course instructor's expectations for the students.

4. **Test-taking strategies**: Strategies for improving verbal sections of the SAT and other standardized tests are taught to SEP and BCP Level I students. BCP Level II and Level III students are taught strategies more specific for the Verbal Reasoning and Writing Sample subtests of the Medical College Admissions Test, and other closely

related tests, e.g., the Dental Admissions Test.

Rationale

The instructional goals and objectives conveyed to students in group sessions and in individual consultation are based on principles of learning grounded in the research findings of cognitive and educational psychology. The following are most applicable:

1. The goal of instruction is to promote independent, self-directed learning that continues across the life span. Self-regulated learners are those who are metacognitively, motivationally, and behaviorally active participants in their own learning[1], and who exert executive control over the strategies they employ.[2] Effective independent learners selectively use a wide range of learning processes and strategies (e.g., planning, implementing, monitoring and evaluating a plan of action) and employ these strategies in response to the requirements of the various learning tasks to meet specific learning goals.[2,3,4] The self-directed learner is one who makes decisions about what to learn, what resources and learning strategies to use, and how much time to spend in each learning pursuit.

2. Students are active, constructive learners, not passive recipients of information. The active learner is one who masters material deliberately, synthesizes material, compares and contrasts concepts and facts, and makes predictions. The active learner asks questions such as, "What do I know about this and how does it all fit together? What else do I need to know, and what is the most efficient way to learn it? What do I expect to learn next? What is the best use of my time right now?" The active learner engages in self monitoring and maintains awareness of everything that affects learning.

3. Learning with understanding is a generative process in which students reformulate information to achieve deeper meaning.

4. Instruction in efficient cognitive processing strategies and self-regulatory skill can be effective in increasing students' control of their learning. Learners who are active, independent, and self regulated are more successful in their academic performance and obtain greater enjoyment of the learning experience.[5,6,7]

The Learning Process: Acquisition, Maintenance, Proficiency

The framework for instruction in the SSCPP is grounded in a cognitive model of learning which conceptualizes learning as a process. The model is adapted from Nelson and Narens' metamemory framework[8], and is comprised of three stages: Acquisition (understanding information), Maintenance (remembering information), and Proficiency (recalling information). Knowledge about the learning process and effective strategies associated with each form the framework for this curriculum. Learning strategies are addressed as follows:

Stage 1 Acquisition (Understanding)

- Enhancing vocabulary development and reading comprehension skills
- Previewing skills for lectures and content reading
- Taking notes
- Reviewing and Clarifying information

Stage 2 Maintenance (Remembering)

- Reformatting notes
- Cumulative review and spaced practice
- Memory strategies

Stage 3 Proficiency (Recalling)

- Developing study plans
- Using self-assessment and error analysis to guide study
- Strategies for taking tests

Other topics addressed in the SSCPP are effective time management skills, identifying and managing stress, and applying problem-solving skills in science courses.

Components

The components of the SSCPP are arranged as follows: Science Enrichment Program, Biomedical Careers Program-Level I, and Biomedical Careers Program-Level II. Each curricular component begins with an Overview Chart which indicates the duration of

the program, time devoted to group instruction and individual consultation, and student eligibility requirements (prerequisites). Course goals and information about student and course evaluations are also included. Weekly plans for both the study strategies and test taking sessions include the Agenda for Instruction, the Format of Instruction and Instructional Activities, and a list of Materials. Materials developed by Cognitive Skills Program faculty are included in Appendices A (SEP), B (BCP- Level I), and C (BCP-Level II).

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Science Enrichment Program

DURATION	GROUP INSTRUCTIONAL TIME	INDIVIDUAL CONSULTATION	PREREQUISITES
Six-week summer course	Eleven hours Instruction is divided into two 1 hour classes A. Study Strategies for the Sciences B. Test Taking: Strategies for improving verbal sections of the SAT	Every student meets with a Cognitive Skills Instructor at least twice during the program.	Students who have completed one or two years of high school

COURSE GOALS	STUDENT EVALUATION	COURSE EVALUATION
A. Study Strategies 1. Students will increase awareness of the effectiveness of current study practices 2. Students will expand repertoire of study strategies 3. Students' will increase resources for reading and time spent reading each day 4. Students will use more effective study strategies to enhance learning in science courses **B. Test-Taking** 1 Students will assess their strengths and weaknesses in reading comprehension and writing skills. 2. Students will practice skills needed for improving scores on verbal sections of the SAT.	This grade is a component of the grade students receive for the summer program. For the Cognitive Skills component, students are evaluated on attendance, punctuality, class participation, submission of assignments and faculty observation of how well new strategies are incorporated into subsequent work.	Students complete a formal course evaluation questionnaire which is included in Appendix A.

Science Enrichment Program: WEEK 1

	AGENDA FOR INSTRUCTION	FORMAT OF INSTRUCTION AND ACTIVITIES	MATERIALS[1]
STUDY STRATEGIES	1. Get acquainted and establish course goals and objectives for group sessions and individual consultations 2. Introduce Reading Log activity to encourage students to increase quantity and scope of reading 3. Assess current study strategies	1. Didactic • Course requirements, format, grading • Students schedule individual appointment with instructor 2. Didactic Goal of Reading Log assignment 3. Group Activity • Students complete standardized study strategies inventory (LASSI-HS) **Assignment:** Maintain Reading Log	1.• Course Syllabus • Overheads 2. Reading Log Form 3.• Learning and Study Strategies Inventory – High School Version (LASSI-HS) (1990). Clearwater, FL: H & H Publishing Company
TEST TAKING	No class is held during week 1 of the program.		

[1] See Appendix A for materials that have been created by Cognitive Skills Program faculty

Science Enrichment Program: WEEK 2

	AGENDA FOR INSTRUCTION	FORMAT OF INSTRUCTION AND ACTIVITIES	MATERIALS[1]
STUDY STRATEGIES	1. Describe the learning process: Acquisition, Maintenance, and Proficiency; Active learning; Self-monitoring. 2. Enhance awareness of current reading habits. 3. Acquisition: Describe and model the use of effective strategies for acquisition of information from class.	1. Didactic: • Cognitive model of learning; Stages of learning; Acquisition, Maintenance and Proficiency; Model of active learner; Self-monitoring 2. Group Activity: Students complete reading questionnaire 3. DidacticDiscussion: Acquisition Strategies • Before class – previewing strategies • During class – maintaining attention; identifying important ideas; note-taking • After class – strategies for reformatting and reviewing notes; cumulative review Group Activity • Students are asked to preview material for next science class and then engage in discussion about strategies used. **Assignment:** Maintain Reading Log	1. Overheads 2. Reading Questionnaire 3. • Overheads • Texts from science courses Reading Log Form
TEST TAKING	1. Establish course goals and objectives. 2. Assess reading comprehension and vocabulary skills.	1. Didactic: Course requirements, format, grading 2. Group Activity: Students complete standardized reading test	1. Course syllabus 2. Gates-MacGinitie Reading Tests: Level 10/12 (1989). Itasca, IL: Riverside Publishing Company.

[1] See Appendix A for materials that have been created by Cognitive Skills Program faculty

Science Enrichment Program: WEEK 3

	AGENDA FOR INSTRUCTION	FORMAT OF INSTRUCTION AND ACTIVITIES	MATERIALS[1]
STUDY STRATEGIES	1. Describe and model effective strategies for acquisition of information from science textbooks, including critical thinking during reading 2. Describe and model effective note-taking strategies for learning and remembering	1. Didactic: Effective strategies for textbook reading – Previewing; Reviewing; Focused reading; Review reading sources from Reading Logs. Group Activity: Instructor guides students in reading section of science course text. 2. Didactic: Note-taking strategies for learning and remembering; Note-taking formats 3. **Assignment:** • Maintain Reading Log • Students are asked to take notes from class and/or text utilizing one or more note-taking formats and be prepared to discuss usefulness in next class.	1.• Overheads • Texts from courses 2. Overheads 3. Reading Log Form
TEST TAKING	1. Provide feedback on Gates-MacGinitie Reading Test 2. Provide general information on the SAT ; model and demonstrate test taking strategies	1. Didactic: Identify strengths and weaknesses in reading skills. 2. Didactic: Introduce the SAT; Test taking strategies. Group Activity: Instructor guides students through test taking/decision making strategies.	1. 10 Real SATs. (1997) New York: College Entrance Examination Board. Chapters 1 & 2, pp. 1-19. 2. 10 Real SATs, p.18

[1] See Appendix A for materials that have been created by Cognitive Skills Program faculty

Science Enrichment Program: WEEK 4

	AGENDA FOR INSTRUCTION	FORMAT OF INSTRUCTION AND ACTIVITIES	MATERIALS[1]
STUDY STRATEGIES	1. Model and encourage students use of maintenance strategies	1. Didactic: Strategies for retaining and retrieving information Group Activity/Discussion: Discuss usefulness of note-Taking exercise; students participate in memory Strategies exercise	1. • Overheads • Memory exercises from Bransford, J.D. (1979) Human Cognitive: Learning, Understanding and Remembering. Belmont, CA: Wadsworth Publishing Co.
	2. Describe and model effective methods of reformatting material	2. Didactic: Reformatting material Group Activity: • Students reformat a section of notes from a previous class for use as a study aid	
		3. **Assignment:** • Maintain Reading Log • Ask students to reformat a set of notes to be submitted to instructor	3. Reading Log Form
TEST TAKING	1. Describe verbal section of SAT	1. Didactic: Strategies for tackling the questions; building vocabulary skills	1. 10 Real SATs, Chapters 4 & 7
	2. Describe and model reading strategies	2. Didactic: Strategies for critical reading passages Individual Activity: Students read critical reading passage and answer questions Group Activity: Discuss answers and identify source of evidence in passage.	2. 10 Real SATs, p. 76 3. 10 Real SATs, p.90

[1] See Appendix A for materials that have been created by Cognitive Skills Program faculty

Science Enrichment Program: WEEK 5

	AGENDA FOR INSTRUCTION	FORMAT OF INSTRUCTION AND ACTIVITIES	MATERIALS[1]
STUDY STRATEGIES	1. Discuss the utility for a study plan and model a method of developing one.	1. Didactic: Strategies to assess and achieve proficiency-Making a study plan; Assessing proficiency In-class activity: Students prepare a test preparation schedule.	1. • Overheads • Blank schedules
	2. Test Taking Strategies for multiple choice, true/false, and essay exams; opportunities to practice test-taking strategies	2. Didactic: Test-Taking strategies Group Activity • Students are asked to write 3 questions relating to science course material, exchange questions with a classmate for answers, and check for accuracy.	2. Test-Taking Strategies
		3. **Assignment:** Maintain Reading Log	3. Reading Log Form
TEST TAKING	1. Describe and model strategies for sentence completion. 2. Provide opportunity for students to implement and practice strategies.	1. Didactic: Strategies for sentence completion 2. Individual Activity: Students complete practice sentences Group Activity: Students discuss answers and describe thought processes	1. 10 Real SATs, pp. 31-47 2. 10 Real SATs, p. 40
	3. Describe and model strategies for analogies. 4. Provide opportunity for students to implement and practice strategies.	3. Didactic: Strategies for sentence completion 4. Individual Activity: Students complete practice sentences Group Activity: Students discuss answers and describe thought processes.	3. 10 Real SATs, pp. 51-66 4. 10 Real SATs, p. 58

[1] See Appendix A for materials that have been created by Cognitive Skills Program faculty

Science Enrichment Program: WEEK 6

	AGENDA FOR INSTRUCTION	FORMAT OF INSTRUCTION AND ACTIVITIES	MATERIALS[1]
STUDY STRATEGIES	1. Assist students in developing effective time management and study planning skills 2. Increase awareness of stressors in students' lives and provide stress management strategies	1. Didactic & Group Activity: Efficient use of time - Time management strategies; students create study plans Group Activity: Students critique time management scenarios and offer suggestions. 2. Didactic and Group Activity • Strategies to reduce stress • Students participate in relaxation exercise	1. • Overheads • Blank schedules • Time Management Scenarios 2. Instructor-developed relaxation exercise
TEST TAKING	1. Provide opportunity for students to take a complete verbal section of SAT 2. Course evaluation	1. Group Activity: Students complete a 30 minute verbal section Individual Activity: Students score verbal section and identify strengths and weaknesses 2. Students complete course evaluation	1. 10 Real SATs, Chapter 8, pp. 96-102 2. Course Evaluation Form

[1] See Appendix A for materials that have been created by Cognitive Skills Program faculty

A Study Skills/Test Taking Curriculum: Biomedical Careers Program: Level I

Overview

DURATION	GROUP INSTRUCTIONAL TIME	INDIVIDUAL CONSULTATION	ELIGIBLE STUDENTS
Seven-week summer course	Twenty-one hours Instruction is divided into two 1 ½ hour classes per week. A. Study Strategies for the Sciences B. Test Taking: Strategies for improving verbal skills on standardized tests	Every student meets with a Cognitive Skills Instructor at least twice during the program.	College undergraduate students who have completed one year of college, including one semester of introductory biology and one semester of college math.

