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notes

Note-Taking Skills

Taking Notes from Lectures

Good note taking is an essential part of student life. It helps you to remember what you have heard, identify key points, focus your attention, promote active learning and prepare for tests and exams. There are a number of proven methods you can use and some will be briefly reviewed.

General guidelines for taking notes

- Review the course outline in advance of class to understand the focus of each lecture and how each lecture fits in with the others.
- Review previous notes before your lecture.
- Identify what you want to learn from the lecture.
- Come with an open mind and do not let your perspectives about the content of the lecture interfere with note taking.
- Use abbreviations (e.g., gov't).
- Back up a copy of your notes if you are using a lap top or note book.
- Leave a few spaces if you cannot record the information quickly or put question marks (?) beside something you do not understand to follow up with later.
- Meet with classmates and compare notes; you may have heard something differently than the others.
- Do not attempt to write down everything the professor says; instead spend time listening and jotting down the main points.
- Recognize the main components of a lecture and take notes accordingly:

The introduction:

- listen for the main themes to be discussed

During the body of a lecture pay attention and record:

- the material written on the board.
- the main ideas, points or concepts.
- the points that are repeated or emphasized.
- the formulas, definitions, specific facts, examples, references, questions and answers.
- word signals such as (2 points of view, most importantly).
- summaries at the end of each major area.

The conclusion:

- listen for the key points that are summarized.

The Cornell Method of Note-Taking

This is a highly recommended method of note taking which takes about 5-10 minutes per day per class. It is recommended that you do this immediately after class if possible or within 24 hours after the lecture because we forget much of what we hear in lectures quickly. This simple method of note taking has many benefits. It deepens learning, helps with memory retention and helps to create test and exam notes.

- Step 1 - Record** your information using the guidelines listed above.
- Step 2 - Reduce** or summarize your lecture notes after the class in words or pictures or a combination of both; this will help you identify key concepts and reinforce what you have just learned.
- Step 3 - Recite** the information from your lecture and the summary you created out loud to reinforce your learning and to begin to commit it to memory.
- Step 4 - Reflect** on your lecture notes by considering whether the information makes sense to you, how it fits in with previous learning and what you do not understand.
- Step 5 - Review** your notes regularly to help you remember what you have learned.

RECALL COLUMN	RECORDING COLUMN
Key Words Cross Reference Test Questions	
	SUMMARY

Note taking from textbooks: The SQ4R Method

Reading chapters or articles can be time consuming but are necessary to complement your in-class learning. The SQ4R method is one way to efficiently read and take relevant notes.

- Step 1 - Survey** the outline of the chapter, its headings, sub headings, pictures, diagrams, and charts. This is like looking at a road map before going on a trip. This gives you an indication of the learning territory so that you can focus or direct your reading.
- Step 2 - Question** what you want to learn. This will guide in you in seeking out information from the text or article. Ask who, what, where, when and how related to the course content.
- Step 3 - Read** actively to search out the answers to your questions.
- Step 4 - Recite** out loud and in your own words what you have learned after you read a section of information.
- Step 5 - Record** relevant information and answers to your questions in your own words. Be focussed and succinct. Do not rewrite everything from the textbook.
- Step 6 - Review** your notes on a regular basis to help to remember the information.

NOTE-TAKING FOR MATH AND SCIENCE COURSES*

In addition to using some of the general guidelines suggested above, special strategies are helpful for note taking from lectures or textbooks for math and science classes.

Guidelines when reading from a textbook

- Read slowly. Every word and symbol is important. If you do not understand a symbol look it up in the glossary or on the web.
- Make note of any new theorems or terms. Underline or rewrite or label key procedures, concepts or formulas from the text.
- Create verbal explanations for abstract formulas.
- Do a problem after you have read it so that you understand what steps were taken to arrive at the answer. Ask what concepts, formulas, rules, or methods were used and why? What was the first step? What differences and similarities exist between the examples in the readings, lectures and homework? How is this material similar or different than previous material learned?
- Once you understand a concept make up your own examples.
- For science courses, try to determine the relationships between the information.
- For science courses, stop and review terminology beforehand to increase your understanding and comprehension as you are reading.
- For science courses, consider how you would apply the information.

Guidelines when taking notes from math and science lectures

- Before attending class look at the related chapter and the problems at the end of the chapter.
- Write down the main points, steps in explanations, definitions, examples and proofs.
- Carefully write the explanatory steps for how the professor solved the problem, the specific conditions of the problem and why that approach was taken. Determine what new concepts were used and applied and how they fit in with other material learned.
- Listen actively to the lecture and try to anticipate the consequences of a theorem or the next step that will be taken to solve a problem.
- Keep the conclusion in mind during a proof.
- Ask questions during class or of a tutor as soon as possible so you do not fall behind.

