

POCKET BOOK:

A Quick Guide for
S.T.E.M. Students

CPASS
FOUNDATION

If you're reading this you have decided to pursue a career in **SCIENCE, TECHNOLOGY, ENGINEERING AND MATH**. These fields are shaping the future of our world.

The purpose of this book is to share tips and insights that will help you on your academic journey.

Pocket Book: A Quick Guide for S.T.E.M. Students
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How to

Take Notes



Cornell Notes

in 6 Steps

TOPIC OF CLASS

GENERAL IDEA

- Questions

GENERAL IDEA

- Questions

- Regular notes

- Outlines

- Drawings

- Diagrams

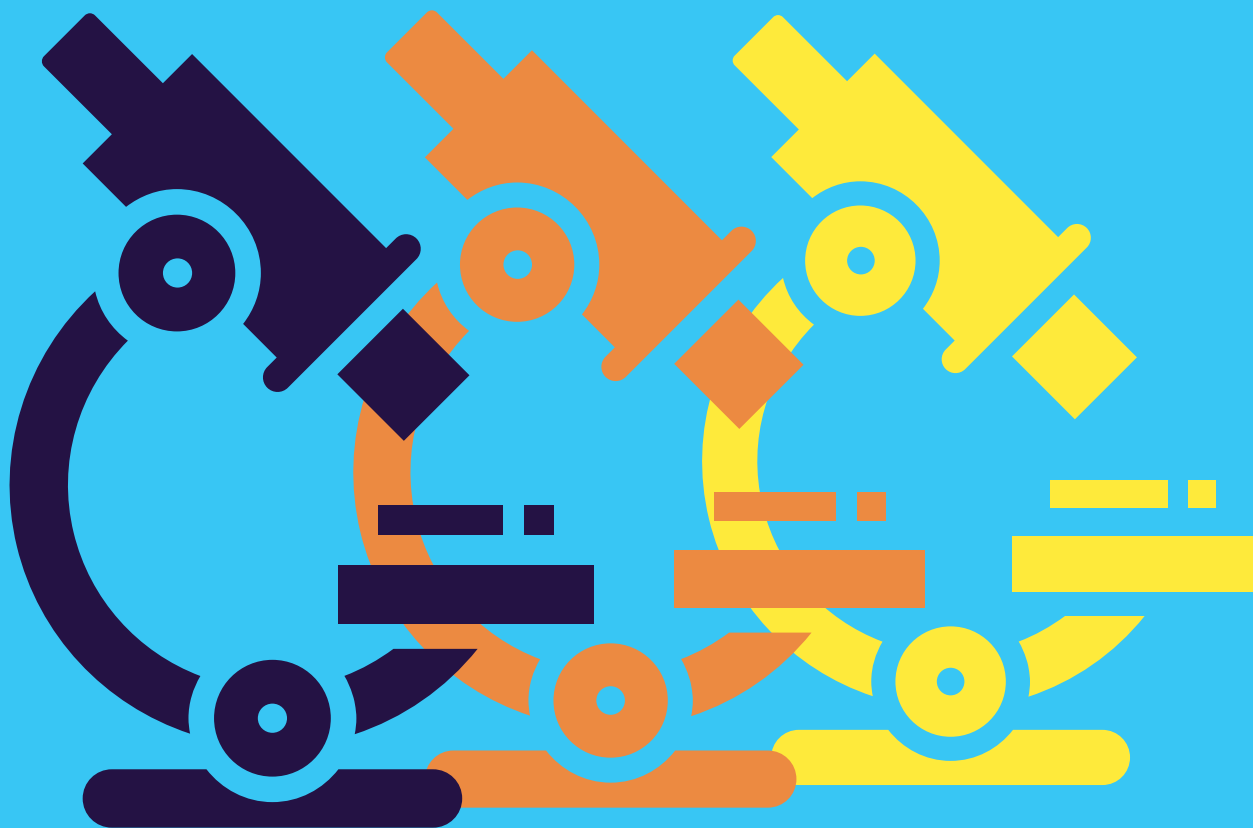
SUMMARY

1. Divide a sheet of paper into two columns leaving space at the bottom for a summary.

2. Use the right hand column to take telegraphic notes during lecture.

- Telegraphic notes are short hand notes that omit unimportant words.
- Write like you tweet: the less characters, the better.

i.e. “mitochondria = cell powerhouse”



LEARN WITH
A GROWTH
MINDSET.