COURSE GOALS	STUDENT EVALUATION	COURSE EVALUATION
A. Study Strategies: 1. Students will increase awareness of the effectiveness of current reading and study practices for learning in science courses 2. Students will expand their repertoire of reading and study strategies 3. Students will apply more effective study strategies to increase competency on exams **B. Test-Taking:** 1 Students will assess their strengths and weaknesses in reading comprehension and writing skills 2 Students will practice skills needed for improving scores on verbal sections (reading and writing) of standardized tests 3 Students will develop a plan and practice skills to improve scores on verbal sections of standardized tests	This grade is a component of the grade students receive for the BCP program. For the Cognitive Skills component, students are evaluated on attendance, punctuality, class participation, submission of assignments and faculty observation of how well new strategies are incorporated into subsequent work.	Students complete a course evaluation questionnaire which is included in Appendix B.

Biomedical Careers Program Level I: WEEK 1

	AGENDA FOR INSTRUCTION	FORMAT OF INSTRUCTION AND ACTIVITIES	MATERIALS[1]
STUDY STRATEGIES	1. Get acquainted and establish course goals and objectives for group sessions and individual consultations; Introduce Self-Monitoring of Study Strategies (SMSS)	1. Didactic: Course requirements, format, grading; Purpose of the Self-Monitoring of Study Strategies Group Activity • Students complete SMSS Part I	1. • Course Syllabus • Overheads • Self-Monitoring of Study Strategies Form
	2. Assess reading comprehension and vocabulary skills	2. Group Activity: Students complete standardized reading test	2. Nelson Denny Reading Test (Form G), (1993). The Riverside Publishing Company.
	3. Explain rationale for individual consultations with students; schedule appointments	3. Students schedule an initial appointment with Cognitive Skills Instructor **Assignment:** Complete SMSS (Students are asked to select a specific learning strategy to use & report utility the following week.)	
TEST TAKING	1. Get acquainted and establish course goals & objectives; Describe graduate admissions exams (GRE, MCAT, DAT) and Verbal sections	1. Didactic: Course requirements, format, grading; Give general information about graduate admissions exams, testing format, and timing; Specific information about Verbal Reasoning sections of GRE, MCAT, and DAT	1. • Course Syllabus • Overheads
	2. Establish baseline measure of reading comprehension	2. Group Activity: Students complete pretest of reading skills	2. "Pre-test" consisting of 3 passages (brief, intermediate difficulty and more challenging) from Covino, W.A. & Orton, P.Z. Verbal Review for Standardized Tests. (1986) Lincoln, NE: Cliff Notes Inc. "Post-test" given Week 7.
	3. Describe strategies to enhance reading skills for Verbal sections; Introduce Reading Log to encourage students to increase quantity and scope of reading. Provide opportunity for students to implement strategies for reading brief passages.	3. Didactic: How to develop vocabulary and improve reading comprehension; how to improve scores on standardized tests; the reading process: 7 steps for active reading	3. • Overheads • Reading Log Form
		4. Group Activity: • Students read one passage at a time and answer questions; • In small groups, students discuss answers and source of evidence; • In large group, students discuss correct answers and source of evidence. **Assignment:** Maintain Reading Log	4. Covino, W.A. & Orton, P.Z. Verbal Review for Standardized Tests. (1986). Lincoln, NE: Cliffs Notes Inc., pages 317-323

[1] See Appendix B for materials that have been created by Cognitive Skills Program faculty

Biomedical Careers Program Level I: WEEK 2

	AGENDA FOR INSTRUCTION	FORMAT OF INSTRUCTION AND ACTIVITIES	MATERIALS[1]
STUDY STRATEGIES	1. Self-Monitoring of Study Strategies (SMSS): Review and discuss student selected study strategies for past week.	1. Discussion and Activity: SMSS Students complete Parts II & III of SMSS for Week 1 and discuss assignment and implications for studying and self-monitoring. Students identify study strategies for week 2 by completing SMSS Part I.	1. • Self-Monitoring of Study Strategies Form
	2. Describe the learning process: Acquisition, Maintenance and Proficiency; Active learning; Self-Monitoring	2. Didactic: Cognitive Model of Learning; Stages of Learning: Acquisition, Maintenance, and Proficiency; Model of Active Learner	2. Overheads
	3. Assess current reading habits.	3. Group Activity Students complete reading survey to be used to initiate discussion in individual consultation.	3. Reading Strategies to Think About
TEST TAKING	1. Assist students in developing strategies to enhance reading skills for verbal sections of standardized tests.	1. Didactic: Strategies for developing vocabulary and improving reading comprehension; Feedback on Nelson Denny Reading Test : Interpreting strengths and weaknesses	1. • Overheads • Score report for Nelson Denny Reading Test
	2. Provide opportunities for students to implement strategies for reading longer passages (intermediate difficulty.)	2. Group Activity • Students read one passage at a time and answer questions, and reflect upon their thought processes • In small groups, students discuss answers and source of evidence. • In large group, students discuss correct answers and source of evidence.	2. Verbal Review for Standardized Tests. (1986). Lincoln, NE: Cliffs Notes, Inc., pages 324-346.
		3. **Assignment:** Maintain Reading Log.	3. Reading Log Form

[1] See Appendix B for materials that have been created by Cognitive Skills Program faculty

Biomedical Careers Program Level I: WEEK 3

	AGENDA FOR INSTRUCTION	FORMAT OF INSTRUCTION AND ACTIVITIES	MATERIALS[1]
STUDY STRATEGIES	1. Self-Monitoring of Study Strategies (SMSS): Review and discuss student selected study strategies for past week.	1. <u>Discussion and Activity</u>: SMSS • Students complete Parts II & III of SMSS and discuss assignment and implications for studying and self-monitoring. Students identify study strategies for week 3 by completing SMSS Part I. • Complete SMSS Part I for Week 3.	1. • Self-Monitoring of Study Strategies Form
	2. Acquisition: Describe and model the use of effective strategies for acquisition of information from lectures.	2. <u>Didactic</u>: Acquisition Strategies • Before a lecture – previewing strategies • During a lecture – maintaining attention; identifying important ideas; note-taking • After a lecture – strategies for reformatting and reviewing notes; cumulative review • Students are asked to preview for at least one science lecture and to discuss method and its utility.	2. • Overheads • Science course texts
	3. Time Management: Assist students in developing effective time management and study planning skills.	3. <u>Discussion</u>: • Students create a proposed weekly schedule (activities, study time, exams, life-maintenance activities, etc.) 4. **Assignment** • Students are asked to preview for at least one science lecture and to discuss method and its utility. • Students monitor proposed schedule and note changes necessary.	3. Blank schedule
TEST TAKING	1. Provide opportunities for students to implement and practice antonym, analogy, and sentence completion strategies.	1. <u>Didactic</u>: Strategies for antonym, analogy, and sentence completion questions <u>Activity and Discussion</u>: Students practice antonym, analogy, and sentence completion questions individually and discuss thought processes.	1. • Overheads • <u>Verbal Review for Standardized Tests</u> (1986). Lincoln, NE: Cliffs Notes, Inc., pp. 217-254
	2. Model reading activity to encourage students to increase independent reading in a variety of materials and to foster awareness of health -related news resources on the Internet.	2. <u>Group Activity & Discussion</u> • Students read instructor distributed health-related article and discuss implications for themselves and careers in health related fields.	2. Current health-related article from an Internet resource (www.abc.com; www.time.com, www.newsweek.com, etc.)
		3. **Assignment:** Maintain Reading Log.	3. Reading Log Form

[1] See Appendix B for materials that have been created by Cognitive Skills Program faculty

Biomedical Careers Program Level I: WEEK 4

	AGENDA FOR INSTRUCTION	FORMAT OF INSTRUCTION AND ACTIVITIES	MATERIALS [1]
STUDY STRATEGIES	1. Self-Monitoring of Study Strategies (SMSS): Review and discuss student selected study strategies for past week. 2. Time Management: Assist students in developing effective time management and study planning skills. 3. Model and encourage effective strategies for acquisition of information from science textbooks.	1. <u>Group Activity and Discussion</u> • Students complete Parts II & III of SMSS for Week 3 and discuss assignment and implications for studying and self-monitoring. Students identify study strategies for week 4 by completing SMSS Part 1. 2. <u>Didactic</u> • Time management and the learning process: scheduling and balancing study time and life activities 3. <u>Didactic</u>: Effective strategies for textbook reading: • Previewing • Reviewing • Focused reading	1. • Self-Monitoring of Study Strategies Form 2. • Time Management Strategies handouts • Overheads • Blank schedule 3. Overheads
TEST TAKING	1. Assist students in developing strategies to enhance writing skills for standardized tests. 2. Provide opportunity for students to practice writing using a process approach.	1. <u>Didactic</u> Description of the writing process: planning, writing, revision 2. <u>In class Activity</u> Students read an instructor distributed health-related article from an Internet resource and write a one-page reaction essay. 3. **Assignment:** Maintain Reading Log.	1. Overheads 2. Current health-related article from an Internet resource 3. Reading Log Form

[1] See Appendix B for materials that have been created by Cognitive Skills Program faculty

Biomedical Careers Program Level I: WEEK 5

	AGENDA FOR INSTRUCTION	FORMAT OF INSTRUCTION AND ACTIVITIES	MATERIALS [1]
STUDY SKILLS	1. Self-Monitoring of Study Strategies (SMSS): Review and discuss student selected study strategies for past week. 2. Model and encourage effective note-taking strategies for learning and remembering and provide an opportunity to practice effective strategies to aid in retention of material.	1. <u>Group Activity and Discussion</u> • Students complete Parts II & III of SMSS for Week 4 and discuss assignment and implications of self-monitoring. Students identify study strategies for week 5 by completing SMSS Part I. 2. <u>Didactic</u>: Note-taking strategies for learning and remembering • Why note-taking is important • What formats are useful <u>In-class Activity</u> • Maintenance strategy: students reformat section of science lecture notes using examples as a guide • Retaining and retrieving information • Memory exercises 3. **Assignment** • Using one of the note-taking formats discussed, students are asked to take notes in science lecture and prepare to discuss usefulness in relation to acquisition and maintenance.	1. • Self-Monitoring of Study Strategies Form 2. • Overheads • Memory exercise from: Bransford, J.D. (1979) Human Cognition: Learning, Understanding, and Remembering. Belmont, CA:Wadsworth Publishing Company, 56-58.
TEST TAKING	1. Describe peer review process for improving writing skills. 2. Provide opportunity for students to practice revision.	1. <u>Didactic</u> • Instructor models use of Peer Review Writing Form 2. In-class Activity • In pairs students exchange reaction essay completed during Week 4 class and utilize Peer Review Form. Each student revises essay based on peer feedback. (Both essays, pre and post revision, are given to instructor for comment.) 3. **Assignment:** Maintain Reading Log.	1. • Peer Review of Writing Form • Reaction essays 2. Peer Review of Writing Form 3. Reading Log Form

[1] See Appendix B for materials that have been created by Cognitive Skills Program faculty

Biomedical Careers Program Level I: WEEK 6

	AGENDA FOR INSTRUCTION	FORMAT OF INSTRUCTION AND ACTIVITIES	MATERIALS[1]
STUDY STRATEGIES	1. Strategies for exam preparation	1. Didactic: Developing a study plan • Self assessment of proficiency level • Utilizing Error Analysis Form with summer program science exam Group Activity and Discussion: Students complete error-analysis of summer program science exam and discuss usefulness	1. • Blank schedule • Summer program science exam • Error Analysis Form
	2. Test taking strategies for multiple choice, true/false, essay questions, etc.	2. Didactic: Instructor discusses and models effective test taking strategies. 3. **Assignment** • Students are asked to utilize strategies in completing questions to prepare for their final science exams.	2. Test Taking Strategies
TEST TAKING	1. Review previously discussed strategies for enhancing reading skills on verbal sections of standardized tests. 2. Provide opportunities for students to implement reading strategies.	1. Didactic: Provide summary of previously discussed reading strategies (survey passage, determine purpose, develop questions, etc.) 2. Group Activity • Students read one passage at a time, answer questions, and reflect upon their thought processes. • In small groups, students discuss answers and source of evidence • In large group, students discuss correct answers and source of evidence. 3. **Assignment:** Students are asked to review all five reading logs and self-assess growth in time spent reading and variety of reading materials.	1. Overheads 2.• Overheads • Verbal Review for Standardized Tests (1986). Lincoln, NE, pp. 324-346 or more challenging passages pp. 347-365

[1] See Appendix B for materials that have been created by Cognitive Skills Program faculty