** The math related information was adapted from
<http://www.txstate.edu/slac/math/skills/StudySki.html>*

prepare

Preparing for Tests and Exams

Preparing for tests and exams is a continuous process. It involves attending all classes, taking good notes, doing assignments and readings, doing regular reviews and analyzing the course structure, lectures, and readings to identify key themes. All of this information and analysis will help you to understand what needs to be studied.

Regular reviews are also essential to remembering information. Try to set aside time every few weeks to review your notes and readings or practice math or science problems. This will not only help you to remember the information, but it will also highlight what you do not understand so that you can get help early.

You will need to schedule time to study for your tests and exams. Determine what your schedule is like and what other tests or assignments are also due during that time. Find out if final review sessions are being offered and when the professor or a tutor may be available for assistance. Try to give yourself 1 week to study for a test and 2 weeks to study for an exam.

The process outlined below is only a guideline. It describes the key steps to study effectively. You may go back and forth or skip some steps depending on how you have already organized your time and notes.

Step 1- Outline what needs to be studied:

- What are the major topics and sub-topics?
- How is the information connected?
- What has the professor emphasized in class?
- What is the scope of the test?
- What type of test will it be (essay, short answer, multiple choice etc.)?
- Are there any sections of information you do not understand that you can get help with immediately?

Step 2- Develop a study schedule and break down the information that needs to be studied:

- Identify how many pages of notes you need to review.
- Identify how many chapters you need to read.
- Determine how much material needs to be covered in the amount of time available.
- Have a goal for each study session (e.g. review lectures 1-3 and chapter 4).
- Determine priorities for review and make this realistic based on time.
- Identify how well you already understand each area; first focus on the most difficult areas that you suspect will be on the exam.

Step 3- Begin studying and practicing test questions:

- Use a variety of techniques to first understand concepts and then memorize the details. To help with understanding information, use summary sheets, concept maps (please see section on concept maps), reviews with study groups and also say the information out loud in your own words. To help with memorizing information, say the information out loud in your own words, create flash cards or other memory devices.
- Over learn important and hard to remember information.
- Do practice questions that your professor has given you, that are available in textbooks or online, or that you have created. Consider what questions you would ask if you were the professor.
- Simulate the test situation by doing practice questions using realistic time pressures.
- Once you understand each section that you are studying move onto the next.
- Write down any problems or questions you may have and develop a strategy to get help.

Step 4- Get help with problems and questions:

- Speak with your professors, classmates, or tutors to clarify anything you do not understand.
- Attend any study groups if you like to learn using this method.
- Attend any review sessions offered by the professor.
- Once you have received help with your problems and questions, review, practice or memorize your new learning.

PREPARING FOR MATH AND SCIENCE TESTS

- Review your notes to determine what has been emphasized.
- Understand the concepts behind the formulas or solution strategies.
- Create a summary sheet with key concepts, formulas, theorems and definitions.
- Remember math is learned by doing problems. Do all of the homework. Rework all problems found on quizzes, assignments and in the textbook. Identify why the procedures are applied to the problems. Identify the similarities and differences among the problems found in specific chapters and across chapters. Classify problems by problem type. Locate key symbols and phrases in the problem and identify which theorems or techniques to use.
- Ensure that you use a random sequence of problems when you are doing timed practice tests to simulate the test situation.

strategy

Test Taking Strategies

There are numerous ways you may be tested in your courses and programs. Becoming familiar with different strategies and practicing new test taking methods may take time but will enhance your marks and performance.

The following includes a review of general strategies that are useful for all tests and exams. Specific tips are also offered for objective tests, oral exams, essay type tests and math and science tests and exams.

General Suggestions for All Tests

- Arrive early. This will help you to feel focussed and calm.
- Bring all of the materials you will need for your test (calculators, pencils etc).
- Get enough sleep the night before.
- Eat a healthy meal before your exam.
- Relax and take a few deep breaths.
- Budget your time.
- Try to find out from the professor what types of questions will be asked.
- Do a brain dump. This means writing down any key formulas, definitions or memory techniques on your test or exam. By doing this your mind is freed up to focus on the questions.
- Read all of the test instructions and circle or underline key words in questions to make sure you understand what is being asked.
- Try to restate the question in your mind to help you understand what is being asked.
- Answer the questions you know first to give you confidence.
- Try to answer all or as many questions as possible to get partial marks.
- After the exam is marked, analyze your correct and incorrect answers and identify areas that require more study; if your professor does not return tests ask if you can meet to review your results.
- After the exam analyze the types of questions asked by the professor to better prepare for the next test or exam.
- Remember that test results are feedback and not an indication of your self-worth; making mistakes is part of the learning process.

Tips for Multiple Choice Questions

Try this approach first for answering multiple-choice questions:

1. Understand the question by underlining or circling key words and translating the question into your own words.
2. Cover the answers.
3. Predict the answer.
4. Uncover the alternatives and read all of them.
5. Find the answer that is closest to the one you predicted.