3. After class use the bottom of the page to summarize the notes you took.

4. Once you've summarized your notes, use the left column to formulate questions based on the notes you took in the right hand column.

- These questions will form a good basis for exam review.



FOOD IS FUEL.

5. When you finish formulating the questions, cover the right side of the page and quiz yourself using those questions.

- Remind yourself of the concepts, terms, and processes that you need to understand to answer each question.

6. Set aside at least 10 minutes during the week to review your notes and questions.

- As the lectures go on for a particular course, your review will become more extensive and eventually you'll pull out the sections, concepts, and processes that your professor indicates will be on the exam and give them extra attention.

A woman with dark curly hair and glasses, wearing a striped shirt, is smiling and playing a piano. The background is softly blurred with warm light.

Outline Notes in 5 Steps

TOPIC OF CLASS

I. FIRST GENERAL TOPIC

- A. First Idea
- B. Second Idea
 - 1. information
 - 2. Information
- C. Third Idea

II. SECOND GENERAL TOPIC

- A. First Idea
- B. Second Idea
- C. Third Idea

III. THIRD GENERAL TOPIC

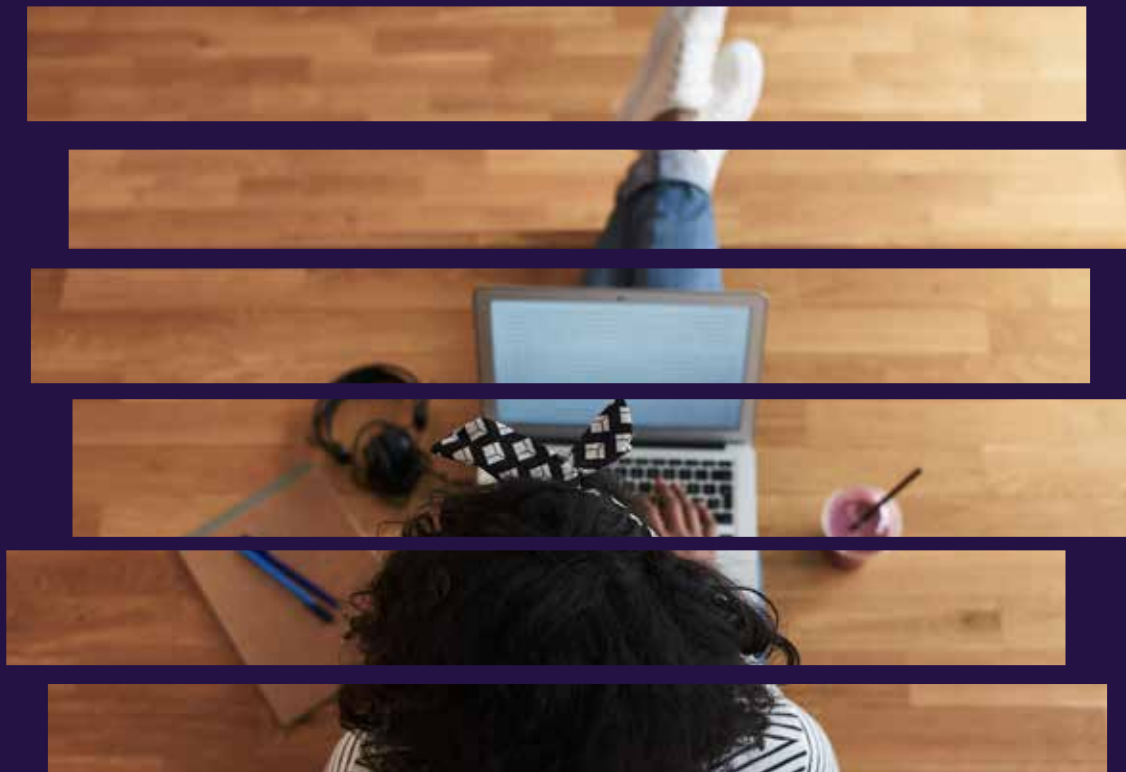
- A. First Idea
- B. Second Idea
 - 1. information
 - 2. Information
- C. Third Idea