Biomedical Careers Program Level I: WEEK 7

	AGENDA FOR INSTRUCTION	FORMAT OF INSTRUCTION AND ACTIVITIES	MATERIALS [1]
STUDY STRATEGIES	1. Model effective problem solving strategies and discuss application to science courses.	1. Didactic: Describe problem-solving skills and application to the sciences Group Activity: Problem-solving exercises	1. Selected problems from Adams, J.L. (1979). Conceptual Blockbusting: A guide to better ideas. NY: W.W. Norton and Duncker, K. (1945). On problem-solving, Psychological Monograph, 58, 270.
	2. Increase awareness of stressors in students' lives and provide stress management strategies.	2. Didactic: Effects of stress Group Activity: Students participate in relaxation exercises.	2. Selected exercises from Davis, M., Eshelman, E.R., & McKay, M (1988). The Relaxation and Stress Reduction Workbook, 3rd ed., Oakland, CA: New Harbinger Pub. Inc.
	3. Identify and discuss changes in use of study strategies and implications for future studying.	3. Discussion: Acquisition, Maintenance, and Proficiency: discuss changes that have occurred in students' learning processes with reference to SMSS.	
TEST TAKING	1. Assess progress in reading comprehension.	1. Group Activity: Students complete post-test of reading skills.	1. "Post-test" consisting of 3 passages (brief, intermediate difficulty, and more challenging) from Covino, W.A. & Orton, P.Z. Verbal Review for Standardized Tests (1986). Lincoln, NE,: Cliff Notes, Inc.
	2. Provide time for students to develop individual plans for improving reading and writing	2. Discussion: Students identify sources and times for improving reading and writing and discuss individual plans	
	3. Summarize benefits of practice in developing reading skills.	3. Discussion: Benefits of independent reading of diverse material with reference to Reading Log activity and future careers in health-related fields.	
	4. Obtain student evaluations of course.	4. Class Activity: Students complete course evaluation forms.	4. Course Evaluation Form

[1] See Appendix B for materials that have been created by Cognitive Skills Program faculty

A Study Skills/Test Taking Curriculum: Biomedical Careers Program: Level II

Overview

DURATION	GROUP INSTRUCTIONAL TIME	INDIVIDUAL CONSULTATION	ELIGIBLE STUDENTS
Seven-week summer course	Twenty-one hours Instruction is divided into two 1 ½ hour classes per week: A. Study Strategies for the Sciences B. Test Taking: Strategies for improving verbal skills on the Medical College Admissions Test (MCAT)	Every student meets with a Cognitive Skills Instructor at least twice during the program.	College undergraduates who have completed at least two semesters of general biology and one semester of college math.

COURSE GOALS	STUDENT EVALUATION	COURSE EVALUATION
A. Study Skills: 1. Students will increase awareness of the effectiveness of current reading and study practices for learning in science courses 2. Students will expand their repertoire of reading and study strategies 3. Students will apply more effective study strategies to increase competency on exams **B. <u>Test-Taking</u>:** 1. Students will assess their strengths and weaknesses in reading comprehension and writing skills 2. Students will practice skills needed for improving scores on the MCAT Verbal Reasoning and MCAT Writing Sample 3. Students will develop a study plan to improve scores on the MCAT Verbal Reasoning and MCAT Writing Sample	This grade is a component of the grade students receive for the BCP program. For the Cognitive Skills component, students are evaluated on attendance, punctuality, class participation, submission of assignments and faculty observation of how well new strategies are incorporated into subsequent work.	Students complete a course evaluation questionnaire which is included in Appendix C.

Biomedical Careers Program Level II: WEEK 1

	AGENDA FOR INSTRUCTION	FORMAT OF INSTRUCTION AND ACTIVITIES	MATERIALS[1]
STUDY STRATEGIES	1. Get acquainted and establish course goals and objectives for group sessions and individual consultations. 2. Assess reading comprehension and vocabulary skills. 3. Establish rationale and schedule individual consultations with students.	1. Didactic Course goals, requirements, format, grading 2. Group Activity Students complete standardized reading test 3. Students schedule an initial appointment with the Cognitive Skills Instructor	1. • Course Syllabus • Overheads 2. Nelson Denny Reading Test (Form H), (1993). The Riverside Publishing Company.
TEST TAKING	1. Get acquainted and establish course goals and objectives. 2. Describe MCAT and Verbal Reasoning and Writing Sample sections. 3. Ascertain when each student is Planning to take the MCAT. 4. Measure baseline performance in MCAT Verbal Reasoning skills.	1. Didactic: Course requirements, format, grading 2. General information about MCAT, testing format, and timing; Specific information about Verbal Reasoning and Writing Sample sections of MCAT 3. Group Activities Students complete MCAT survey 4. Students complete a timed reading comprehension test: 3 MCAT passages with 20 questions (30 min.)	1. • Course Syllabus • Overheads 2. AAMC. MCAT Student Manual. (1995). 3. MCAT Survey 4. "Pre-test" compiled from passages from MCAT Practice Test (1990) and Practice Test II (1991), 3 Verbal Reasoning passages matched for difficulty with "post-test" (Week 7)

[1] See Appendix C for materials that have been created by Cognitive Skills Program faculty

Biomedical Careers Program Level II: WEEK 2

	AGENDA FOR INSTRUCTION	FORMAT OF INSTRUCTION AND ACTIVITIES	MATERIALS[1]
STUDY STRATEGIES	1. The learning process: Acquisition, Maintenance and Proficiency; Active learning; Self-Monitoring.	1. Didactic • Cognitive Model of Learning • Stages of Learning: Acquisition, Maintenance, and Proficiency • Model of Active Learning; Self-Monitoring • Time management	1. Overheads
	2. Time Management: Assist students in developing effective time management and study planning skills.	2. Group Activities • Students read time management scenarios individually and in small groups, identify and discuss issues and problems • Students create proposed weekly schedule (study time, exams, life-maintenance activities, etc.) **Assignment:** Students are asked to maintain schedule of actual time spent on activities & compare with proposed schedule.	2. • Time management scenarios • Examples of Student Schedules • Blank schedules
	3. Weekly Strategies Exercise (WSE): Assess students' repertoire and use of study strategies.	3. Demonstration and Activity Introduce Weekly Strategies Exercise questionnaire for reporting current and past study strategies. (Assigned weekly throughout the program)	3. • Overheads • Weekly Strategies Exercise Preliminary Questionnaire
TEST TAKING	1. Describe strategies to enhance reading skills for MCAT Verbal Reasoning.	1. Didactic • How to develop vocabulary and improve reading comprehension • How to improve scores on MCAT Verbal Reasoning passages • Feedback on Nelson Denny Reading Test: Interpreting strengths and weaknesses	1. • Score Report for Nelson Denny Reading Test • Overheads
	2. Provide opportunities for students to implement strategies and practice MCAT Verbal Reasoning passages.	2. Group Activity • Students read one MCAT passage at a time and answer questions. • In small groups, students discuss answers and source of evidence. • In large group, students discuss correct answers and source of evidence.	2. AAMC. MCAT Practice Items: Verbal Reasoning (1991).

[1] See Appendix C for materials that have been created by Cognitive Skills Program faculty

Biomedical Careers Program Level II: WEEK 3

	AGENDA FOR INSTRUCTION	FORMAT OF INSTRUCTION AND ACTIVITIES	MATERIALS[1]
STUDY STRATEGIES	1. Weekly Strategies Exercise: Review and discuss utility of strategies for "Time Management" used during past week. 2. Describe and model the use of effective strategies for acquisition of information from lectures.	1. Discussion and Activity • Students report and critique use of time management strategies introduced last week. • What worked and what did not? 2. Didactic: Acquisition Strategies • Before a lecture – previewing strategies • During a lecture – maintaining attention; identifying important ideas; note-taking • After a lecture – strategies for reformatting and reviewing notes; cumulative review In-class Demonstration and Activity • Instructor models previewing from biochemistry textbook. • Students practice previewing skills for next day's lecture using their textbook. **Assignment:** Students are asked to practice previewing strategies for all lectures and be prepared to discuss its usefulness.	1. Weekly Strategies Exercise Questionnaire #1 2. Overheads Preview of Chapter 2: Protein Structure and Function chapter. Source: Stryer, L. (1995) Biochemistry. New York: Freeman
TEST TAKING	1. Assist students in developing essay writing skills for Writing sample on MCAT. 2. Provide opportunities for students to implement strategies and practice MCAT Verbal Reasoning passages.	1. Didactic • Discuss format of MCAT Writing Sample and strategies for writing Group Activity • Students complete 30-minute MCAT essay 2. Group Activity • Students read one MCAT passage at a time and answer questions. • In small groups, students discuss answers and source of evidence. • In large group, students discuss correct answers and source of evidence.	1. • Overheads • Essay question selected from prior MCAT 2. AAMC. MCAT Practice Items: Verbal Reasoning (1991).

[1] See Appendix C for materials that have been created by Cognitive Skills Program faculty

Biomedical Careers Program Level II: WEEK 4

	AGENDA FOR INSTRUCTION	FORMAT OF INSTRUCTION AND ACTIVITIES	MATERIALS[1]
STUDY STRATEGIES	1. Weekly Strategies Exercise: Review and discuss utility of strategies for "Acquisition from Lecture" used during past week. 2. Model and encourage effective strategies for acquisition of information from science textbooks. 3. Model and encourage effective note-taking strategies for learning and remembering.	1. Discussion and Activity • Students report and critique use of acquisition from lecture strategies introduced last week. • What worked and what did not? • Students discuss time management strategies as well 2. Didactic: Effective strategies for textbook reading: Previewing , Reviewing , Focused reading 3. Didactic: Note-taking strategies for learning and remembering. • Why note-taking is important. • What formats are useful. 4. **Assignment** Students are asked to preview and take notes on a chapter from Biochemistry textbook and develop questions for further, focused reading.	1. Weekly Strategies Exercise Questionnaire #2 2. • Overheads • Textbook material selected from required reading for Biochemistry 3.• Overheads • Note-taking Formats with Examples, #1, #2, #3
TEST TAKING	1. Provide opportunities for students to implement strategies and practice MCAT Verbal Reasoning passages.	1. Group Activity • Students read one MCAT passage at a time and answer questions. • In small groups, students discuss answers and source of evidence. • In large group, students discuss correct answers and source of evidence.	1. AAMC. MCAT Practice Items: Verbal Reasoning (1991).

[1] See Appendix C for materials that have been created by Cognitive Skills Program faculty

Biomedical Careers Program Level II: WEEK 5

	AGENDA FOR INSTRUCTION	FORMAT OF INSTRUCTION AND ACTIVITIES	MATERIALS[1]
STUDY STRATEGIES	1. Weekly Strategies Exercise: Review and discuss utility of strategies for "Acquisition from Reading" used during past week. 2. Describe effective strategies for remembering. Provide an opportunity to practice effective strategies to aid in retention of material.	1. Discussion and Activity • Students report and critique use of acquisition from reading strategies introduced last week. • What worked and what did not? • Students report use of specific strategies discussed in prior weeks 2. Didactic: Strategies for Enhancing Memory • Cumulative review and Spaced practice • Visualizing/Drawing/Verbalizing • Organizing/Chunking/Framing/Meaning Group Activity: Students are guided to "chunk" information to learn and remember more effectively. Demonstration/Activity: Students are guided to reformat lecture notes. 3. **Assignment:** Students are asked to select one of the formats discussed to take notes in a Biochemistry lecture.	1. Weekly Strategies Exercise Questionnaire #3 2.• Overheads • Strategies for Learning and Remembering • Overheads • Textbook Passage Notes: Example 1 • Textbook Passage Notes: Example 2
TEST TAKING	1. Discuss the holistic scoring system for evaluating the MCAT Writing Sample. 2. Demonstrate the scoring process through a group exercise.	1. Didactic: Elements of holistic scoring 2. Group Activity • Each student reads essays and assigns a holistic score. • Students meet in small groups to discuss scoring and score explanations; small group scores are determined. • Results of small group deliberations are discussed with the group as whole. • Students evaluate the exercise.	1.• Instructor-prepared overheads • AAMC. MCAT Student Manual. (1995). Part 4: Writing Sample. 2.• Sample student essays • Holistic Scoring Exercise

[1] See Appendix C for materials that have been created by Cognitive Skills Program faculty

Biomedical Careers Program Level II: WEEK 6

	AGENDA FOR INSTRUCTION	FORMAT OF INSTRUCTION AND ACTIVITIES	MATERIALS[1]
STUDY STRATEGIES	1. Weekly Strategies Exercise: Review and discuss utility of strategies for "Maintenance" used during past week. 2. Discuss the utility and method of developing a study plan.	1. <u>Discussion and Activity</u> • Students report and critique use of maintenance strategies introduced last week. • What strategies worked and what did not? • Students report use of specific strategies discussed in prior weeks 2. <u>Didactic: Strategies for Gaining Proficiency</u> • Making a study plan: How to assess your level of proficiency before an exam utilizing error analysis • Test-taking strategies <u>Activity</u> Students develop a plan for the week as follows: • List classes, activities, exams etc. • Identify hours/days/weeks available for study • Set and prioritize goals • Identify course/topic for study each day/week **Assignment**: Error-analysis • Complete error analysis for most recent Biochemistry course exam	1.Weekly Strategies Exercise Questionnaire #4 2.• Overheads • Weekly time schedule • Error Analysis Form • Test-taking strategies handout
TEST TAKING	1. Provide opportunities for students to implement strategies and practice MCAT Verbal Reasoning passages.	1. <u>Group Activity</u> • Students read one MCAT passage at a time and answer questions. • In small groups, students discuss answers and source of evidence. • In large group, students discuss correct answers and source of evidence.	1. <u>MCAT Practice Items: Verbal Reasoning, Writing sample</u> (1991). Washington, DC: AAMC.