- Eliminate choices that are clearly wrong.
- Select numbered answers or values from the middle range rather than the extremes (unless of course you are certain that the answer is in the extreme range).
- Select answers that are longer and more descriptive unless you notice that the correct answers in your exam tend to be the shortest.
- Often the one choice stated in the most general terms is correct.
- Look at each option and decide if that option is true or false in and of itself.
- Often if 2 answers are very similar in meaning, either both are correct or both are incorrect.
- The correct answer may be one of a pair of direct opposites.
- Read all of the choices and decide whether each is a probable or not probable answer.
- Ask yourself if the question is dealing with a fact or an understanding of a fact and look for factual or applied answers respectively.
- The option of "all the above" should only be considered if at least 2 choices are correct.
- Look for answers that are grammatically correct; for instance, if the question ends with the word "an", look for an answer beginning with a vowel.
- Look for root words in the choices that are similar to the key words in the question.
- Remember to find the best answer to that specific question.
- Use information from one part of the test to help you with other answers.
- Watch for absolutes (never, always, only, all, every etc.) and qualifiers (usually, sometimes, few, many, frequently); absolutes limit options and you need to ask whether you can think of any exceptions; qualifiers allow exceptions and possibilities and therefore they often, but not always, make the answer true.
- If you have tried all of these options and need to guess, choose option B or C.

Tips for True or False Questions

- Look for absolutes (always, never, only, all, every); true absolute statements are rare, often making the statement false; take a moment to consider whether you can think of any exceptions and if you can, the statement is false.
- Look for qualifiers (some, most, often, usually, rarely, generally); these often make the statement true.
- Remember that a statement must be true 100% of the time.
- If there is more than one fact to the statement make sure that each part is correct; if one part of the statement is false then the whole statement is false.
- Statements that offer reasons are often false because there are usually many reasons why something occurs.
- Watch for inserted details such as names, dates and places as these are often inserted to make the option incorrect.
- Cross out double negatives to help clarify the statement (not possible becomes possible).
- Do not add extra meaning that is not intended by the professor.
- Often but not always, true/false tests contain more true answers.

Tips for Matching Questions

- Determine whether each item is used only once or not.
- Check off answers that you have already used.
- Use one list as the starting point and go through the second list to find a match.
- Go through the entire list before selecting a match because a more correct answer may be further down in the list.

Tips for Fill in the Blank or Sentence Completion Questions

- Pay attention to the space allotted for the answer as the professor is giving you a hint about the expected length of the answer.
- If you cannot think of an exact word(s) give a descriptive answer as you may get a partial mark.

Tips for Essay Questions

- Read all of the questions first to understand what is being asked. Notice key terms.
- Estimate the amount of time you will have to spend on each question.
- Answer the easiest question first to build your confidence.
- Jot down ideas that come to mind using any relevant vocabulary from the course.
- Make an outline of what you will write about. Identify the main points, your arguments and examples.
- Remember the basic structure for an essay exam: state what you are going to say in the essay (thesis statement), say what you said you were going to say (using supporting details and examples) and summarize what you said.
- Remember that each paragraph should start with a clear topic sentence.
- Pay attention to "action" or "direction" words, as they will indicate what type of answer is needed. These are words such as: illustrate, list, describe, analyze, compare, trace, contrast, prove, outline, justify etc. "Direction adjectives" ask for specific information and these include words such as: significant, essential, vital, major, and important.
- Use bullets or lists when possible.
- If you are running out of time write in point form rather than a full answer as you may receive partial marks.
- Notice the time and spend more time on questions worth more marks.
- Write as neatly as possible.

Tips for Oral Exams or Presentations

- Identify the focus of the presentation or exam.
- Do research. What information do I need? How much detail is required? What information can I leave out?
- Organize the information. For presentations, determine how can the information that is gathered, with supporting points or examples, be presented logically? What examples, anecdotes, statistics or diagrams are needed to reinforce your arguments and to make your presentation more interesting? Use this format: Tell them what you are going to say. Say it. Tell them what you said.
- Prepare speaking notes or cue cards. Check to see if these are allowed for oral exams.
- Learn your information by ensuring that you understand the central concepts.
- Anticipate the types of questions that might be asked and have responses already prepared.

- Practice your presentation or oral exam answers out loud. You can do this in front of a mirror or by video taping yourself.
- Time yourself.
- For oral exams, answer with more than a “yes” or “no” response. Use examples or points to demonstrate your knowledge.
- Focus on effective delivery techniques. Have good eye contact. Change and vary your tone, speed, words, body language and facial expressions. Speak clearly and slowly. Pause in between important points.
- Gain control of your anxiety. Breathe. Focus. Relax. Remember your presentation is not about you, but about sharing the material that is being presented.
- After your presentation or oral exam, evaluate yourself. What did you do well? What could you do differently next time?
- After the presentation or oral exam, review the comments offered by your examiner and/or classmates. What did you well? What could you do differently next time?

