10 Steps to Earning Awesome Grades (While Studying Less) –
Reddit sample :)
by Thomas Frank, Copyright 2014
With the help of coffee and more coffee

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tips, career advice, and other info on becoming an awesome
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Introduction

This is a special sample edition of the book, just for the readers of r/GetStudying! It contains the introduction as well as three chapters of the book that focus on:

- *Planning Methods*
- *Study Tactics*
- *Writing Great Papers*

If you like what you read, you can get the full book (with 7 more chapters) **for free** *right here:* collegeinfogeek.com/book*.*

Hope you enjoy it!

There is a goat icon on the cover of this guide because putting it there made it easy to start this introduction. Also, goats are hilarious.

Moreover, goats are really smart, and they'd probably get damn good grades if they stopped yelling long enough to think about goat school.

Enough about goat grades, though - this guide is meant to help you improve *your* grades.

A couple facts to put out there before we begin:

- For most students, my opinion on grades is that they do **not** need to be perfect. After you define your goals, you'll find that your coursework is not a magical Hogwarts train that will take you to them. It'll help, but alone it's inadequate. Focus on getting *good* grades while also gaining skills outside of class, building things, doing extracurriculars, making connections and - yes - making time to have fun. Even if it's just playing 10 minutes of *Goat Simulator* (don't worry, that's the last goat joke).
- The main point of this guide is to help you earn better grades, but the almost-as-important subfocus is to *cut down your study time*. It's my aim here to give you tools and tactics that help you perform better in **less time**. There's a neat little equation I invented below that explains this a little better.

The Study Time Equation

What are the factors that actually go into earning awesome grades? In my mind, the best way to look at this is to envision the final goal not as the *tangible reward* - the grade - but rather as the *state of being* you want to achieve.

I define this as **Desired Preparedness**. This applies to any class you're in - or, to get more granular, to any specific exam/assignment/project.

The grade is simply a result you can use to quantify your desired preparedness. Once you've set that goal, there are four factors that will go into achieving it.

1. Class Time
2. Learning Quality
3. Study Time
4. Study Efficiency

Given those factors, here's the initial form of the equation:

$$\left(\frac{Class}{Time} \cdot \frac{Learning}{Quality} \right) + \left(\frac{Study}{Time} \cdot \frac{Study}{Effeciency} \right) = \frac{Desired}{Preparedness}$$

Pretty simple, no? Now we just do some algebraic fiddling to solve for Study Time:

$$\frac{Study}{Time} = \frac{Desired\ Preparedness - \left(\frac{Class}{Time} \cdot \frac{Learning}{Quality} \right)}{Study\ Efficiency}$$

to decrease (this,) increase (these)

Assuming you're committed to attending all your classes, Class Time is fixed.

It's a constant. If you've already set a goal for Desired Preparedness, that's fixed for now as well.

This means you've got two variables to work with: **Learning Quality** and **Study Efficiency**. To decrease the amount of time you need to spend studying, increase either of them. Or be a baller and increase both.

Guide Overview

The rest of this guide is dedicated to giving you strategies and tactics to do just that. I've organized the guide into **10 steps**, each of which covers a different skill area:

- Paying Better Attention in Class
- Taking Effective Notes
- Getting More Out of Your Textbooks
- Planning Efficiently
- Building Your Optimal Study Environment
- Staying Organized
- Defeating Procrastination
- Studying Smarter
- Writing Better Papers
- Making Group Projects Suck Less

I called them 10 steps, but you should actually think of them as levels in a *Mega Man* game - you can take them on in any order. Just as you get new power-ups and weapons after each level in the game, you'll get stronger after completing each step here.

It doesn't actually matter which one you start with - if you've got a particular problem area, skip to that section and start implementing the tips you find there before you try to load everything else into your brain.

The words of CD Baby founder Derek Sivers fit perfectly here:

"Ideas are just a multiplier of execution."

Multiply anything by zero and you get… zero. You'll be a lot better off if you just read one step of this guide and put it into **action** than if you read the whole thing and proceed to do jack.

Keeping that in mind, let's take on the first robot master…er, step.

Note for the curious: I prefer to let the content speak for itself, but if you're new to College Info Geek and curious about who I am (and why it might be

beneficial to listen to me), I've put a bio at the end of the guide along with info on how you can connect with me.

Step 4 - Plan Like a General

As a student, your goal should be to never have to say,

"Oh shit, I totally forgot about that assignment."