[1] See Appendix C for materials that have been created by Cognitive Skills Program faculty

Biomedical Careers Program Level II: WEEK 7

	AGENDA FOR INSTRUCTION	FORMAT OF INSTRUCTION AND ACTIVITIES	MATERIALS[1]
STUDY STRATEGIES	1. Weekly Strategies Exercise: Review and discuss utility of strategies for "Test preparation" used during past week.	1. Discussion and Activity • Students report and critique use of test preparation strategies introduced last week. • What worked and what did not? • Students report use of specific strategies discussed in prior weeks.	1. Weekly Strategies Exercise Questionnaire #5
	2. Establish the importance of effective problem-solving skills for studying science and the health professions.	2. Discussion and Activity • Students complete Problem-solving questionnaire • Discuss characteristics of a good problem-solver, personal methods used, barriers to problem-solving, and how to enhance problem-solving.	2. Problem Solving Questionnaire
	3. Model and increase repertoire of problem-solving skills.	3. Group Activity • Students complete a 10-item test consisting of several types of problems. • Student volunteers demonstrate on blackboard how they solved each problem. • Students discuss other approaches to solving the problem. • Students discuss ways to apply problem-solving skills in their science courses.	3. • 10-item test of problem-solving skills, adapted from the Whimbey Analytical Skills Inventory (WASI). Whimbey, A. & Lockhead, J.L. (1982). Problem solving and Compehension. Philadelphia, PA: Franklin Institute.
TEST TAKING	1. Introduce the concept of effects of Stress and Stress-management.	1. Didactic • Increase students' self-awareness of stressors • Discuss impact of stress on academic performance • Enhance awareness of strategies for managing stress Group Activity • Students complete Stress-style survey: Body vs. Mind. • Students discuss responses & appropriate relaxers.	1. Stress-Style Test. Goleman, D. (1986). The relaxed body book. NY: Doubleday
	2. Assess student progress by establishing amount of change from baseline in MCAT Verbal Reasoning performance.	2. Group Activity: • Students complete a timed reading comprehension test of 3 MCAT passages with 20 questions (30 min.) • Students complete course evaluation forms	2. • "Post-test" compiled from MCAT Practice Test (1990) and Practice Test II (1991), 3 Verbal Reasoning passages matched for difficulty with "pre-test" (Week 1) • Course Evaluation Form
	3. Briefly summarize and obtain student evaluations of course.		

[1] See Appendix C for materials that have been created by Cognitive Skills Program faculty

APPENDIX A

Science Enrichment Program

Section One: Materials for Study Skills

- Study Strategies Course Syllabus (2 pages)
- Reading Log Form
- Reading Questionnaire
- Blank Schedule
- Test-Taking Strategies
- Time Management Scenarios

Course Syllabus
Science Enrichment Program: Study Strategies

Course Objectives:

1. Students will increase awareness of the effectiveness of current reading and study practices for learning sciences.
2. Students will expand their repertoire of reading and study strategies.
3. Students will apply more effective study strategies to increase competency on exams.

Instructional Format:

A variety of instructional formats will be used in class: lectures, discussions and group activities. Additional time outside of class will be scheduled for individual consultations in the instructor's office.

Requirements:

4. Attendance and punctuality are required for all group sessions and for your scheduled individual consultations.
5. Active participation is required during all class sessions.
6. Assignments are to be submitted promptly. Students are expected to incorporate feedback into subsequent assignments.

Grading:

You will receive one grade for the summer course. Your Cognitive Skills grade will be averaged into your total grade. You will be evaluated on your attendance, punctuality, submission of assignments, and, when appropriate, your willingness to incorporate new strategies.

Course Syllabus
Science Enrichment Program: Study Strategies

Week 1	**Course requirements, format, grading** **Description of Reading Log Activity** **Assessment of current study strategies:** ***Learning and Study Strategy Inventory-High School Version*** **(LASSI-HS)**
Week 2	**Introduction to a Cognitive Model for Learning** **Stages of Information Processing:** Acquisition, Maintenance, Proficiency **Model of Active Learner; Self-monitoring** **Skills for Acquiring Information from Class** Previewing, Maintaining, and Reviewing
Week 3	**Skills for Acquiring Information from Reading** Using the textbook for previewing and reviewing Focused reading Review reading sources from Reading Logs **Note-taking Strategies for Learning and Remembering** Formats leading to maintenance
Week 4	**Strategies for Retaining and Retrieving Information** **Reformatting Material**
Week 5	**Test Preparation** Making a Study Plan; Assessing Proficiency **Test-taking strategies: T/F, multiple choice, essay**
Week 6	**Time Management Strategies** Procrastination **Stress Management** Strategies and Practice Exercises

SEP: Reading Log Form **Name:**

Date	Source	Topic	Comments/Reaction

(Continue on additional pages)

Science Enrichment Program

Reading Questionnaire

Name:

High School:

Entering what year in high school:

Career interest:

1. How much do you enjoy reading?

0	1	2	3	4	5
Not At All					A Great Deal

2. What do you read outside of course assignments for your own enjoyment and interest? Please list by title any books, magazines, or newspapers you read during last semester (January - June).

Newspapers:

Magazines:

Novels:

Non-fiction:

Other:

3. Indicate approximately how much time you read ***each week*** for :

~ class assignments/study

_____ < 1 hour _____ 1-2 hours _____ 2-5 hours _____ > 5 hours

~ your own enjoyment/interest

_____ < 1 hour _____ 1-2 hours _____ 2-5 hours _____ > 5 hours

SEP: Time Management, Blank Schedule

TIME	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
8:30							
9:30							
10:30							
11:30							
12:30							
1:30							
2:30							
3:30							
4:30							
5:30							
6:30							
7:30							
8:30							
9:30							
10:30							
11:30							

Science Enrichment Program: Test-taking Strategies

1. Read each question/statement carefully for comprehension, not speed. Time is lost if you need to re-read every item.

2. Mark the question in a way which is helpful to you. You may wish to underline key words and phrases to help keep your thinking focused. Be especially alert for cues in the question that could change the meaning (negatives, key terms, or phrases -- "except", "most likely", "frequently", " increase", "decrease", etc.).

3. When possible, quickly try to anticipate an answer.

4. Avoid dwelling on an ambiguous item. Select a response and return to it later. It is possible that something in a subsequent item may jog your memory.

5. To change or not to change ... unless you can bring new information to bear on the question/statement, avoid changing. Change a response if you neglected to pick up a critical cue on your first reading.

6. Accept questions at face value. Avoid trying to look for "traps", "tricks", "hidden meanings" etc. Trust in yourself. If it sounds "too easy", it could be because you are very familiar with the material, not because there is a hidden trap.

7. Bring a watch. Set up "check points" in the test of approximately where you want to be at the end of 30 minutes, one hour, etc. Do not spend an excessive amount of time on any one question, nor should you rush through questions/statements which may lead to careless errors.

8. Mark an answer for every question.

9. Leave 5 - 10 minutes to review answer choices.

Multiple Choice Exams

1. Eliminate as many incorrect answer choices as you can. However, be systematic in reading all the answer choices anyway to avoid "impulsive answer" errors.

2. Carefully evaluate answer choices with absolute qualifiers such as "always" and "never" which need to be true in EVERY case.

True/False Exams

1. The whole statement must be true: the who, what, why, when, where and how much.

2. Absolute qualifiers such as "always" and "never" tend to make statements false.

SEP: TIME MANAGEMENT SCENARIOS

Scenario #1
Talya is a serious student, but is having difficulty with her Biology class. She has decided to spend all day Sunday studying Biology. She plans to lock herself in her room and not come out until she has reviewed four chapters.

What do you think of her approach?

What study plan would be more effective?

Scenario #2
Evan realizes that he has three assignments that must be completed in one evening. The assignments are to revise an English composition, read and take notes on chapter 11 in Chemistry text, and copy notes from classmate's notebook when missed class for doctor's appt. He decides to copy notes to get it out of the way, then do the English (since it is his favorite class), then do Chemistry.

Evaluate Evan's plan of study.

Scenario #3
Michelle studies about 2 hours every night at the town library, but she is still only getting in the low 70s on her quizzes and tests for all of her classes. She is frustrated and wants to know why she isn't getting better grades with all the time she is putting in with her school work.

What are some possibilities?

APPENDIX A

Science Enrichment Program

Section Two: Materials for Test Taking

- Test Taking Strategies Course Syllabus (2 pages)
- The major source of information and instruction is a book containing 10 actual SAT exams:

  Claman, Cathy (1997). 10 Real SATs. New York: The College Board.

Course Syllabus
Science Enrichment Program: Test-Taking Strategies

Course Objectives:

1. Students will become familiar with skills needed for improving verbal scores on the SAT.

2. Students will assess strengths and weaknesses in reading comprehension and vocabulary skills.

3. Students will practice skills to improve verbal scores on the SAT.

Instructional Format:

The majority of instructional time will require you to participate in "hands on" activities. These will include reading, writing, providing feedback to your peers and participating in small group activities.

Requirements:

1. Attendance and punctuality are required for all group sessions and for your scheduled individual consultations.

2. Active participation is required during all class sessions.

Grading:

You will receive one grade for the summer course. Your Cognitive Skills grade will be averaged into your total grade. You will be evaluated on your attendance, punctuality, completion of class assignments, and, when appropriate, your success in incorporating feedback into subsequent assignments.

Course Syllabus
Science Enrichment Program: Test Taking

Week 1	**No class**
Week 2	**Course requirements, format, grading** **Assess reading comprehension and vocabulary skills: *Gates-MacGinitie Reading Tests: Level 10/12***
Week 3	**Feedback on *Gates-MacGinitie Reading Tests*** **Identify strengths and weaknesses** **General information on the SAT: *10 Real SATs*** **Test Taking Strategies** **Discussion and Practice**
Week 4	**Strategies for Verbal Section of SAT** **Reading Strategies** **Discussion and Practice**
Week 5	**Strategies for Sentence Completion and Analogies** **Discussion and Practice**
Week 6	**30 minute Verbal Section of SAT** **Identify strengths and weaknesses**

APPENDIX B

Biomedical Careers Program Level I

Section One: Materials for Study Strategies

- Study Strategies Course Syllabus (2 pages)
- Description of Self-Monitoring of Study Strategies Exercise
- Self-Monitoring of Study Strategies Form (2 pages)
- Reading Strategies to Think About (2 pages)
- Blank Schedule
- Time Management Strategies
- Error Analysis Form
- Test Taking Strategies

Course Syllabus
BCP Level I: Study Strategies

Course Objectives:

1. Students will increase awareness of the effectiveness of current reading and study practices for learning sciences.
2. Students will expand their repertoire of reading and study strategies.
3. Students will apply more effective study strategies to increase competency on exams.

Instructional Format:

A variety of instructional formats will be used in class: lectures, discussions and group activities. Additional time outside of class will be scheduled for individual consultations in the instructor's office.

Requirements:

1. Attendance and punctuality are required for all group sessions and for your scheduled individual consultations.
2. Active participation is required during all class sessions.
3. Assignments are to be submitted promptly. Students are expected to incorporate feedback into subsequent assignments.

Grading:

You will receive one grade for the summer course. Your Cognitive Skills grade will be averaged into your total grade. You will be evaluated on your attendance, punctuality, submission of assignments, and, when appropriate, your willingness to incorporate new strategies.