TIPS FOR MATH AND SCIENCE TESTS

- Remember that your first test will be the easiest. Do well on this test to offset potentially lower marks on future tests.
- Your tests will contain a variety of concepts that are mixed together. Learn to recognize them in random order.
- Write formulas or any memory devices on your page. This is called a brain dump and it will help you to focus on your test questions.
- Scan the entire test to determine the types of questions, their difficulty and point value. Pace yourself based on your analysis of the test.
- Work on the problems that seem easiest to you first.
- Read through the problem to understand it and what the problem is asking for (your unknown).
- For appropriate questions, draw a diagram and label the givens for the question.
- Verify your answers. Does each answer make sense given the context of the problem? Estimate the correct answer first and then see if your actual answer is close to the estimate. If time permits, do the question in a different way.
- Plug your answer back into the problem to make sure that it works, especially for word problems.
- Go through your exam and check for arithmetic errors.
- To possibly get partial marks, show all of your work
- When you receive your tests back rework any incorrect answers.
- After the test determine whether most of the test questions came from the lectures, textbooks or homework. This will help you prepare for your next test or exam.

cramming

Cramming for Tests and Exams

It is not recommended that you cram before a test or exam because you will not be able to thoroughly review and learn all of the material or get help if you need it. It will also likely increase your anxiety. There are times however when you find that you need to cram, and these tips will help you become focussed and calmer.

1. Identify the key pieces of information that you will need to study. This involves reviewing your course outline and lecture objectives. What is the professor emphasizing and expecting you to learn? What are the key themes and sub themes from your lectures and textbooks? What supporting material seems essential to learn? How is the information from lecture to lecture connected? What information has been covered on previous tests or exams? Remember that by understanding the key concepts and main points, you will be able to reason your way through test and exam questions.
2. Based on the above and on the time you have available, create a study plan so that you can use your time effectively. Decide how much time you will devote to each key area.
3. Create study materials if you have not done so already. Rather than writing out detailed notes, create summaries of the information. Useful ways to summarize key pieces of information include flash cards, memory devices, charts, outlining the series of steps needed to understand a formula or mind maps.
4. Over learn the main concepts by repeatedly saying the information out loud. Understand the information rather than simply memorizing it.
5. Try to cover the most difficult information first.
6. Once you have learned the key concepts, practice answering any test questions that are available.
7. Ignore information that you will not have time to review.
8. Transform your anxiety into motivation and energy by reminding yourself that you have an organized and efficient approach to studying.
9. Take short breaks (no more than 10 minutes) from cramming. Stretch, relax, eat or focus your attention briefly on something else.
10. Be aware of your negative self-talk. Examples of this include "I should have studied earlier" "I will never learn all of this material." "I will fail". Although these thoughts are natural under pressure, they are counterproductive. Instead, remind yourself that you are doing the best you can and that you will do things differently next time.
11. Get at least 6 hours of sleep the night before the test or exam so that you are focussed and alert.

anxiety

Test Anxiety

While some test anxiety is normal and useful to help us focus and perform well, too much test anxiety can be crippling and may result in poor or disappointing test results. There are many causes for test anxiety including negative past experiences, lack of test preparation or good study skills habits, or excessive worry about not doing well. The following are different strategies to deal with test anxiety.

- Maintain healthy self-care strategies. Eat properly to give you energy for the exam.
Limit or do not drink caffeine.
Exercise.
- Get enough sleep.
- Learn and regularly practice relaxation techniques
- Reframe how you think about the exam. Think about it as an exciting challenge, an opportunity to show what you know and that you will try your best.
- Identify how your negative thoughts, physical reactions and behaviour fuel your anxiety
- To address your negative thoughts, replace them with balanced, rational thoughts
- Visualize doing well on the exam
- Address “what if” questions. What if you fail this test or class? What options do you have?
- Study in advance.
- Do practice tests simulating the exam process and test conditions
- Put past exam failures behind you.
- Over learn the fundamentals for your course.
- Do not panic if others leave before you.
- During the exam answer the questions you know first to build confidence.
- If you go blank write down any information you do remember. Scan the test to see if other information on the test jogs your memory.

A counsellor can assist with helping you to more fully understand the test anxiety cycle and offer you customized strategies to lessen your fears and increase your performance.

memory

Memory Techniques

Being an effective student involves learning, understanding and remembering a lot of information. To do this it is necessary to understand how our memory works.

We have both short term (working) and long-term memory. Short-term memory has a limited capacity and holds 7 ± 2 chunks of memory. For example, phone numbers are typically 7 digits long. It is used at a conscious level. Long-term memory is thought to have an infinite capacity. The goal is to transfer your learning to your long-term memory. Many strategies exist to do this.