College life is a complicated maelstrom of activities, assignments, projects, events, and spontaneous trips to the grocery store at 2 A.M. so you can score free boxes to make cardboard battle armor out of.

Without a good planning system, things **will** fall through the cracks. This chapter is all about helping you form that planning system and build the habits that'll keep it running smoothly.

It's also about helping you be more productive, and here's why…

Planning Mode vs. Robot Mode

As a student, you're not often forced to do specific things at specific times. You have a lot of choice in any given moment.

Jorgen von Strangle, the toughest fairy in the universe, is not standing behind you in preparation to put his boot up your rear every time you have to study. And that's a pity, because it's often *exactly what you need*. Your freedom of **choice** is one of the most devious culprits in the sabotage of your productivity.

Sheena Iyengar, a professor at Columbia Business School, has done a lot of research into the topic of choice. Here's a quote from her that summarizes a lot of her work:

> *"There are times when the presence of more choices can make us choose things that are not good for us. For me, the clearest example is that the more retirement fund options a person has, the*

> *less likely they are to save for their old age."*

With a bit of thought, this actually makes quite a bit of sense. A lot of people never start investing because they feel there are *just too many options*, and they're afraid of picking the wrong one. Ironically (and tragically), the most wrong option is usually waiting too long to invest.

As a student, you probably have this problem as well; the only difference is that you're worried about marginal opportunity costs instead of marginal financial returns. You wonder which homework assignment you should tackle first, which class you should study for now and which to save for later, etc.

A successful student doesn't spend very much time on this problem at all because they know how to effectively split their time between their **Planning mode** and their **Doing Mode** (which I like to call Robot Mode instead).

The word "robot" actually comes from the Czech word "robotnik," which directly translates to "worker" or "slave". Workers and slaves do not typically take care of the planning aspects of a projects. However, when motivated properly, they do get down to business and **get shit done**.

Logically, this means that you want to be in Robot Mode as much as you possibly can during your work sessions. Steps 7 and 8 will go into detail on how to upgrade yourself to be a *better* robot, but in this step we'll talk about how to utilize Planning Mode effectively so you don't have to spend much time in it. In short, the best way to do this is to get your planning done **up front**.

Plan Out Your Entire Education

While most of this chapter is about weekly, in-the-trenches planning, I want to mention the importance of having a plan for your entire education. Doing this really pays off.

As a freshman, I created an Excel spreadsheet that mapped out all the classes I would take over the following eight semesters.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Transfer		2009				2010				2011				2012		2013	
2	All	#	Fall	#	Spring	#	Fall	#	Spring	#	Fall	#	Spring	#	Fall	#	Spring	#
3	ACCT 215	3	BUSAD 102	1	BUSAD 201	0.5	ENGL 302	3	MIS 331	3	RELIG 205	3	MIS 435	3	MIS 437	3	MIS 434	3
4	ACCT 284	4	BUSAD 150	0	BUSAD 301	0.5	ENGL 313	3	ACCT 285	3	FIN 301	3	SCM 301	3	MIS 438	3	something	3
5	BUSAD 1T02	3	ECON 101	3	BUSAD 250	3	MIS 330	3	SP CM 312	3	MIS 432	3	MGMT 370	3	Kin 126/129/166	3	MGMT 478	3
6	ECON 102	3	HON 121	1	COMS 207	3	SP CM 212	3	COM ST 101	3	MIS 433	3	HD FS 276	3	FS HN 167	3	something	3
7	ENGL 201	3	LIB 160	0.5	PHIL 230	3			MKT 340	3								
8	ENGL 150	3	MATH 150	3	STAT 226	3												
9	ENGL 250	3	PHYS 101	3	U ST 106	1												
10	HD FS 283	3	U ST 105	1														
11	MATH 1T04	5																
12	MATH 165	5																
13	MKT 2T05	3																
14	ORIEN 1T06	1																
15	SPAN 201	4																
16	AUT 0V01	3																
17	CIT 0V03	3																
18	Total	49	Total	12.5	Total	14	Total	12	Total	15	Total	12	Total	12	Total	12	Total	12

To do this, I spent a few hours going over all the requirements sheets relevant

to my major - the core MIS curriculum, general business requirements, electives and gen. eds, etc. I made sure I knew how many credits I'd need to graduate, how many of those needed to be 300-level or higher, etc.