Course Syllabus
BCP Level I: Study Strategies

Week 1	**Introductions** **Course requirements** **Self-Monitoring of Study Strategies** **Nelson Denny Reading Test**
Week 2	**Self-Monitoring of Study Strategies** **Introduction to a Cognitive Model for Learning** **Stages of Learning:** Acquisition, Maintenance, Proficiency **Model of Active Learner**
Week 3	**Self-monitoring of Study Strategies** **Strategies for Acquiring Information from Lectures** Strategies that enhance understanding Note-taking **Managing Time** Setting priorities & scheduling realistically
Week 4	**Self-monitoring of Study Strategies** **Managing Time** Self-monitoring **Strategies for Acquiring Information from Reading** Using the textbook for previewing and reviewing Focused reading
Week 5	**Self-monitoring of Study Strategies** **Note-taking Strategies for Learning and Remembering** Why note taking is important What formats are useful **Reformatting Information**
Week 6	**Strategies for Exam Preparation** Developing a study plan Utilizing Error Analysis
Week 7	**Problem Solving Strategies and Exercises** **Stress Management Strategies and Exercises**

Biomedical Careers Program - Level I

Description of Self-Monitoring of Study Strategies Exercise

Objectives:

This 4-week exercise is designed to help students gain awareness of current study strategies and evaluate their effectiveness, and to help students expand their repertoire of study strategies. Students are encouraged to try out new study strategies with the aim of evaluating their effectiveness. This exercise is seen as an integral part of the Study Strategies class in which study strategies listed on the Self-Monitoring of Study Strategies Form are described and modeled by the instructor and practiced by the students.

Weekly Assignment:

At the beginning of the week:
Each student selects a Learning Objective and strategies to monitor for the week and records this information on Part 1 of the Self Monitoring of Study Strategies Form.

During the week:
Each student implements strategies and monitors their usefulness in learning their course work.

At the end of the week:
Parts 2 & 3 on the Self-Monitoring of Study Strategies Form are completed. The student reflects on the strategies utilized during the week, evaluates their usefulness, and notes changes in implementation that would increase their effectiveness.

(Each week the students may select the same Learning Objective and modify the strategies, or select a new learning objective.)

Name: _____ Date: _____

BCP Level I: SELF-MONITORING OF STUDY STRATEGIES FORM

The purpose of this assignment is to 1) help you gain awareness of your current study practices and their effectiveness, and 2)encourage you to experiment with new study practices and to evaluate their effectiveness.

ASSIGNMENT:

1. Complete **Part 1.** Each week select an objective and respective study strategies from the list on the back of this sheet. Submit your form to me.
2. **Part 2**: The following week you will be asked to list the study strategies that you used and reflect on if they were helpful in accomplishing your objective. What worked for you? What did not work?
   Part 3: State what study strategies you would continue to utilize and if you need to continue to work on this objective.
3. Remember, learning is individual and not every strategy works equally well for everyone. Be certain that you explore new methods to find what works best for YOU.

Part 1: Choose an objective and respective study strategies that you will ultize during the week.

_____

_____

Part 2: Review the objective and study strategies that you selected in **Part 1**. Explain your use of study strategies during the past week and state their effectiveness in accomplishing your objective.

_____

_____

_____

_____

Part 3: Discuss changes you will make in the future.

_____

_____

_____

BCP LEVEL I: SELF-MONITORING OF STUDY STRATEGIES FORM (page 2)
LIST OF OBJECTIVES AND STUDY STRATEGIES

OBJECTIVE: To read science texts and other materials with a greater understanding:

Study Strategies:

- Preview for reading assignments.
- Identify words you do not know and learn their meanings.
- Recognize main concepts.
- Distinguish the important details from the less important ones.
- Rephrase information into your own words.
- Summarize information/organize it into a new format.
- Ask yourself questions while reading.

OBJECTIVE: To follow lectures more effectively:

Study Strategies:

- Preview for a lecture.
- Recognize and understand the main ideas presented in lecture.
- Distinguish which ideas are most important.
- Maintain attention during lectures.

- Take notes from a lecture that are useful for study.
- Rephrase information into your own words.
- Reformat lecture information into concept maps, charts, etc.
- Review notes after lecture as soon as possible.

OBJECTIVE: To manage time more efficiently:

Study Strategies:

- Balance study time with time required for other life activities
- Create a study schedule and stick to it.
- Keep up with work on a daily basis.

OBJECTIVE: To improve memory and problem solving:

Study Strategies:

- Link information to prior knowledge.
- Apply information to new or different circumstances.
- Recall information by thinking about pictures, diagrams, and mnemonics.
- Practice solving problems using newly acquired information.

OBJECTIVE: To reduce stress when preparing for and taking exams:

Study Strategies:

- Study far enough in advance to avoid cramming.
- Use practice exams/review questions to assess proficiency.
- Complete timed practice exams.
- Keep stress under control through physical exercise.
- Work with a study group.

BCP Level I: Reading Strategies to Think About

Please circle one answer for each statement:

Never	Seldom	Sometimes	Often	Always
1	2	3	4	5

Anticipating, Predicting and Previewing the Topic

Before reading I

1	2	3	4	5	determine how much time I have.
1	2	3	4	5	think about what I already know about the topic.
1	2	3	4	5	decide what is important about the topic.
1	2	3	4	5	think about what this reading may teach me about the topic.
1	2	3	4	5	look over the introduction, headings, charts, pictures, words in bold type, and questions at the end of the passage.

What else do you do before you read?

Acquiring and Comprehending Information

While reading I

1	2	3	4	5	ask myself whether or not I understand what I am reading.
1	2	3	4	5	re-read parts that seem unclear.
1	2	3	4	5	read on to see if confusing parts clear up.
1	2	3	4	5	read on to see if confusing parts clear up.
1	2	3	4	5	mark sections that I don't understand.

1	2	3	4	5	find clues in the sentence to help me with meaning.
1	2	3	4	5	think about how this reading connects with what I have already read.
1	2	3	4	5	speculate about how all the ideas fit together.
1	2	3	4	5	mark main idea and supporting details.
1	2	3	4	5	make comments in the margin in my own words.

What else do you do <u>while</u> reading?

<u>Remembering and Making Connections</u>

<u>After</u> reading I

1	2	3	4	5	ask myself what I've learned from this assignment.
1	2	3	4	5	decide what material I do not understand.
1	2	3	4	5	decide what I need to remember from reading.
1	2	3	4	5	look back at my notes and fill them in.
1	2	3	4	5	summarize how this material connects with what I already know, or how it applies to other areas.
1	2	3	4	5	decide if I need to reread or ask for assistance.
1	2	3	4	5	review within 24 hours.
1	2	3	4	5	reorganize my notes

What else do you do after reading?

****

What have you learned about your strategies for reading?

How can you improve the effectiveness of your reading?

BCP Level 1: Time Management, Blank Schedule

TIME	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
8:30							
9:30							
10:30							
11:30							
12:30							
1:30							
2:30							
3:30							
4:30							
5:30							
6:30							
7:30							
8:30							
9:30							
10:30							
11:30							

BCP Level I: Time Management Strategies

1. Write down weekly goals, plans, activities and objectives. Make a list at the beginning of the week of all the things you're planning to accomplish by the end of the week.

2. Arrange tasks according to importance and urgency. Rank according to priority ("top", "high", or "low" priority.) Note which tasks can be eliminated if something more important comes along?

3. Plan schedules by using calendars or appointment books. (Avoid jotting things down on loose pieces of paper or depending on your memory.) Use pencil so schedules can be revised.

4. Schedule most demanding tasks during periods of highest energy. (Are you a "morning person?" "afternoon person?" "night person?")

5. Eliminate time wasting activities. (What do you do each day that is unnecessary and costs you time and energy?)

6. Eliminate tendency to procrastinate (even if tasks are unpleasant or time-consuming.)

7. Do you know how to say "No"? It may be necessary at times in order to avoid scheduling problems and time wasting activities.

8. Regular "breaks" or "free" time should be blocked into your daily schedule.

9. Develop effective deadlines that you can meet. Write them down, know when they are, and be aware of how long you have until the deadline. Break your project into smaller parts—set individual deadlines for each part.

10. Avoid spending too much time on the telephone. Let your answering machine or caller ID "screen" your calls. Pick up only if urgent, or if response will save you time later. If call is not urgent, say "I'll call you back."

11. Avoid "unscheduled" socializing. Beware if you are taking longer and more frequent breaks.

12. Avoid getting involved in "everything" everyone else is doing.

ERROR ANALYSIS FORM

SUBJECT: _____ EXAM #: _____ TOPICS COVERED: _____

		CONTENT				APPLICATION	TEST-TAKING	
Q #	TOPIC	NEVER SAW	DECIDED NOT TO STUDY	STUDIED BUT LEARNED INCORRECTLY	STUDIED BUT COULDNT RECALL	STUDIED AND REMEMBERED BASIC INFO. BUT COULDN'T APPLY IT TO QUESTION	MISREAD/ MISINTERPRETED	IMPULSIVE/ OVER CONFIDENT
ERROR TALLY:								

PACING: Did you finish on time? _____
Did you rush at the end? _____

BCP Level I: Test-taking Strategies

1. Read each question/statement carefully for comprehension, not speed. Time is lost if you need to re-read every item.

2. Mark the question in a way which is helpful to you. You may wish to underline key words and phrases to help keep your thinking focused. Be especially alert for cues in the question that could change the meaning (negatives, key terms, or phrases -- "except", "most likely", "frequently", " increase", "decrease", etc.).

3. When possible, quickly try to anticipate an answer.

4. Avoid dwelling on an ambiguous item. Select a response and return to it later. It is possible that something in a subsequent item may jog your memory.

5. To change or not to change ... unless you can bring new information to bear on the question/statement, avoid changing. Change a response if you neglected to pick up a critical cue on your first reading.

6. Accept questions at face value. Avoid trying to look for "traps", "tricks", "hidden meanings" etc. Trust in yourself. If it sounds "too easy", it could be because you are very familiar with the material, not because there is a hidden trap.

7. Bring a watch. Set up "check points" in the test of approximately where you want to be at the end of 30 minutes, one hour, etc. Do not spend an excessive amount of time on any one question, nor should you rush through questions/statements which may lead to careless errors.

8. Mark an answer for every question.

9. Leave 5 - 10 minutes to review answer choices.

Multiple Choice Exams

1. Eliminate as many incorrect answer choices as you can. However, be systematic in reading all the answer choices anyway to avoid "impulsive answer" errors.

2. Carefully evaluate answer choices with absolute qualifiers such as "always" and "never" which need to be true in EVERY case.

True/False Exams

1. The whole statement must be true: the who, what, why, when, where and how much.

2. Absolute qualifiers such as "always" and "never" tend to make statements false.

APPENDIX B

Biomedical Careers Program Level I

Section Two: Materials for Test Taking

- Test Taking Course Syllabus (2 pages)
- Description of Reading Log Assignment
- Reading Log Form
- Nelson Denny Reading Test Score Report
- Peer Review of Writing Form (2 pages)
- Course Evaluation Form

Course Syllabus
BCP Level I: Test-Taking Strategies

Course Objectives:

1. Students will become familiar with skills needed for improving scores on standardized exams, such as the MCAT, GRE, DAT

2. Students will assess strengths and weaknesses in reading comprehension and writing skills

3. Students will develop a plan and practice skills to improve scores on standardized exams.

Instructional Format:

The majority of instructional time will require you to participate in "hands on" activities. These will include reading, writing, providing feedback to your peers and participating in small group activities.

Requirements:

1. Attendance and punctuality are required for all group sessions and for your scheduled individual consultations.

2. Active participation is required during all class sessions.

3. Assignments are to be submitted promptly. Students are expected to incorporate feedback into subsequent assignments.

Grading:

You will receive one grade for the summer course. Your Cognitive Skills grade will be averaged into your total grade. You will be evaluated on your attendance, punctuality, submission of assignments, and, when appropriate, your success in incorporating feedback into subsequent assignments.

Course Syllabus
BCP Level I: Test Taking Strategies

Week 1	**Course requirements, format, grading** **Introduction to Graduate Admission Exams** **Reading Log** **Reading Process on Graduate Admission Exams** **Pre-Test of Reading Skills**
Week 2	**Nelson Denny Reading Test:** Interpreting strengths and weaknesses **Strategies for enhancing your reading comprehension and vocabulary** **Verbal Reasoning Passages:** Practice and discussion
Week 3	**Strategies for Antonyms, Analogies, and Sentence Completion** **Verbal Reasoning Passages:** Practice and discussion
Week 4	**Writing Process:** Planning, Writing, and Revising **Write reaction essay to science article**
Week 5	**Peer Review Process for Improving Writing Skills** **Writing Sample Peer Review Form**
Week 6	**Summary of Strategies for Enhancing Reading Skills** **Verbal Reasoning Passages**: Practice and discussion
Week 7	**Post-Test of Reading Skills** **Developing a Plan to Improve Reading and Writing** **Benefits of Reading Log Activity** **Course Evaluation**

Biomedical Careers Program Level I

Description of Reading Log Exercise

Objective:

This exercise is designed to help students become more aware of their current reading practices-how long they read per week and the materials they are reading. Students are encouraged to increase the amount of time they read and to read from diverse materials.