**USE MARGINS
FOR CHARTS
AND DRAWINGS.**

1. Use the overview at the beginning of your lecture as an opportunity to write down central topics.

- These central topics will become the top level of your outline hierarchy.

2. If you don't get an overview before the lecture just write down the central points as they are said in real time.



**STUDY BREAKS
ARE VITAL.**

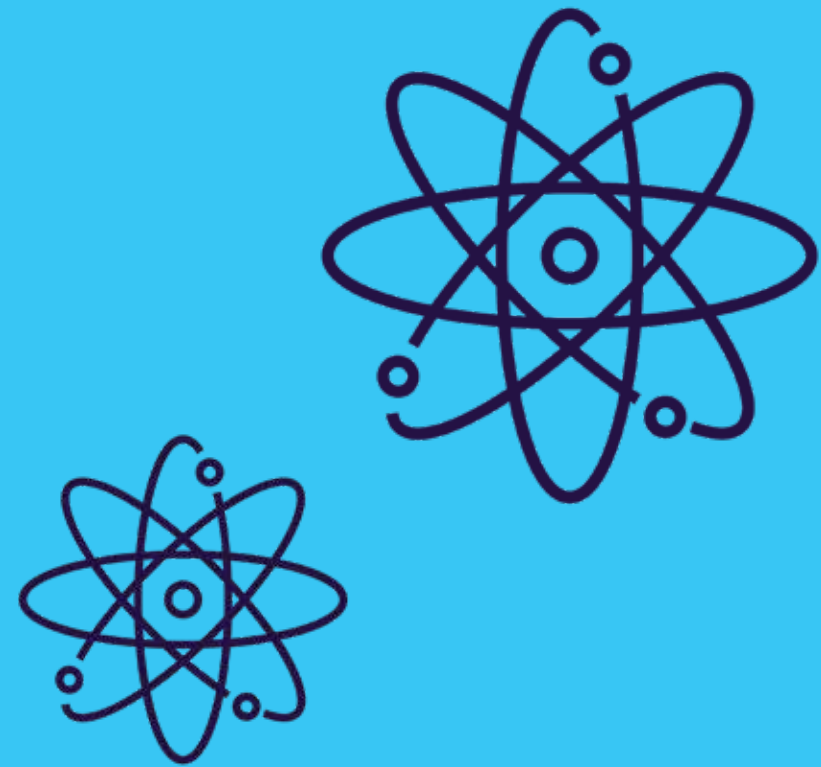
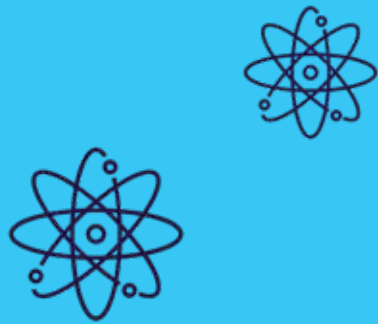
3. The key to the outline method is to place the related notes underneath each central topic using smaller bullet points.

DNA Replication ← General Topic

Central Dogma ← Sub topic

- Proteins
- Processes

TIME IS
YOUR FRIEND.



4. Lectures usually get more detailed on a particular topic as the semester goes on. You might find that sub points in your general outlines from the first lectures of a semester will become the main points of outlines for the later lectures in that semester.

Proteins used in DNA replication

- Topoisomerase ← sub point
- DNA polymerase
- DNA primase
- DNA ligase

DNA polymerase III holoenzyme

- Function ← sub point
- Process
- Associated proteins

5. After the lecture, review your outline and fill in parts that you missed or add more details to important topics. Use the outline as a guide to focus your study sessions.

