Study Tips

Katherine Kashinsky
premed_kat28
Success Begins when you Plan Ahead!!!!

● Make sure you are checking your syllabi.
  ○ Don’t be surprised by quizzes, exams, or assignments.
  ○ You want to give yourself ample time to study.

● Have a planner.
  ○ Mapping out your month/week/day visually will help you stay organized.

● BEFORE you go to lecture, try to do any assigned readings.
  ○ But also remember that there are many courses for which assigned readings may not be helpful, so it may be better to skip that if it is not helping you. Save your time for things that WILL help.
Lecture

- Many classes, especially in MCB and PNB, are solely based on the information you get from lecture.
  - By not going, you are harming yourself.
- Take GOOD notes in class and RECORD.
  - My best advice is to try to WRITE DOWN almost everything your instructor says in class.
  - Recording helps you if you miss something and if you would like to re-listen later.
- Don’t worry if they’re not that neat.
HANDWRITE your Notes

Studies show that handwriting your notes is BETTER for recall than typing.
Lecture, cont.

- This will either be your first or second time seeing this information.
- It would benefit you greatly to handwrite your notes in class because that is ONE more time where you are actively learning the material.
- Alternatively, some people have a hard time writing quickly enough to keep up with the instructor, so they will type and rewrite the notes by hand or they will just listen to the lecture and take notes from the recording.
  - I personally don’t recommend either of these. Most people are kinesthetic learners, and require handwriting notes to remember. Less people are solely visual or auditory learners.
Modes of Notetaking in Class:

- Handwrite on paper or printed out lecture notes.

- Apps:
  - Microsoft OneNote is very popular on laptops and tablets.
    - You can handwrite on your tablet (windows AND apple).
  - iPad:
    - Notability
      - HIGHLY recommended.
      - You can handwrite on your iPad.
After Class:

**REWRITE your notes, again by hand.**

- **REPETITION IS KEY** in recall.
- This will help to further solidify the information in your mind.

- It sounds tedious, but trust me, this has been very successful for me and others whom have tried it.

- **KEEP UP WITH THIS!**
  - This can be the most time consuming part. Rewrite your notes from a lecture BEFORE the next one, so that you stay with the class.
  - Do NOT wait until the week leading up to class. You won’t have time to go through them again.
NOTETAKING:

- Make them NEAT.
  - If you can’t read it, you won’t remember it.

- You want your notes to be visually appealing. This will make recall during exams much easier.
  - Use COLOR
    - I use color to emphasize important concepts and ideas.
    - Recommendations:
      - Multiple colors of highlighters
      - Pens: STABILO (cheaper, and I would argue better) or Staedtler (more expensive)
        - Found on Amazon.com

- DRAW!!!!!
  - Diagrams, anatomy, etc.
  - This along with use of color will SAVE YOU!
  - I can guarantee that you will remember the concepts better if you DRAW THEM OUT FOR YOURSELF.
    - You are much less likely to remember a printed out diagram.
    - It also has helped me understand complex ideas.
NOTETAKING

● Shorthand
  ○ Creating abbreviations or using symbols for words can save you time (and hand cramps).
  ○ Examples of what I use:
    ■ with = w/
    ■ Because = bc
    ■ Differences/ differing, etc = diff
    ■ Change = Δ
    ■ Force = F
      • A lot of symbols or one-letter abbreviations I use are from math/physics

● When you are bulleting, it’s best to keep ideas as brief and to the point.
  ○ Break them up into multiple bullets to keep the information in pieces.
  ○ This helps you visually as well as mentally bc you can easily see the pieces and put them together.
- Causes of MS: genetic factors + environ factors + immunological factors
- Genetics: Siblings
  - general pop: 0.1%
  - sibships + dizygotic twins = 3-5% concurrence
  - monozygotic twins = 25-35%
- Linkage analysis:
  - (prior GWAS)
  - Restriction length polymorphisms (RFLP)
  - microsatellite repeats
- Genome-wide association screen (GWAS):
  - Single nucleotide polymorphisms (SNP’s) → (as one allele of this gene differs from that of the other allele by one nucleotide)
  - C/T Polymorphism
  - Minor allele must occur > 10% to catch in a pop study
- MS gene:
  - HLA-DRB1 locus (chrom. 6p21.3) → MHCII