Weekly Assignment:

Students record the following on a Reading Log Form: date, source of reading material, and topic. Comments/reaction to all reading activities are expected. Students submit the Reading Log at the beginning of weeks 2 to 7 and receive instructor feedback through written comments.

On week 7 students are asked to reflect on the experience of maintaining the Reading Log and discuss long term plans to continue increasing reading time and developing strategies for becoming better readers.

BCP Level I: Reading Log Form **Name:**

Date	Source	Topic	Comments/Reaction

(Continue on additional pages)

BCP Level I: Score Report for the Nelson-Denny Reading Test

Name: _____ College Year Completed _____

Date: _____ Form _____

Sub-Test		Percentile Score
Vocabulary	(Timed)	_____
	(Untimed)	_____
Comprehension	(Timed)	_____
	(Untimed)	_____
Total	(Timed)	_____
	(Untimed)	_____

****

Plan for Improvement:

Peer Review of Writing Form

Directions:

1. Exchange your essay with a fellow student.
2. Carefully read your classmate's essay. Respond to the questions on this list by answering YES or NO.
3. Write comments on the back of this sheet - both positive and negative - using your answers to the questions as a guide. Return original essay with this form to your fellow student.
4. Revise your own essay using peer comments to assist.
5. Exchange papers with a peer and repeat the Peer Review process.

		Original Essay	Revised Essay
A.	**Content.**		
1.	Is the main idea clear?	_____	_____
2.	Does the essay hold your interest?	_____	_____
3.	Does it make sense to you?	_____	_____
4.	Do the paragraphs follow a logical order?	_____	_____
5.	Should any of the paragraphs be expanded?	_____	_____
6.	Should any paragraphs be shortened or deleted?	_____	_____
7.	Are there transitions between paragraphs?	_____	_____
8.	Does each sentence make sense?	_____	_____
B.	**Mechanics.**		
1.	Are there any confusing words?	_____	_____
2.	Are the pronoun referents clear?	_____	_____
3.	Is the language precise?	_____	_____
4.	Are the words varied?	_____	_____
5.	Are the sentences too wordy?	_____	_____
6.	Are there sentence fragments?	_____	_____
7.	Are there run-on sentences?	_____	_____
8.	Is there subject-verb agreement?	_____	_____
9.	Is the verb tense consistent?	_____	_____
10.	Are words spelled correctly?	_____	_____
11.	Is punctuation appropriate?	_____	_____
12.	Are capital letters used where needed?	_____	_____

Turn to other side and use provided space to comment on the essays.

Peer Review Writing Form **Page 2**

Please comment using your answers to the questions on the front page to help the writer understand both the strengths and weaknesses of the essay. Highlight areas that need revision.

1. Original essay:

Please provide comments on the revisions made in the revised essay. Did the revisions clarify the content and correct the mechanics?

2. Revised essay:

BCP Level 1
Study Skills/Test Taking Course Evaluation

Please rate the following activities by circling the appropriate number.

Study Skills Sessions

	Very Useful				Not at all Useful
The learning process	1	2	3	4	5
Self-monitoring of study strategies	1	2	3	4	5
Acquisition strategies for lecture	1	2	3	4	5
Reformatting text or lecture information	1	2	3	4	5
Strategies for reading texts	1	2	3	4	5
Note-taking strategies	1	2	3	4	5
Test-taking strategies	1	2	3	4	5
Time management	1	2	3	4	5
Problem solving activities	1	2	3	4	5
Stress management	1	2	3	4	5

Test Taking Sessions

Strategies for reading comprehension	1	2	3	4	5
Nelson-Denny Reading Test	1	2	3	4	5
Writing and revising essays	1	2	3	4	5
Individual meeting with instructor	1	2	3	4	5

BCP Level I
Study Skills/Test Taking Course Evaluations **Page 2**

This is what I found most beneficial about Cognitive Skills:

Please describe the amount of effort and energy you put into this class. Explain any strategies you changed or intensified during the program.

I would make these suggestions for next year's Cognitive Skills classes:

APPENDIX C

Biomedical Careers Program Level II

Section One: Materials for Study Strategies

•Study Strategies Course Syllabus (2 Pages)
•Time Management Scenarios
•Time Management-Student Schedule Example 1
•Time Management-Student Schedule Example 2
•Time Management-Blank Schedule

•Description of Weekly Strategies Exercise
•Weekly Strategies Exercise-Preliminary Questionnaire (2 pages)
•Weekly Strategies Exercise-Questionnaire #1
•Weekly Strategies Exercise-Questionnaire #2 (2 pages)
•Weekly Strategies Exercise-Questionnaire #3 (2 pages)
•Weekly Strategies Exercise-Questionnaire #4 (2 pages)
•Weekly Strategies Exercise-Questionnaire #5 (3 pages)

•Note-taking Formats with Examples, #1
•Note-taking Formats with Examples, #2
•Note-taking Formats with Examples, #3

•Strategies for Learning and Remembering

•Textbook Passage Notes: Example 1
•Textbook Passage Notes: Example 2

•Error Analysis Form

•Test Taking Strategies

•Problem Solving Questionnaire

Course Syllabus
BCP Level II: Study Strategies

Course Objectives:

1. Students will increase awareness of the effectiveness of current reading and study practices for learning sciences.
2. Students will expand their repertoire of reading and study strategies.
3. Students will apply more effective study strategies to increase competency on exams.

Course Format:

A variety of instructional formats will be used in class: lectures, discussions and group activities. Additional time outside of class will be scheduled for individual consultations with Instructor.

Requirements:

1. Attendance and punctuality are required for all group sessions and for your scheduled individual consultations.
2. Active participation is required during all class sessions.
3. Assignments are to be submitted promptly. Students are expected to incorporate feedback into subsequent assignments.

Grading:

You will receive one grade for the summer course. Your Cognitive Skills grade will be averaged into your total grade. You will be evaluated on your attendance, punctuality, submission of assignments, and, when appropriate, your willingness to incorporate new strategies.

Course Syllabus
BCP Level II: Study Strategies

Week 1 **Introduction to Course**

- Introductions
- Course goals, requirements, format, grading
- Activity: The Nelson-Denny Reading Test
- Schedule individual appointment

Week 2 **The Learning Process**

- Cognitive Model of Learning & Stages of Learning

Time Management

- Developing effective time management and study planning skills

Weekly Strategies Exercise (WSE)

- Introduction
- Activity: WSE questionnaire

Week 3 **Skills for Acquiring Information from Lectures**

- Strategies that enhance understanding
- Previewing, Note-taking, Reformatting notes

WSE: Discussion and Activity

Week 4 **Skills for Acquiring Information from Science Textbooks**

- Using the text for Previewing, Reviewing, & Focused Reading

WSE: Discussion and Activity

Week 5 **Maintenance: Learning and Remembering**

- Note-taking Skills
- Organizing and reformatting information
- Memory strategies

WSE: Discussion and Activity

Week 6 **Proficiency: Developing a Study Plan**

- Planning a study schedule
- Active review and self-assessment
- Test-taking strategies

WSE: Discussion and Activity

Week 7 **Problem-Solving Skills**
WSE: Discussion and Activity
Course Summary

BCP Level II – Time Management Scenarios

Each of the following vignettes describes a hypothetical student. Read each in turn and (1) identify the time management issues raised, and (2) make suggestions that would enable this student to resolve them.

1. J. is a pre-med student. He is taking first period classes most days this semester because that is when his friend, B. likes to take them and they always take their science classes together. J. likes to study late at night after his room-mates have gone to sleep. He feels this is when he is able to concentrate best and learn the material most effectively. But now he finds himself becoming sleepy in his early classes and losing concentration, and spending a lot of time in the evening mastering the material.

2. P. is a junior biology major. She has received decent grades in her science courses but often loses marks due to papers and reports turned in late. She knows she could be an A student if only she could keep tabs on her assignments. P. writes down the assignment and the due date on her notebook or a slip of paper, but then forgets about it until a friend or professor mentions the assignment again. She always seems to run out of time for studying for exams and consequently crams a lot of material in the day before, and she misses appointments with friends and forgets to make important phone calls.

3. A. is having trouble following the material in lecture. He commutes by bus to school and is often late for class. Once in class, he tries to write down everything the professor talks about, as well as all the notes and diagrams from the overheads, even though the professor has told the class that much of the material is in the textbook. A. gets lost because he misses half of what the professor is saying while he is trying to take down what she said before. He also doesn't understand many of the terms or definitions used during lecture. At the end of the week, A. tries to make sense of his notes, but much is illegible because he was writing so fast and using abbreviations for terms that he now doesn't remember. In fact, he doesn't remember much of the lecture at all.

BCP Level II: Time Management – Student Schedule Example 1

TIME	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
8:30					Mentorship at RWJ	Clean Room	
9:30	Biochem	Cog Skills	Genetics Class	Cog Skills			Gym
10:30							
11:30		Genetics		Genetics		GYM	Tom's house
12:30	LUNCH						
1:30	Genetics	LUNCH	LUNCH			Study	Study
2:30			Lab Report	LUNCH			
3:30		Study	Seminar	Blochem Review			
4:30				DINNER			
5:30	DINNER		Drive HOME and RELAX	Library	Go HOME Go on Computer		DINNER w/Family
6:30		Genetics		Genetics	Pick up Mom from Work	Father's Day Shopping	
7:30	Bike Riding		DINNER		Gym		Movie w/Family
8:30			Gym				
9:30					Study		
10:30	Study					Type Paper	Study
11:30		Prepare for Tomorrow	Prepare for Tomorrow	Prepare for Tomorrow			

BCP Level II: Time Management – Student Schedule Example 2

TIME	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
8:30	Wake-up/ eat	Wake-up/ eat	Wake-up/ eat	Wake-up/ eat	Wake-up/ eat	Go home or Away for the Weekend	Go home or Away for the Weekend
9:30	Biochem	Cog skills	Genetics EXAM I	Cog skills	Mentorship St. Peters		
10:30							
11:30		Gen. Lab		Genetics Lab			
12:30	EAT		RELAX/ SLEEP				
1:30	Genetics	EAT/RELAX	Gym or Try to Read				
2:30		Intro to Medicine	Go to Hospital	Gym – Lift Weights and Basketball			
3:30			Buy Calling Card				
4:30	EAT/RELAX Till 5:00	EAT/RELAX Till 5:00	Medical Imagery	Study Biochem			
5:30	Go to the Library	Go to the Library	Read over some Biochem 6:00		Go Home and EAT		
6:30	Study Genetics	Study Genetics	Mall (if have not bought sneakers) or Sleep				
7:30	7:45	7:45					
8:30	8:00 RELAX/EAT	8:00 RELAX/EAT Phone Calls	EAT/TV				
9:30	Study Genetics	Genetics - Read Chapters and Get Notes	Calls	EAT	Study MCAT		
10:30	Read and Do Problems Not Done		Study Anything	TV-Knicks			
11:30	Study Bio-Chem Or Do Genetics Lab		Knicks Game	Study Genetics			

BCP Level II: Time Management, Blank Schedule

TIME	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
8:30							
9:30							
10:30							
11:30							
12:30							
1:30							
2:30							
3:30							
4:30							
5:30							
6:30							
7:30							
8:30							
9:30							
10:30							
11:30							

Description of Weekly Strategies Exercise (BCP Level II)

Objectives:
This exercise is designed to assist students in developing the characteristics of active learners. Completion of the questionnaires helps students identify and actively report on their use of specific strategies for achieving the following studying and learning objectives: acquisition from lecture, acquisition from reading, maintenance, achieving proficiency, and time management. The students are also prompted to evaluate the effectiveness of these strategies and to make changes where necessary.

Reporting procedures:
During the first week of the program, students report on their current use of study/learning strategies as follows:

I. Students report prior use of 26 study/learning strategies related to the cognitive model of learning: acquisition from lecture, acquisition from reading, maintenance, achieving proficiency, and time management.
II. Students rate how well they used the strategy, on a 4-point scale, from 1 = very poorly, need substantial improvement to 4 = very well, rarely have difficulty.
III. Students report the extent to which they used the strategy over the course of the semester prior to the summer program.

Subsequent reports:
In subsequent weeks, one element of the model of learning and its associated strategies is discussed in lecture. The students are encouraged to implement the specific strategies in their studying and learning over the course of the following week. At the beginning of the next class meeting, the students complete the first follow-up questionnaire, which directs them to "think about the ways you have approached your reading/studying this week and how you have worked to meet the following objective (e.g., Time management). First, the students report which strategies they used over the past week. Next, they explain how they used the strategies and how effective they were. Finally, they describe how they would change their approach, if at all.

The students complete this process each week. As each new objective is introduced, along with new strategies to achieve it, the students are also asked to report on the objectives and strategies from the previous week(s). For example, in Week 3, the main focus is the students' report of their use of Acquisition from lecture strategies, but they also report on Time management strategies, which were the main focus of the preceding week. Each week, the number of supplemental objectives and strategies increases, but the main focus of the report is always the most recent objective and strategies identified in lecture.