The following are proven memory retention strategies:

- Do frequent and spaced reviews
- Recite the information out loud in your own words
- Over learn the basic and essential information for your course
- Learn by using multiple senses
- Learn by using your personal learning style preferences (visual, auditory and kinaesthetic. Please see the section on learning styles for more information)
- Learn the concepts first and then the details
- Create meanings and associations
- Group information (you can group Shakespeare's plays into comedies, histories and tragedies)
- Create vivid associations (to remember Bob Green visualize a green man with the word Bob on his face)
- Teach the information to yourself or to someone else
- Develop an acrostic by using the first letter of each word to make up a sentence. For instance, a common acrostic used to remember the notes of the musical scale is Every Good Boy Deserves Fudge (EGBDF).
- Use the method of loci. This method works well when having to remember lists. Visualize a room or space you are familiar with and link words or concepts on each object in that space. To recall the items later, take a mental walk around the room and visualize what item you attached to the object.
- Create rhymes, songs or jingles. The sillier the more memorable.
- Create mind or concept maps (Please see the mind map section for more details)
- Create acronyms. The first letter of each word in the sentence represents the first letter of the word/list you want to memorize. To remember the names of the great lakes for instance, you can remember the word HOMES: Huron, Ontario, Michigan, Erie and Superior.
- Use hook-ups. Put all related information that starts with the same letter together.
- Listen to pod casts or tape recordings of information.
- Take frequent but short breaks when learning. Study for 20-40 minutes and then take a 10-minute break. This gives your mind a break and helps to consolidate learning.

understand

Understanding Your Learning Style

There are many models that are used to assess learning styles. These models offer ways to help maximize learning and the recall of information. The model presented below describes 3 types of learners: visual, auditory or kinesthetic. Remember that most of us are not purely one type of learner. Rather we often use more than one approach to learn and remember. As you review this information ask yourself how knowing your learning style can benefit you in lectures and note taking and while doing assignments, labs or co-ops.

People with a Visual Learning Preference...

- Learn through seeing.
- Often close their eyes to visualize or remember something.
- May find something to watch if they are bored.
- Like to see what they are learning.
- Respond well to colour, art, and concept maps.
- May know what to say but have difficulty coming up with the right words.
- Are attracted to written or spoken language that is rich in imagery.
- Prefer that there is no outside stimuli (noise or movement) when they are studying.
- Often need verbal instructions to be repeated.
- Would rather read than being read to.
- Need to see the whole picture before they have a clear idea.

Study and Learning Strategies for Visual Learners

- Try to get the big picture before class by reviewing charts, graphs, pictures, titles and subtitles.
- Study by writing notes with pictures, symbols, key words, and using color.
- Sit in front of the class to see the professor's body language and facial expressions to better focus and understand the content.
- Find visuals to help you study, such as illustrated books, power points, videos, and handouts.
- Ask questions to help you stay focussed during lectures (auditory environments).
- Try to eliminate background noise, such as music, when you study.
- When reading textbooks use highlighters to identify key information.

People with an Auditory Preference...

- Learn through hearing and listening.
- May talk to themselves, talk through problems, repeat words, or move their lips.
- Learn through what others say.
- Often remember accurately the details of what is said.
- Have strong verbal communication skills.
- May find learning other languages easier.
- Often have musical talent because they can hear tones, rhythms, and individual notes.

Study and Learning Strategies for Auditory Learners

- Recite information out loud from lectures and textbooks.
- Record lectures or listen to pod casts for review.
- Discuss the material with another student or in a study group; debate or brainstorm during these activities.
- Participate in class discussions.
- Create musical jingles
- Ask for verbal explanations of charts or diagrams.
- Create debates with the information you are learning.

People with a Kinesthetic Learning Preference

- Learn through moving, doing and touching.
- Tend to have good coordination skills; enjoy expressing themselves through movement.
- Need to be active with frequent breaks when learning.
- Often speak with their hands or gestures.
- Can more easily remember what was done rather than what was seen or said.
- Tinker or move a lot when bored.
- Enjoy activities such as labs, field trips, role plays, demonstrations, or manipulating materials.
- Tend to find lectures tiring and boring.

Study and Learning Strategies for Kinesthetic Learners

- Move around when learning new information (squish a ball, chew gum, walk around).
- Use a computer to reinforce learning by using your sense of touch and muscle memory.
- Bring items such as elastics and stress balls to lectures to give you something to do with your hands.
- Think of practical ways to use the information you are learning.
- Create learning opportunities to “try it out”.
- Use as many senses as possible when you are studying: see, hear, touch, taste, and smell.
- Create study cards which you can move around and carry with you whenever you have to wait.
- Study in small chunks of time with frequent breaks.