Always review your notes. Use the important sections of your outline to formulate questions that test your knowledge of the material. Put these questions in a separate document so that you can test yourself without having the answers right next to you.



How to

Review Notes

and Remember Things



6 Study Habits

of Successful

S.T.E.M. Students

Reread, reorganize,
and rewrite notes.

1/6

Compile key terms
for review.

2/6

Compare and contrast lecture notes
with text book and handouts to fill
gaps in understanding.

3/6

Create *Mind Maps* to reimagine complicated concepts, details, and processes.

4/6

Meet regularly with a study partner or group.

5/6

Test and reinforce knowledge
by teaching others.

6/6





Top 2 Things

You Should Know About

the Forgetting Curve



What is the Forgetting Curve?

An exponential curve that shows how information is forgotten over time when there is no attempt to retain it.

Why Should You Care?

When it comes to studying, the sooner you review information after you receive it, the more likely you are to remember it.



6 Study Hacks

That Are Often

Overlooked

Choose your spot wisely.

Choose a neutral, quiet space away from distractions. Don't put yourself in an environment where your concentration will be regularly broken in ways that are out of your control.

1/6

Time is Your Friend.

Break your study sessions into timed intervals (usually 25 min each) take 5 min breaks between each interval and take a longer break once you've completed 4 sets of 25 minute intervals.

This will help you tackle extensive material without getting fatigued too quickly.

It's called the Pomodoro Technique.

Avoid Isolation.

Step out of your comfort zone. Lectures, Labs, and discussions are a great place to meet people with different learning styles, thought processes, and resources. Connecting with the right study partner or group can strengthen your understanding of key topics.

3/6



Give it a Break.

Study breaks are vital to learning. Give your mind time to rest and reset instead of trying to power through a lot of information at once. This will help you avoid burnout.

4/6



Build Focus.

Focus is a muscle you have to exercise to strengthen. Take note of factors that add to your distraction while working or take away from your active listening while learning.

PRO TIP: You might want to put away your phone.

5/6





Don't Skip Labs, Discussions, and Review.

Even if you feel like you understand a particular topic, these are great places to catch hints on what might be on the exam, test your understanding by answering other people's questions, and discover new ways to approach certain problems.

6/6



What it Really Takes



5 Things to Remember About Overcoming Obstacles

There are many routes to careers in S.T.E.M. and all of them are challenging.

No one gets through the S.T.E.M. journey without facing hurdles, setbacks, and long nights.

1/5

The success of your journey through S.T.E.M. will depend on your ability to overcome obstacles and persevere.

This ability is not based on your talent, intelligence, previous grades or background.

It's based on grit.

2/5

The Importance Having Grit.

Grit is the ability to persevere over time. Make the decision, everyday, to do whatever is required to gain mastery of the subjects, methods, and skills at hand.

3/5

Learn with a Growth Mindset

No matter where you're starting from, you have to believe that anything you set out to learn can be learned with enough dedication and hard work.

4/5

Imposter Syndrome

You may have moments when you feel like you aren't good enough. Remember: Everyone started somewhere. Everyone struggles. You've earned your position through your effort and execution. Be bold. Practice confidence.

5/5

2 Things to Remember

About Self Care



Sleep Smart

Sleeping on a regular schedule helps your body and mind recharge more efficiently. Nothing else matters if you can't stay awake.

1/2

Food is Fuel

Eat a decent meal and stay hydrated. Avoid being too hopped up on caffeine or sugar. It's harder to learn on an empty stomach. Don't overdo it. Eating too much and going into a food coma before or during class is a bad idea. Find balance.

2/2





“We are what we
repeatedly do.”

Excellence, then,
is not an act but
a habit.”

-Will Durant

The success of
your journey
through S.T.E.M.



will depend
on your ability
to overcome
obstacles and
persevere.

GO.

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Creating Pathways and Access for Student Success Foundation
180 N. Michigan Avenue, Suite 1200
Chicago, Illinois 60601

cpassfoundation.org