BCP Level II
Weekly Strategies Exercise
Preliminary Questionnaire

Name: _____ Date: _____

Please carefully read each learning objective and the study strategies listed below. For each strategy:

A) Check whether you have ever used the strategy

B) Rate how well you feel you use the strategy using the following scale:
4 = very well, rarely have difficulty
3 = somewhat well, sometimes have difficulty
2 = somewhat poorly, need some improvement
1 = very poorly, need substantial improvement

C) Indicate the extent to which you have used the strategy over the past semester (please circle)

I. **Objective: TIME MANAGEMENT**

Check	Strategy	Rating	Never	Rarely	Some-times	Usually	Very often
___	Review course material regularly	1 2 3 4	0	1	2	3	4
___	Stay up-to-date with studying	1 2 3 4	0	1	2	3	4
___	Make a study schedule	1 2 3 4	0	1	2	3	4
___	Plan specific goals for each study session	1 2 3 4	0	1	2	3	4
___	Monitor whether you are meeting your study goals	1 2 3 4	0	1	2	3	4

II. **Objective: ACQUISITION FROM LECTURE**

Check	Strategy	Rating	Never	Rarely	Some-times	Usually	Very often
___	Attend lectures	1 2 3 4	0	1	2	3	4
___	Prepare in advance for lectures	1 2 3 4	0	1	2	3	4
___	Try to understand & clarify material within 1 – 2 days of lecture	1 2 3 4	0	1	2	3	4
___	Determine how new material is related to previously learned material	1 2 3 4	0	1	2	3	4

III. Objective: ACQUISITION FROM READING

Check	Strategy	Rating	Never	Rarely	Some-times	Usually	Very often
___	Prepare in advance (preview)	1 2 3 4	0	1	2	3	4
___	Read from another resource to try to understand & clarify material	1 2 3 4	0	1	2	3	4
___	Talk to a teacher or peer to try to understand & clarify material	1 2 3 4	0	1	2	3	4
___	Integrate new material with something I already know	1 2 3 4	0	1	2	3	4
___	Create review materials while reading	1 2 3 4	0	1	2	3	4

IV. Objective: MAINTENANCE AND MEMORY

Check	Strategy	Rating	Never	Rarely	Some-times	Usually	Very often
___	Rephrase material in your own words while studying	1 2 3 4	0	1	2	3	4
___	Create review materials while studying	1 2 3 4	0	1	2	3	4
___	Evaluate your knowledge by recalling from memory	1 2 3 4	0	1	2	3	4
___	Monitor understanding while studying	1 2 3 4	0	1	2	3	4
___	Monitor concentration while studying	1 2 3 4	0	1	2	3	4
___	Engage in cumulative review & spaced practice	1 2 3 4	0	1	2	3	4

V. Objective: PROFICIENCY – PREPARING FOR AND TAKING TESTS

Check	Strategy	Rating	Never	Rarely	Some-times	Usually	Very often
___	Evaluate your knowledge by recalling from memory	1 2 3 4	0	1	2	3	4
___	Use old exam questions in a test-like way to prepare for actual exam	1 2 3 4	0	1	2	3	4
___	Analyze errors from questions to identify areas needing further study	1 2 3 4	0	1	2	3	4
___	Review material regularly to avoid cramming	1 2 3 4	0	1	2	3	4
___	Try to predict what material will be on exam	1 2 3 4	0	1	2	3	4
___	Try to predict how you will do on exam	1 2 3 4	0	1	2	3	4

BCP Level II
Weekly Strategies Exercise
Questionnaire #1

Name: _____ Date: _____

Directions: Think about the ways you have approached your reading/studying this week and how you have worked to meet the following objective.

Objective: TIME MANAGEMENT

1. Consult the list of strategies below and indicate which one(s) you used over the past week:
   ___ Review course material regularly
   ___ Stay up-to-date with studying
   ___ Make a study schedule
   ___ Plan specific goals for each study session
   ___ Monitor whether you are meeting your study goals

2. Explain how you used these strategies and how effective they were:

3. Would you change your approach? How?

BCP Level II
Weekly Strategies Exercise
Questionnaire #2

Name: _____ Date: _____

Directions: Think about the ways you have approached your reading/studying this week and how you have worked to meet the following objective.

Objective: ACQUISITION FROM LECTURE

1. Consult the list of strategies below and indicate which one(s) you used over the past week:
   ___ Attend lectures
   ___ Prepare in advance (Preview)
   ___ try to understand & clarify material within 1 – 2 days of lecture
   ___ Determine how new material is related to previously learned material

2. Explain how you used these strategies and how effective they were:

3. Would you change your approach? How?

BCP Level II : Weekly Strategies Questionnaire #2 **Page 2**

Objective: TIME MANAGEMENT

1. Consult the list of strategies below and indicate which one(s) you used over the past week:
   ___ Review course material regularly
   ___ Stay up-to-date with studying
   ___ Make a study schedule
   ___ Plan specific goals for each study session
   ___ Monitor whether you are meeting your study goals

2. Explain how you used these strategies and how effective they were:

3. Would you change your approach? How?

BCP Level II
Weekly Strategies Exercise
Questionnaire #3

Name: _____ Date: _____

Directions: Think about the ways you have approached your reading/studying this week and how you have worked to meet the following objective.

Objective: ACQUISITION FROM READING

1. Consult the list of strategies below and indicate which one(s) you used over the past week:
   ___ Prepare in advance (Preview)
   ___ Read from another resource to try to understand & clarify material
   ___ talk to a teacher or peer to try to understand & clarify material
   ___ Integrate new material with something I already know
   ___ Create review materials while reading

2. Explain how you used these strategies and how effective they were:

3. Would you change your approach? How?

Objective: TIME MANAGEMENT

1. Consult the list of strategies below and indicate which one(s) you used over the past week:
   ___ Review course material regularly
   ___ Stay up-to-date with studying
   ___ Make a study schedule
   ___ Plan specific goals for each study session
   ___ Monitor whether you are meeting your study goals

2. Explain how you used these strategies and how effective they were:

3. Would you change your approach? How?

Objective: ACQUISITION FROM LECTURE

1. Consult the list of strategies below and indicate which one(s) you used over the past week:
   ___ Attend lectures
   ___ Prepare in advance (Preview)
   ___ try to understand & clarify material within 1 – 2 days of lecture
   ___ Determine how new material is related to previously learned material

2. Explain how you used these strategies and how effective they were:

3. Would you change your approach? How?

BCP Level II
Weekly Strategies Exercise
Questionnaire #4

Name: _____ Date: _____

Directions: Think about the ways you have approached your reading/studying this week and how you have worked to meet the following objective.

Objective: MAINTENANCE AND MEMORY

1. Consult the list of strategies below and indicate which one(s) you used over the past week:
   ___ Rephrase material in your own words while studying
   ___ Create review materials while studying
   ___ Evaluate your knowledge by recalling from memory
   ___ Monitor understanding while studying
   ___ Monitor concentration while studying
   ___ Engage in cumulative review

2. Explain how you used these strategies and how effective they were:

3. Would you change your approach? How?

Objective: TIME MANAGEMENT

1. Consult the list of strategies below and indicate which one(s) you used over the past week:
   ___ Review course material regularly
   ___ Stay up-to-date with studying
   ___ Make a study schedule
   ___ Plan specific goals for each study session
   ___ Monitor whether you are meeting your study goals

2. Explain how you used these strategies and how effective they were:

3. Would you change your approach? How?

Objective: ACQUISITION FROM LECTURE

1. Consult the list of strategies below and indicate which one(s) you used over the past week:
   ___ Attend lectures
   ___ Prepare in advance (Preview)
   ___ try to understand & clarify material within 1 – 2 days of lecture
   ___ Determine how new material is related to previously learned material

2. Explain how you used these strategies and how effective they were:

3. Would you change your approach? How?

Objective: ACQUISITION FROM READING

1. Consult the list of strategies below and indicate which one(s) you used over the past week:
   ___ Prepare in advance (Preview)
   ___ Read from another resource to try to understand & clarify material
   ___ talk to a teacher or peer to try to understand & clarify material
   ___ Integrate new material with something I already know
   ___ Create review materials while reading

2. Explain how you used these strategies and how effective they were:

3. Would you change your approach? How?

BCP Level II
Weekly Strategies Exercise
Questionnaire #5

Name: _____ Date: _____

Directions: Think about the ways you have approached your reading/studying this week and how you have worked to meet the following objective.

Objective: PREPARING FOR AND TAKING TESTS

1. Consult the list of strategies below and indicate which one(s) you used over the past week:
   ___ Evaluate your knowledge by recalling it from memory
   ___ Use old exams in a test-like way to prepare for actual exam
   ___ Analyze errors from questions to identify areas needing further study
   ___ Review material regularly to avoid cramming
   ___ Try to predict what material will be on exam
   ___ Try to predict how you will do on exam

2. Explain how you used these strategies and how effective they were:

3. Would you change your approach? How?

Objective: TIME MANAGEMENT

1. Consult the list of strategies below and indicate which one(s) you used over the past week:
   ___ Review course material regularly
   ___ Stay up-to-date with studying
   ___ Make a study schedule
   ___ Plan specific goals for each study session
   ___ Monitor whether you are meeting your study goals

2. Explain how you used these strategies and how effective they were:

3. Would you change your approach? How?

Objective: ACQUISITION FROM LECTURE

1. Consult the list of strategies below and indicate which one(s) you used over the past week:
   ___ Attend lectures
   ___ Prepare in advance (Preview)
   ___ Try to understand & clarify material within 1 – 2 days of lecture
   ___ Determine how new material is related to previously learned material

2. Explain how you used these strategies and how effective they were:

3. Would you change your approach? How?

Objective: ACQUISITION FROM READING

1. Consult the list of strategies below and indicate which one(s) you used over the past week:
   ___ Prepare in advance (Preview)
   ___ Read from another resource to try to understand & clarify material
   ___ Talk to a teacher or peer to try to understand & clarify material
   ___ Integrate new material with something I already know
   ___ Create review materials while reading

2. Explain how you used these strategies and how effective they were:

3. Would you change your approach? How?

Objective: MAINTENANCE AND MEMORY

1. Consult the list of strategies below and indicate which one(s) you used over the past week:
   ___ Rephrase material in your own words while studying
   ___ Create review materials while studying
   ___ Evaluate your knowledge by recalling from memory
   ___ Monitor understanding while studying
   ___ Monitor concentration while studying
   ___ Engage in cumulative review

2. Explain how you used these strategies and how effective they were:

_____

_____

_____

3. Would you change your approach? How?

_____

_____

_____

BCP Level II – Note-taking Formats with Examples, #1

2" REDUCE TO CONCISE PHRASES	5" RECORD MAIN IDEA AND DETAILS	1" POINTS TO EXPAND
Mitochondria *ATP*	*Mitochondria* *1. Main source of ATP in cells*	
Not RBCs	*2. All cells EXCEPT Red Blood Cells*	
ETC	*3. Electron Transport Chain (ETC)* • *takes electrons from substrates* • *generates energy*	*ETC elecs. enter chain at complex I or II*
	• *energy : oxidative phosphorylation – ATP* • *energy can be released as heat*	*OP – Complex V*

BCP Level II – Note-taking Formats with Examples, #2

2" REDUCE KEY PHRASES FOR RECITING & REVIEW	3" TEXTBOOK NOTES	3" LECTURE NOTES
Agglutination	*Precipitation occurs b/t antibody & antigen molecules in soluble form Agglutination – in which the antibodies directed against surface antigens of particulate materials such as micro-organisms or erythrocytes, link them together in large clumps or aggregates*	*Agglutination WIDAL test of typhoid fever*
Lysis		*Lysis- complement fixation test is all about Lysis – membrane attracts immune complex, cytolosis of complements and hemolysis*

BCP Level II – Note-taking Formats with Examples, #3

3" RECORD MAIN TOPIC	5" IMPORTANT DETAILS AND EXAMPLES
Precipitation	*Precipitation- immunodiffusion & double immunodiffusion method are based on principles of precipitation*
Neutralization	*Neutralization – (toxin – antitoxin reactions) SHICK test for the diagnosis of diptheria utilizes this principle* *+ test indicates absence of antibody for dip. toxin* *- test indicates there was sufficient anti-toxin to neutralize the toxin injected*

- Pretty difficult task to remember a string of information such as this one:

  GBRIRSORGNYCFBIUSAABCGOVCIACBS

- But, if this string of letters is broken down into manageable and meaningful chunks, it probably could be remembered more easily:

  GBR IRS FOX NYC FBI USA ABC GOV CIA CBS

- It still might be difficult to remember these 3-letter abbreviations, but a further re-organization by meaningful categories could be made:

Place names:	GBR NYC USA
Organizations:	CIA FBI GOV IRS
TV companies:	CBS ABC FOX

- You might also want to remember that there are 10 abbreviations.
- This allows you to check that you have them all.