mapping

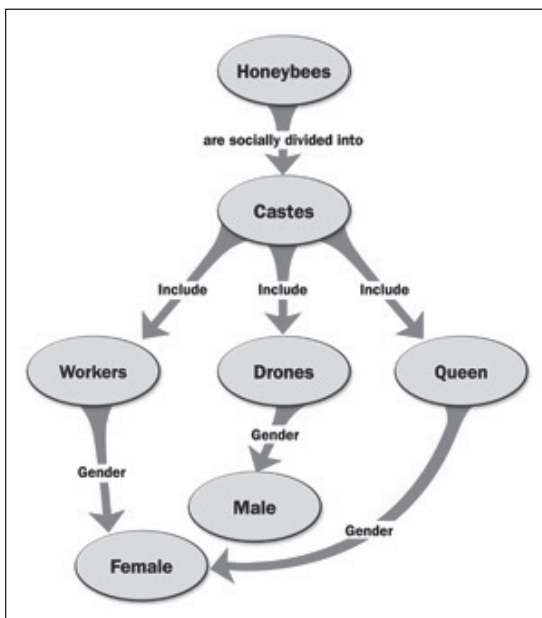
Concept Mapping or Mind Mapping

Concept or mind mapping has many uses. It helps to improve memory, consolidates learning, enhances creative problem solving, structures information and shows its connections, enhances critical thinking, improves the creative process, and supports visual learners. It can be used to summarize lectures or textbook readings, prepare test or exam study notes, or brainstorm an approach to writing essays or working on a project.

Essentially mind mapping involves writing down a central idea and identifying new and related ideas that come from this central idea.

How to create a mind map

1. Identify a central theme, topic or symbol that you are exploring and put it in the middle of a page. Circle it. Choose a concept that is the most important, broadest or inclusive idea depending on what you need to understand or explore.
2. Put other important concepts and their words outside of the circle that radiate from the main idea. You can use “stick it notes” to do this so that you can move them around if you wish. You can list the ideas, themes or issues that radiate from the main idea from most general to most specific. For mind maps where you are brainstorming or thinking about writing an essay, think creatively. What concepts can expand the boundaries of your map?



3. Look for the relationships between the outside items and the central item and the relationships between the outside items. Draw lines, arrows, branches or use colors to show the relationships. Do this in a way that is relevant and meaningful to you. You may notice that a number of branches are related. You can group this information by drawing a circle around it.
4. Do steps 2 and 3 quickly without editing to promote creativity and memory retention. You can go back and edit later.
5. Use capital letters for main ideas or key points. Details can be recorded in lower case. Sketches, graphics, drawings, explanatory notes, and lists can also be included.
6. Leave lots of space so that you can go back and add or change your mind map as your learning evolves.

<http://www.cals.vt.edu/news/pubs/innovations/jan2007/images/Concept-Map-web.jp>

active

Active Learning

Active learning refers to discovering, processing and applying information. In other words, it involves doing something or creating learning activities with the information you are learning. There are 4 ways to create learning activities.

Creating a Dialogue with Yourself

- Ask yourself what you think and feel about a topic. What are you learning about a topic and how are you learning about it? What role does this learning play in your academic and eventual work life?
- Critically think about the information you are learning.
(Please refer to the section on critical thinking for more details.)
- Consider keeping a journal or developing a learning portfolio to capture your reflections.
- Try using the one-minute paper. At the end of each day or class, briefly identify the most important thing you learned and what important questions remain unanswered.
- Create concept or mind maps. (Please refer to the section on concept or mind maps for more details).
- Review case studies and analyze what occurred or could occur.
- Generate potential exam questions to review before tests and exams. Think like a professor when creating these questions.
- Embrace confusion as part of the learning process.

Creating a Dialogue with Others

- Consider creating dialogue with others in person or virtually to review your learning and your reflections on your learning.
- Discussion or study groups offer opportunities to do this.
- Create formal or informal student debates to critically review and discuss your learning.
- Create games related to the information you are learning.

Creating Opportunities for Observation

- Take time to observe how your professors, lab instructors, tutors, co-op colleagues or apprenticeship sponsors do things.
- Ask about their methods, their thinking processes, their short cuts, the obstacles they have encountered and lessons learned.

Creating Opportunities for Doing

- Consider ways that you could do something to demonstrate your knowledge, strengthen a skill or try something for the first time. Role-playing, presentations, clinical skills labs, co-ops, field trips, field placements, and apprenticeship programs offer these opportunities.

Study Groups

Besides being a fun way to learn, study groups can be very beneficial. Students report that they can review and clarify information, learn new study skills techniques and deepen their learning through teaching others. Taking time to properly plan and form a study group will ensure its' success.

A study group can focus on many different activities depending on the needs of the students and the course requirements. Some ideas are listed below:

Functions for a Study Group

1. Discussing homework answers and problems. (You need to ensure that you are following College policies regarding academic honesty).
2. Clarifying information from lectures, labs and course reading materials.
3. Preparing and sharing summary notes containing key concepts from lectures and readings.
4. Developing and sharing memory devices to help with remembering information.
5. Doing research on a theme, issue or concept and teaching it to other group members.
6. Identifying the relationships between the concepts learned from lecture to lecture.
7. Developing potential test questions for review.
8. Answering practice test questions given by the professors, created by the study group or found in course materials.
9. Creating exam review sheets.
10. Sharing effective study habits and techniques.
11. Helping each other stay focussed and motivated.