Major Histocompatibility Complex (MHC):
- Cluster of genes
- Discernible w/o self vs non-self
- Mediate antigen recognition by T cells

HLA Complex (human leukocyte antigen)
- MHCII → HLA-DR (part of gene)
  - Class II
  - Class III

- HLA-DRB1*1501: Most correlated w/ MS (C-arm chrom)
- Class II molecule: 2 membrane-bound subunits = α + β
  - β: Subunit has high degree of variability
    - Could play role in antigen binding
    - So HLA-DRβ1 is involved

MHCII:
- Innate immunity: Antigen non-specific defense mechanism
  - Rapid response at site of infection
- Adaptive immunity: Antigen-specific
  - Humoral immunity: B cells
    - Prod. Ab’s
  - Cell-mediated immunity: T cells
    - Tc + Th
    - Act. Macrophages + NK cells
    - Cytokine secretion

RGC that proj. to pretectum + hypothal. have pigment melanopsin
- Do not need rods + cones for transduction of nerve impulses

Retinogeniculate Pathway

- Optic tract
- Hypothalamus (reg. of circadian rhythm)
- Lateral geniculate nucleus
- Superior colliculus (reg. movement of head + eyes)
- Somite (part of eye and cortex)

Images are inverted + left-right reversed on retina (as in camera)

- Each eye sees only part of visual field (visual space)
  - Temporal retina: Don’t cross → some side of brain as eye (ipsilateral)
  - Opp. visual field
  - Nasal retina: Do cross tract → opp. side of brain as eye (contralateral)
  - Some visual field

- The most periph. visual field is monocular, mediated by most media
- The rest is binocular (middle of field)
- So visual field quadrants + retinal quadrants are opposite

Symm. visual hemifields (left + right)

You can see more examples on my Instagram: @premed_kat28
After Class, cont.

- **PLAN AHEAD!!!!**
- **Do NOT** wait until two days before an exam to start thinking about studying.
  - Some classes like biochem, you should be starting to study a WEEK before the exam.
  - If you plan what you are going to review each day, you will be more successful in your studying.
- **Now that you have written your notes 2x, you need to review them.** If you are planning ahead, you can go through your beautiful notes.
  - I HIGHLY recommend go through them at least twice. Again, repetition is key, and you are more likely to understand a difficult concept after being exposed to it multiple times.
  - Make these reviews ACTIVE.
    - Don’t just read and reread. Ask yourself questions, come up with mnemonics, recite it to yourself without looking at the words.
    - Put all of the information together
      - How does everything relate to each other and what is the big picture.
      - Depending on the concept, it may be easier to focus on the big picture and then the pieces, or vice versa for others
- **Take advantage of all study materials, like practice questions, instructors give you.**
Other Important Study Tips...

● For any class that requires solving problems (chemistry, physics, math, etc.)
  ○ Practice, practice, practice.
  ○ Write down HOW TO DO A PROBLEM in words and then use the numbers from the problem as an example.

● In organic chemistry:
  ○ For reactions, it helps to create general reactions than memorize each and every practice reaction.

● Biochemistry:
  ○ Use online videos and resources
    ■ Draw it to Know it may help (I am currently testing out the gross anatomy one)
    ■ Youtube
    ■ Khan Academy
  ○ Biochemistry Made Easy may help explain material well
  ○ This is a tough class, so make sure you are spending a significant amount of time learning to UNDERSTAND this subject is important. Don’t shortchange yourself on time.
Useful Study Tools

- Flashcards (best for memorization)
- Mind-Mapping
  - This has also been shown to be a GREAT way to understand information.
- Your peers, instructors, TA’s, etc.
  - Use those office hours and ASK FOR HELP!!!!
  - Get helps ASAP so that you don’t get more and more confused as you go on.

Don’t be afraid to experiment with what works for you. Everything I recommend may or may not work for you and there are definitely other things out there that may work. Every class is different, so the way I study for one class isn’t exactly the same as another. There is also no set amount of time you need to study. Study until you know and understand the material.

Also do NOT forget to take breaks. Cramming too much information in your brain is not as effective as taking it all in chunks with breaks in between. Sleep is also super important for memory, so make sure you are getting plenty of sleep!