Then, I created a column for every semester and listed all the classes I would take, being careful to make sure all the requirements for my major were planned for. I also used Excel formulas to create dynamic credit totals, so my sheet would still work if I changed plans later on.

Doing that really came in handy, because I did change plans several times. I ended up changing electives based on new interests I gained, changed the order of certain classes I took, and dropped a program that no longer benefited me.

Each time I changed plans, I always made sure to update the spreadsheet. Doing this ensured that I always knew what my overall graduation plan was. It also kept me mindful of when I could sign up for classes, which I did as early as possible each semester.

Plan Your Week on Sunday

Sunday should be your planning day. You can go ahead and pick another day if you want, but if you do, we totally can't be friends. (Ok, we can - but only if you can beat me in a DDR battle. Which you won't. #shotsfired)

Seriously though, you should find a day of the week that you use for planning. Sunday is a prime choice, because it's right before you get back into the swing of things for the week.

Luckily, this process should take you much time. Chapter 6 covers techniques on staying organized and capturing data intelligently, so if you follow the advice there, you'll have an organized planning system that doesn't require much management.

On this planning day, you'll look at your task management system and make a mental note of everything that needs to be achieved during the week. You'll probably have **academic tasks**:

- Reading assignments
- Homework
- Exam studying
- Group project work

and you'll also have non-academic tasks. Examples:

- Getting your resume reviewed

- Writing a cover letter for a job
- Setting up a meeting with your advisor
- Buying a new notebook from the bookstore
- Filling our your FAFSA
- Hitting the gym (Do you even lift?)

In addition, you'll probably have events with specific start and end times beyond your classes. Job shifts, group meetings, etc - make sure these are all on your calendar.

Now that you know all that you need to get done during the week, you can move onto the next step of planning - grouping your tasks by **context**.

Understand Task Contexts

When it comes to managing your work, there are only two contexts that you need to concern yourself with:

- High thought-intensity work
- Low thought-intensity work

Work that requires lots of brainpower - reading, research, writing, creative projects, doing heavy math - is of the **high thought-intensity** variety.

Here's the thing about work of this type: It requires long, uninterrupted stretches of focused work to be done properly. If you're trying to write a big research paper in little 20-minute spurts between classes, you're not going to do as good of a job.

When you give highly thought-intense projects the time and attention they deserve, you're much more likely to find yourself in the **flow state** while working on them - that mental state of zen-like focus, where time seems to melt away and you create your best work.

Thinking about your tasks in terms of their contexts helps you get into that flow state more because you can **batch low-intensity tasks**. By planning ahead, you can block off a few concentrated hours to take care of all these easier tasks - leaving longer time periods open for the focused, high-intensity work that's more valuable to you in the long run.

Another thing to note here: When planning, try to review your past performance at certain times of the day. Do you do your best work in the early morning? Late at night? Right after class ends?

When you know yourself, you can plan for **optimum effectiveness**. If you

know you're focused in the early morning, you can choose to schedule your class, work, and social engagements later in the day. You can also take care of your batched low-intensity tasks later on as well, leaving the early mornings open for even more focused work.

Create a Daily Plan

Planning your week out on Sunday (or whatever day you choose) gives you a solid, high-level view of how that week is going to go. It allows you to make sure you're on top of any upcoming events and reduces the chance you'll get blindsided by something.

However, at least in my experience, you can't plan *everything* out on a Sunday. You'll run out of clean pants on Wednesday and realize you need to do laundry the next day. A friend's car will break down in the Target parking lot and they'll need you to come give them a jump. Things will come up unexpectedly, and you'll inevitably realize that there were already tasks lurking in the darkness that you didn't see on Sunday.

That's why I think you should create a **daily plan** as well. You can either do this first thing in the morning, or the night before; either way, it's a good thing to turn into a solid habit. I have my reminder to do so listed in HabitRPG as part of my morning routine, but in truth, I often sketch it out right before I go to bed at night.

Here's how I create mine; each night, I'll stand in front of the whiteboard in my room. I'll look at my two main time management apps:

- Google Calendar for events and the content I need to create (I keep it planned out there)
- Todoist for individual tasks

Once I've done that, I'll write down a list of tasks on the whiteboard that need to be done the next day.

A lot of productivity experts will tell you that your daily list should have no more than 2–3 tasks on it; otherwise, you're at risk to overwhelm yourself and end up getting nothing done. If I'm being honest, my daily list usually has 6–10 items on it, and the reason for that is because I am a heartless, soulless robot who works pretty much all the time.