Getting started

1. Assemble a group of 2-6 students. Include students who are serious about their studies and can be counted on to be prepared for the study group.
2. Pick a time and location for regular meetings.
3. Decide on ground rules for your group. Will the study group focus on test preparation, assignments, lectures or all of these areas? How much information will be shared between group members? Will there be an agenda for each meeting? What is expected of each group member? How will the group deal with too much socializing? How will the group deal with unprepared group members?
4. Choose a group leader to ensure that the meeting stays focussed. This responsibility can be shared from session to session.

thinking

Critical Thinking Skills

When you are applying, categorizing or analyzing information, making comparisons, solving problems, evaluating arguments, or drawing inferences you are critically thinking. This way of thinking is essential to creating new knowledge and understanding and using information. This life long skill will help you in both your academic and work lives.

Based on what you have heard, read, observed, seen or experienced, as a critical thinker you are expected to:

- Evaluate whether the information you have gathered is appropriate and up to date
- Assess whether the information, arguments and examples used by others support their perspectives and arguments.
- Distinguish fact from opinion.
- Identify relevant versus irrelevant information.
- Check for biases or assumptions in the thinking of others.
- Determine whether logical arguments are being made.
- Judge how the opinions, arguments or solutions expressed compare to other information or relevant criteria.
- Remain open to new ideas and perspectives.

One of the best methods to do the above is to ask questions such as:

- What is the main argument or line of reasoning? Do I agree or disagree with this? Why?
- What are some of the specific ideas or statements used? Do I agree or disagree with these? Why?
- What definitions of concepts are used? Do I agree or disagree with these definitions? Why?
- What examples are used? Are these examples relevant? Can I think of other examples?
- Is this statement, argument or thesis supported by fact or is this an assumption or opinion?
- When are these assumptions true or not true?
- What harm is there in accepting these assumptions or opinions as facts?
- What different conclusions can be reached from the information presented?
- Are the conclusions reached similar or different than my experiences? If they do not fit my experiences, what differences exist?
- How is this line of reasoning similar or different from other information I know?
- What are the consequences or implications of these arguments or opinions?
- How can this information be classified?
- Does the cause and effect line of reasoning appear logical?
- What are some opposing arguments?
- Are the examples clear, accurate and relevant?

- What patterns or links are identified and how can they be applied to other problems or issues?
- Is the issue or argument explored in depth? What has been left out? Why?
Is the information that is missing important? Why?
- Do the statistics used give the full picture? Are the sources for the statistics reliable?
- Is the data up to date?
- Can this argument be generalized to other situations?
- What information do I already know about this subject and how does it compare to this information?
- What are the patterns between the information presented?

Critical Thinking Skills Across Disciplines*

Different disciplines rely on specific approaches in the critical thinking process. Some strongly rely on analyzing cause and effect relationships while others emphasize building arguments. The following are some general guidelines.

All disciplines require that you ask questions, relate theory and practice find and use appropriate evidence, evaluate information, find connections between information and categorize information.

Science programs require you to interpret information within a framework, describe, explain, predict and identify cause and effect.

Business programs require you to identify problems and solutions, compare and contrast and relate theory to practice.

Information Technology programs require you to analyze entire systems and its component parts.

Literature/History/ Social Sciences and Humanities programs require you to make and support arguments in relation to a theoretical framework or concept.

* Adapted from: www.canberra.edu.au/studyskills/learning/critical

online Online Learning

The option of online learning is everywhere. Students can take online diploma or degree programs, or courses that have some online component such as message boards or chat rooms. The demands of online learning are unique. Besides needing access to computer equipment, software and the internet, certain skills, resources and approaches are needed to benefit from online learning.

Skills for online learning include the ability to:

- use a computer
- read instructions and lessons
- write clearly.
- meet deadlines
- direct one's own learning
- manage time
- be organized
- deal with technical problems
- ask for help when needed

Tips for Online Learning

- assess your suitability for online learning by reviewing whether you have the skills listed above
- find out the technical requirements of the course before enrolling
- get a stable e-mail address for the course
- find out what academic supports are available
- review the course design, objectives and due dates
- create a study schedule and stick to it so you do not fall behind
- log on regularly to the website to be informed of updates or announcements
- communicate and participate often in class discussions to get the most out of this learning experience and to let people know that you are "virtually present"
- have a backup system for when you have computer problems
- respond quickly to email messages (within 12-24 hours)
- identify yourself in the "From" or "Subject" lines or in the body of your messages so that your professor and virtual classmates know who you are (you don't want to be known as "swingingscott@hotmail.com")
- do not wait until the last minute to send in assignments because you may run into technical difficulties
- let your professor know that you need help; often times your questions or problems are shared by your virtual classmates
- proof read your email messages prior to sending them for correct grammar and spelling and to ensure that there is no misunderstanding about your intended message
- be clear in your email messages about whether you are responding to a previous email or starting a new topic
- organize your messages into a folder to keep track of the information and the dialogue
- keep a back up hardcopy of all assignments submitted electronically

problem

Problem Based Learning

Several courses or programs at the College use problem or inquiry based learning versus lectures, assignments or exercises. Problem based learning (PBL) relies on posing a complex, real world problem to help students identify and research the concepts needed to work through the issue. In this approach, the tutor acts as facilitator or mentor of the learning process. Students therefore, are active collaborative co-creators of the learning process.