BCP Level II –Textbook Passage Notes: Example 1

From: Immunology (Chapter II). Stryer, L. (1995). Biochemistry. New York: Freeman.

The Complement System

Complements are small plasma proteins about 20 of them some of which are enzymes, some are control molecules and some are structural proteins with no enzymatic activity. Complements enhance the process of phagacytosis, lyse microorganisms directly and regulate inflammation and immune responses. Initially complements are inactive but become activated in 2 pathways : the classical pathway and the alternate pathway (also called properdin pathway)

1) The classical pathway involves the binding of antibodies to antigens and involves complement C7, C4, and C2.
2) The alternative pathway involves the contact between complements and polysaccharides and involves complement C3 through C9 and factors B, D, P. C3 splits into C3a and C3b which participate in 3 kinds of defenses.
   a) opsanization: C3b is responsible for opsanization it binds to the surface of the antigen and makes the antigen more susceptible to phagocytosis and elimination.

   b) inflammation – adhere to the membranes of basophils and most cells causing the release of histamine which increase the permeability of blood vessels. It's also facilitated by C3a, C4a and C5a molecules.

   c) Membrane attach complex – the cleavage of C5. C5 is cleaved forming C5a and C5b using the enzyme C3b. Membrane attach complex also called immune cylolysis will lead to membrane damage and lysis probably by osmotic swelling.

I need to clarify the role of inflammation?
What is inflammation and how does it come into place?

BCP Level II – Textbook Passage Notes; Example 2
From: Immunology (Chapter II). Stryer, L. (1995). Biochemistry. New York: Freeman.

The Complement System

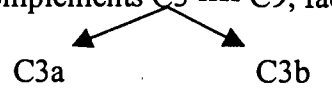
1. Complements 20+ small plasma proteins
   - Enzymes
   - Control molecules
   - Structural proteins w/o enzymatic activity

2. Enhance processes of:
   - Phagocytosis
   - Lysis of micro-organisms directly
   - Regulate inflammation & immune responses

3. Inactive ---- b/c active in 2 pathways

   I. CLASSICAL PATHWAY
   - Binding of antibodies ----- antigens
   - Complement C7, C4, & C2

   II. ALTERNATIVE PATHWAY
   - Contact b/t complements & polysacch
   - Complements C3 ---- C9, factors B, D, & P



C3B : THREE TYPES OF DEFENSES

1. Opsinization
   - C3b binds to surface of antigen
   - Antigen susceptible to phago & elimination

2. Inflammation
   → adhere to membranes of basophils & mast cells
   → release of histadine
   → increase permeability of blood vessels

3. membrane attack complex (MAC)
   - cleavage of C5 by enzyme C3b → C5a & C5b
   - MAC = immune cylolysis enzyme →

   → membrane damage & lysis (?? By osmotic swelling)

Questions:

1. Clarify the role of inflammation
   - What is inflammation?
   - How does it happen?

ERROR ANALYSIS FORM

SUBJECT: _____ EXAM #: _____ TOPICS COVERED: _____

		CONTENT				APPLICATION	TEST-TAKING	
Q #	TOPIC	NEVER SAW	DECIDED NOT TO STUDY	STUDIED BUT LEARNED INCORRECTLY	STUDIED BUT COULDNT RECALL	STUDIED AND REMEMBERED BASIC INFO. BUT COULDN'T APPLY IT TO QUESTION	MISREAD/ MISINTERPRETED	IMPULSIVE/ OVER CONFIDENT
ERROR TALLY:								

PACING: Did you finish on time? _____
Did you rush at the end? _____

BCP Level II
TEST-TAKING STRATEGIES

GENERAL STRATEGIES

1. Read all directions
2. Divide time
3. Read through to determine question difficulty
4. Answer easiest first
5. Don't spend too much time on one question
6. Check numbering to be sure answer sheet and test booklet correspond
7. Leave 5 – 10 minutes at end of test to review
8. Do NOT change an answer unless you can bring some NEW information to it or you feel VERY CERTAIN that your new answer is correct
9. Do error analysis of tests to check strengths and weaknesses in both content and strategy

STRATEGIES FOR MULTIPLE CHOICE TESTS

1. Read each question carefully for comprehension, not speed. Time is lost if you need to re-read every item
2. Mark the question stem in any way that is helpful to you. For example, underline key words and phrases, underline words that change meaning (negatives, except, most likely, etc)
3. When possible, quickly try to anticipate answer to question. However, be systematic in reading ALL the alternatives to avoid "impulsive answer" errors
4. Eliminate as many incorrect alternatives as you can
5. Avoid dwelling on an ambiguous item. Select a response and return to it later (a subsequent item may jog your memory)
6. Do NOT change an answer unless you can bring some NEW information to it or you feel VERY CERTAIN that your new answer is correct
7. Accept questions at face value – avoid looking for traps, tricks, or hidden meanings. If it sounds "too easy" it may be because you are very familiar with the material, not because there is a hidden trap
8. Bring a watch – set up "check points" in the test of approximately where you want to be at the end of 30 minutes, one hour, etc. Allow time to go back and review, if possible. Neither spend a lot of time on one question, nor rush through items, which may lead to careless errors
9. Usually there is no penalty for wrong answers. Therefore, mark an answer for every item

PROBLEM SOLVING QUESTIONNAIRE

Please use the scale below to indicate the ways YOU approach problem-solving.

		Never	Some-times	Always
1.	I think that most problems are going to be difficult to solve even before I see them.	1	2	3
2	With most problems, I think you either know the answer or you don't.	1	2	3
3.	If I don't get the answer right away, I usually give up.	1	2	3
4.	To see if I am on the right track, I ask myself questions about how I'm trying to solve the problem.	1	2	3
5.	I make silly mistakes because I tend to rush through problems and not read them carefully enough.	1	2	3
6.	I am willing to try out more than one approach to solving a problem.	1	2	3
7.	For most problems, there is usually only one right way to get the solution.	1	2	3
8.	I often feel like I'm guessing the answers to problems.	1	2	3
9.	I try to bring a mental picture to mind to see if I can think of ways to solve the problem.	1	2	3
10.	I try to relate the problem to others that I have seen before.	1	2	3
11.	I try to restate the problem as a diagram or picture to see if I can get to a solution.	1	2	3
12.	I try to break the problem down into smaller parts to try to get at the solution.	1	2	3

Please describe any personalized methods you have used in solving problems.

APPENDIX C

Biomedical Careers Program Level II

Section Two: Materials for Test Taking

- Test Taking Course Syllabus (2 pages)
- MCAT Survey
- Score Report for Nelson-Denny Reading Test
- Holistic Scoring Exercise (2 pages)
- Study Strategies/Test Taking Course Evaluation Form (2 pages)

Course Syllabus
BCP Level II: Test-Taking Strategies

Course Objectives:

1. Students will become familiar with skills needed for improving scores on the MCAT Verbal Reasoning and MCAT Writing Sample

2. Students will assess strengths and weaknesses in reading comprehension and writing skills

3. Students will develop a plan and practice skills to improve scores on the MCAT Verbal Reasoning and MCAT Writing Sample

Instructional Format:

The majority of instructional time will require you to participate in "hands on" activities. These will include reading, writing, providing feedback to your peers and participating in small group activities.

Requirements:

1. Attendance and punctuality are required for all group sessions and for your scheduled individual consultations.

2. Active participation is required during all class sessions.

3. Assignments are to be submitted promptly. Students are expected to incorporate feedback into subsequent assignments.

Grading:

You will receive one grade for the summer course. Your Cognitive Skills grade will be averaged into your total grade. You will be evaluated on your attendance, punctuality, submission of assignments, and, when appropriate, your success in incorporating feedback into subsequent assignments.

Course Syllabus
BCP Level II: Test-Taking Strategies

Week 1 **Introduction to Course**
- Course requirements: Assignments, Expectations, Grading
- General information about the MCAT
- Activity: Verbal Reasoning: Pre-test

Week 2 **The Reading Process – Application to the MCAT**
- Reading Strategies
- Feedback on the Nelson-Denny
- Activity: Verbal Reasoning passages (individual & small group)

Week 3 **The Writing Process – Application to the MCAT**
- Activity: Essay Writing
- Activity: Verbal Reasoning passages (individual & small group)

Week 4 **MCAT Verbal Reasoning**
- Activity: Verbal Reasoning passages (individual & small group)

Week 5 **Evaluating Writing Samples: Understanding Holistic scoring**
- Activity: Evaluate sample essays

Week 6 **MCAT Verbal Reasoning**
- Activity: Verbal Reasoning passages (individual & small group)

Week 7 **Stress Management**
MCAT Verbal Reasoning & Course Evaluation
- Activity: Verbal Reasoning post-test
- Course Evaluation

BCP Level II

MCAT Survey

Name _____ BCP Level _____

Have you taken the MCAT? (Please circle.) Yes* No**

* If **Yes**, answer questions 5 - 9

** If **No**, answer questions 1 - 4

1. When do you plan to take the MCAT? (Please circle.)

   August 1999 Never

   April 2000 Other _____

   August 2000

2. Are you waiting to hear about admission to Access-Med Phase 2? Yes No

3. Have you begun to prepare for the MCAT? Yes No

   What do you plan to do (or what have you already begun to do) to prepare?

4. Have you taken an MCAT preparatory course? Yes No

   If Yes, which one did you take?

   Dr. Khan's course at Rutgers ___

   Other (write in) _____

If YES:

5. When did you take the MCAT? _____

6. Were you pleased with your scores? Yes No

7. What were your scores?

   Verbal Reasoning _____

   Physical Sciences _____

   Writing Sample _____

   Biological Sciences _____

8. Do you plan to take the test again? Yes No When? _____

9. What areas are you interested in improving?

BCP Level I: Score Report for the Nelson-Denny Reading Test

Name: _____ College Year Completed _____

Date: _____ Form _____

Sub-Test		Percentile Score
Vocabulary	(Timed)	_____
	(Untimed)	_____
Comprehension	(Timed)	_____
	(Untimed)	_____
Total	(Timed)	_____
	(Untimed)	_____

****

Plan for Improvement:

BCP Level II: Holistic Scoring Exercise

Directions:

1. Ground rules:
   Do not try to name the person whose essay you are reading.
   Do not self-disclose.

2. Each of you is to read each essay and assign a score (1 to 6) based on the holistic scoring guidelines in the MCAT manual.
   Be certain to consider the reasons for the score you assign.

3. Meet as a small group to compare scores.
   A. Select a scribe and a reporter to speak for the groups
   B. Assign one number to the essay based on the scoring guidelines in the MCAT manual.
   C. Write down the reasons for your decision.

4. Each small group will report to the class as a whole.

Essay #1
Reasons: Score _____

Essay #2
Reasons: Score _____

Essay #3
Reasons: Score _____

Essay #4
Reasons: Score _____

BCP Level II: Study Strategies/Test-Taking Course Evaluation Form

The Cognitive Skills component of the BCP program is revised each year to make it more effective and useful for participants. Please help us by completing this questionnaire.

A. Please rate each of the following activities by circling the appropriate number.

Study Skills Sessions

	Very Useful				Not at all Useful
Discussing the Cognitive Model of Learning	5	4	3	2	1
Completing Weekly Strategies Exercise	5	4	3	2	1
Previewing for lectures exercise	5	4	3	2	1
Note-taking exercise	5	4	3	2	1
Previewing for reading material exercise	5	4	3	2	1
Organizing and Reformatting material exercise	5	4	3	2	1
Practicing memory strategies	5	4	3	2	1
Time management planning	5	4	3	2	1
Problem-Solving exercises	5	4	3	2	1

Verbal Reasoning and Writing Sessions

	Very Useful				Not at all Useful
Taking the Nelson-Denny Reading Test	5	4	3	2	1
Feedback on Nelson-Denny Reading Test	5	4	3	2	1
MCAT Verbal Reasoning Practice (individual)	5	4	3	2	1
MCAT Verbal Reasoning Practice (small group)	5	4	3	2	1
Writing MCAT essay	5	4	3	2	1
Evaluating writing samples: Holistic Scoring Exercise	5	4	3	2	1
Feedback on Essay	5	4	3	2	1
Stress Management Exercise	5	4	3	2	1
Individual appointments with Instructor	5	4	3	2	1

Continued

B. What did you find most beneficial about the Cognitive Skills component of the program?

C. Please describe the amount of effort and energy you put into this class. Explain how you changed or intensified your use of any of the strategies discussed or demonstrated in class.

D. What suggestions do you have for next year's Cognitive Skills classes. Please be as specific as possible.

Thank you for taking the time to complete this evaluation.

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement (OERI)
Educational Resources Information Center (ERIC)

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