…ok, it's not *that* bad - but I do start things at 6 a.m. each day and usually don't finish until 6 p.m. or later, depending on how busy the week is. **However**, I do have a couple of hacks in place to deal with my many, many tasks which you can take advantage of.

Firstly, I try to **prioritize** my daily list by putting the most important tasks at the top of it. On most days, I don't actually finish the whole list, though I do try my damnedest. By putting the most important tasks first, I'm able to get the *best results* possible, even though I'm not reaching 100% list completion.

There's a great analogy I've heard from several different sources that speaks to the wisdom in prioritizing, and it goes something like this. A professor has a giant glass jar in front of him, and surrounding it are four buckets holding four different materials: big rocks, pebbles, sand, and water.

I'll spare you the less relevant part of the story where he does things wrong to bolster the illustration; the ultimate point is that, by putting the big rocks in first and then moving on to the next biggest material, the professor was able to fit all four materials nicely in the jar. When the big rocks are put in first, the gaps they create are easily filled by pebbles, which in turn leave gaps perfect for sand, and so on.

This analogy applies perfectly to the real world; take care of the important things first and you'll get the best results. What's "important?" Think about your tasks in terms of:

- What will get you closest to achieving your goals
- What will prevent your life from spiraling into utter chaos, destruction, and the rise of Beelzebub himself
- What will require the most *willpower* to complete

That third one - willpower - is an especially crucial consideration, as willpower is a finite resource. There are things you can do over the long term to get more, and over the short term to get the most out of your current store, but it *is* limited. Don't waste is on unimportant tasks; as the day wears on, you'll come to find you're unwilling to do the things that actually matter. Remember: **big rocks**.

Secondly, I attempt to estimate the amount of time it'll take to complete each task (accurately - see the section on the Fudge Ratio below). I then add up all the estimates and come up with a total time commitment for the list, which I'll write at the bottom.

Since I typically start my work each day around 8 a.m. after doing my 2-hour morning routine (see the section on that in Step 7), I'll use that total time estimate to come up with an **end goal** for my work day. Doing this helps to *externalize* my motivation to complete my work by creating time pressure that exists outside of my brain. It's not as motivating as a hard deadline (like a due date on a paper), but it helps keep me from working in ultra-long, unfocused stretches.

Try Timeboxing

My time-estimating strategy for my daily plans that I just went over works well for me, but sometimes you want to go a step further. Enter **timeboxing**. This means actually scheduling specific blocks of time for each task on your daily list. Timeboxing is the closest you can get to becoming your own slave-driving asshole of a boss, but it can be effective if you're able to estimate your time blocks well and then stick to the schedule.

I actually tested out timeboxing during a week in the fall. Instead of creating a single-day task list, though, I timeboxed my entire week.

Doing this was the ultimate way of separating Planning Mode and Robot Mode; when I finished planning and started going through the timeboxes, I already had almost *every* choice made for me: I knew exactly what to do, the order in which I needed to do it, and how long each task should take.

You can use timeboxing in multiple ways; in fact, you don't have to apply it to your entire daily plan. Instead, you can simply try using it on one particular project that you know you've been procrastinating on. By setting a timebox, you'll create some time pressure that'll help motivate you to work more quickly.

You can also use timeboxing when you're faced with a project for which you're not feeling a whole lot of clear direction. When you don't know what to do and you're paralyzed because of it, creating a timebox can motivate you to spend that time at least trying to make some progress.

Know Thy Fudge Ratio

Humans are really bad at accurately predicting how long it will take to do things, and this is due to something called the **planning fallacy**. This is a phenomenon in which people's estimates for the time needed to complete a task show optimistic bias. In short, people almost always underestimate the time needed to get something done.

Here's an illustration: In 1995, a Canadian professor of Psychology named Roger Buehler asked his students when they thought they'd be able to complete homework and other tasks. Buehler actually asked for probabilities - specifically, he wanted to know when students thought it was 50% probable they'd have their projects done, and also when they'd up that to 75% and 99%.

The results?

- 13% finished their work by the time they were 50% sure about

- 19% finished at their 75% probability estimates
- 45% finished before the time they were 99% sure they'd be done at

That last one is the most interesting - *less than half* of the students finished their work in the time they were **99% sure** it would take. They tried to make an extremely conservative estimate, and most were still wrong.