The goals of problem-based learning are numerous and include:

- Thinking critically.
- Finding, evaluating and using appropriate resources to become independent life long learners.
- Working collaboratively with small teams.
- Communicating effectively by teaching team members and sharing information.
- Arriving at informed judgments that are based on research evidence.

Steps in the Problem Based Learning Model

Step 1. Exploring the Problem

Students are given an ill-defined problem (a case, research paper, video etc) as the jumping off point to explore the issues. During this stage, students should identify the problem and its component parts and learning issues. Students should identify what words, concepts or terms they do not know. Each student's views are essential at this stage since not everyone will perceive the problem in the same way.

Step 2. Identify what you already know.

Every team member's contribution is critical at this point as each brings a different knowledge base and set of skills.

Step 3. Brainstorm possible explanations or solutions.

Use your prior learning to respond to the problem that is presented. Initially, all ideas should be equally considered.

Step 4. Compare the brainstorming with the original problem.

During this phase, students are asked to consider how well their solutions or explanations measure up to the problem. By doing this, areas for individual research and self-study are generated.

Step 5. Develop self-study assignments.

Learning objectives or issues are identified in the form of questions, which lead to self-study assignments. These assignments should be realistic based on time frames.

Step 6. Completing the self-study assignments.

Using various resources (the web, content experts, books etc) students research answers to their learning objectives.

Step 7. Report on Self Study Assignments.

All students discuss their learning from their self-study to help each other understand the problem. Resources are shared and assessed. Issues, concepts and information are debated and analyzed.

Step 8. Closing analysis.

Students discuss what they have learned by working with this problem. Are underlying mechanisms understood? What information is still missing? How does this problem and information learned, relate to previous learning?

Step 9. Evaluation.

Both individual and peer evaluation take place during this stage.

Potential problems students may encounter in the PBL process include:

1. not knowing how much research is necessary.
2. not knowing whether you have learned all that you need to know.
3. not being tested to quantify your learning.
4. finding that the research process is time consuming.
5. difficulty reporting back to the group to demonstrate your learning, when there are dominant group members.
6. group conflict problems that go unresolved.
7. feeling frustrated by not benefiting from the content expertise of the tutor.

Should these issues develop, discuss them with the tutorial group or a counsellor.

avoid Procrastination

Simply put, procrastination is avoiding a task that needs to be done. It is something we all do to some extent but if done too often can have serious academic, personal and health consequences. Some common reasons for procrastination and strategies to deal with procrastination are offered below.

Fear and anxiety. People who procrastinate have different fears and anxieties and these can include the fear of failure, success, and losing autonomy or control. **Possible strategies** to deal with fear and anxiety include acknowledging and accepting your fear and trying to understand the source of this fear. Working with a counsellor can be an effective means to do this.

Negative beliefs. These are beliefs that we have and may not challenge such as “I don’t have the ability to do what is required” or “if I get started on this and don’t do it right, I will fail” **Possible strategies** to deal with negative beliefs include awareness of and analysis of negative thinking. Identify whether there is tangible proof to support or refute your negative thinking.

Perfectionism and unrealistic expectations. There is a difference between healthy striving and perfectionism. Striving high is necessary, healthy, and makes people successful. Perfectionism can be crippling, take a considerable amount of time and is often unattainable. **Possible strategies** to deal with perfectionism include observing and speaking with those who are healthy strivers and understanding how they set realistic limits. Also, allow yourself to be human by focussing on progress and accomplishments rather than perfectionism.

Personal problems. Sometimes there are a range of personal problems that are vying for your time, energy and focus. These get in the way of accomplishing your schoolwork. **Possible strategies** to deal with this include identifying and addressing personal problems with a trusted friend or counsellor.

Boredom with the task or believing it is too big to get done. It is hard to get motivated to do something when you are not interested or feel overwhelmed. **Possible strategies** include the 10-minute ticker, chunking down your work, or alternating pleasant and unpleasant tasks. For the 10 minute ticker, set an alarm for 10 minutes and study or work on an assignment for 10 minutes. If you start to get momentum, keep going. If you are still disinterested or overwhelmed, do something more productive. Chunking down a larger task into smaller tasks is also useful. Identify the smaller components of a big project and tackle each part over time. You may also consider alternating pleasant and unpleasant tasks to give yourself a break from what you find boring or overwhelming. Establishing rewards by doing pleasant tasks can be motivating.

A counsellor can assist you to better understand the reasons you procrastinate and identify other strategies to overcome procrastination. Whether you work on your own or with a counsellor, be patient and recognize that changing habits takes time.

notes:

Giving You the Tools to Succeed

[illegible]