Another psychologist named Ian Newby-Clark discovered the root of the problem in his own studies. He asked research participants for time estimates based on both:

- Realistic, "best guess" cases
- Hopeful, everything-goes-right "best case" scenarios

As it turns out, people's estimates in both cases were virtually identical. The key finding here: When people try to come up with a realistic, "best guess" time estimate, their brains actually consider the **best case**. We are *very bad* at taking unpredictable setbacks and delays into account when making time estimates.

There's actually a good way of accounting for this problem (unlike many other cognitive biases), and that's to base your prediction on a broad view of the task, rather than all the individual components.

When you do this, you can compare it to similar tasks that have already been completed in the real world, and make your estimate based on the amount of time those tasks actually took. As you do more and more work, you'll have more and more data to pull from when doing this.

However, there's another effective trick you can use in making time estimates called the **Fudge Ratio**. This term was coined by the personal development blogger Steve Pavlina, but it harkens back to a concept thought up by Douglas Hofstadter, the author of what is potentially the most daunting book on my shelf, *Godel, Escher, Bach: An Eternal Golden Braid*.

Hofstadter's Law, aptly named, states:

> ## *"It always takes longer than you expect, even when you take into account Hofstadter's Law."*

Hofstadter came up with this law in reference to how long it was taking to develop computers that could become world chess champions (the book was written in 1979), but it applies to a lot of the projects we humans take on.

Pavlina's Fudge Ratio acknowledges the Planning Fallacy and offers up a simple process for fixing it:

1. Write down a list of tasks you need to do.
2. Put an "off-the-cuff" time estimate on each one.
3. As you finish tasks, write down the actual amount of time they took.
4. Divide the actual task time by your estimate to get your Fudge Ratio.

So, for example, say you estimated that it would take you 45 minutes to finish a study guide for your history class. In reality, it takes you 1 hour and 15 minutes. Using math that I learned in 3rd grade when I wasn't thinking about Batman, I can calculate the ratio:

75 minutes/45 minutes = 1.67

Now you know your Fudge Ratio is **1.67** - which means that the next time you need to predict how long it'll take you to finish a similar task, you should multiply your initial prediction by 1.67.

Over time, you won't need to do the math anymore; you just get better at making accurate time estimates. In fact, I *never* did the math. As a student, I started trying to make better predictions before I ever heard about the Fudge Ratio, and the way I did it was to simply try to be **mindful** of how long it took me to get things done. I also tried to predict potential setbacks, distractions, and other things that might derail me from the "best case" scenario.

If you do this, your estimates won't always be perfect - but they'll be a heck of a lot better than the estimates of most other people.

Use the Captain America Method to Break Down Projects

Planning shouldn't stop at the week or day level. Individual projects should be broken into steps and prioritized as well - and your goal here should be to create a list of steps that are **actionable**.

Hypothetical example: "Study for Calculus Final" isn't a good task – it doesn't implicitly tell you exactly what to do, so it should be broken up into action steps that a robot could do, like:

• Set up study area and download practice problem set from Blackboard
• Review chapter on L'Hôpital's rule in textbook and take summarized notes
• Work through problem set

I call this the **Captain America Method**, because I like superheroes and shaky metaphors.

Captain America was able to break a large-scale alien invasion down into components and direct his resources (the Avengers) to each portion; similarly, you should be able to break up your tasks and devote your resources (blocks of time) to each step.

Here's a couple of examples from my own work:

Answering 97 Emails in One Day

I get a lot of email, and I normally try to stay on top of it. Between questions from readers, partnership opportunities, old web design clients, and everything else, I probably get 20–30 emails that **require action** every day.

During the early fall of 2014, I spent quite a bit of time traveling to conferences and other events. As a result, the emails piled up to levels that weren't easy to clear out in a day – so I just neglected them entirely. My negligence eventually culminated in an inbox that held 97 unanswered emails.

Since I delete everything that isn't important every day, each of these emails that remained in the inbox required some sort of action – essentially leaving me with a 97-item to-do list.

Day after day, I'd tell myself:

"Today the day I'll answer them all!"

I call this the Hulk method, as I was simply trying to **brute force** the task. It didn't work; day after day, I'd try to tackle my inbox, realize how big the task was, and inevitably go do something else.
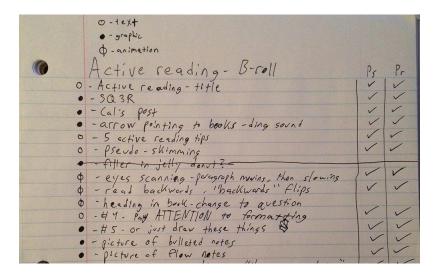
Then, one day, I decided to draw out a specific plan detailing exactly *how* I'd tackle my emails. I categorized each message, then created steps based on which messages were of the highest priority. Then, I forced myself to go through my inbox in the exact order the steps dictated.

Doing this worked - I finished answering all 97 emails **within 24 hours**. This is the day I came up with the Captain America method, because it was what I was doing; breaking down my task and planning out how I'd devote my resources to it.

Creating Craptons of B-roll

For each of the videos I make for my YouTube channel, I have to create B-roll - all the graphics, animations, and other things that go over the main footage of me talking.

Without B-roll, the videos would be much less interesting. However, creating it is a lot of work. It's a messy process and takes a really long time to do. So, in order to keep my mind focused, I created this list for my video on active reading:

Look at the legend at the top: I've broken this list of 20-something B-roll items down in to contexts. Some are just text, some are graphics, and some are full-blown animations.

They're also written in the order that they appear in the video. Lastly, the two columns of checkmarks let me track my progress on both creating the B-roll in Photoshop and including it in my Premiere Pro video project.

With this list in hand, I was able to go down the line on a per-context basis. First, I created almost everything in Photoshop, and then I moved onto Premiere. This was a lot more efficient than switching between the two for each item.

Step 8 - Study Smarter

Much of this book has already tackled topics that can help you become better at studying. We've gone over how to beat procrastination, how to read and take notes, how to build your environment, stay organized, plan well, etc.

However, *this* step will focus on the actual act of sitting down and attempting to permanently encode information you've already learned once into your brain.

Replicate the Test Conditions

This may seem like an obvious question, but ask yourself: *Why are you studying?* You're going through your classes and major because there's a specific set of information and skills you want to learn… but there's a more **pressing** reason as to why you need to study *now*.

That reason is the **assessment.** Your immediate need to learn and remember certain material from your classes stems from the quizzes, exams, and essays you'll face later on. You can take advantage of this fact by attempting to **replicate the test conditions** when you study. If you can simulate your exams during your study sessions, then you'll experience much less anxiety and be far more prepared when you actually walk into your tests.

Here's a simple process for doing this:

Step 1: Gather Your Materials

Hopefully your organization skills (built in Step 6) will make this easy. To get started, pull together any and all class documents, notes, and learning materials that pertain to the test. These include:

- Your syllabus, assuming it includes assignments/readings/test details
- Class handouts
- Lecture slides, if they're available to you
- Your own notes
- Homeworks assignments
- Your textbook

Now your ammo is well-stocked. Time to formulate a plan of attack.

Step 2: Identify What's Important and Build a Study Guide

Use the details from your syllabus and other materials handed out by your professor to start making a list of the **most important topics** that you think will be covered on the test. You should also review your notes and look for the top-level terms and concepts that were covered in class - these will probably show up on your test.

Your syllabus may provide hints by listing topics covered in class, specific reading assignments, etc - so make sure you consult this as well.

If you professor happened to provide a *study guide* for the test, this is the equivalent to a bar of gold. Actually, gold isn't all that useful in an objective sense... ok, it's even more useful. In my experience, study guides from your professor are often an outline of *exactly* the material you'll be tested on. I vividly remember going through my Human Sexuality study guides, only to show up on test days and realize my exams were basically exact copies of said study guides. I should have brought one of those Easy Buttons to class with me.

Assuming your professor doesn't just hand you the keys to the kingdom in the form of a study guide, **it's time to make your own.** Start looking at your list of important topics, terms, and concepts you put together, and turn those into a list of **questions** that will force you to recall the information *actively* (more about this in the next section).

Think of yourself as an army for the purposes of this study session; right now, you're a team of **drill designers.** You're currently designing the combat drills that your soldiers will run through in order to build the muscle memory, team dynamics, and keen judgement required to be effective in a real combat situation.

If your army doesn't run through drills, or if the drills don't closely match what they'll find in real combat, then they won't be well prepared. That's why it's important to try, as closely as you can, to mirror the format of the exam when you study.

You can even play with other factors, such as the location and time constraints, once you've gained a solid grasp on the material. For big tests, it's often worth doing a final practice run to make sure you're ready. Remember this:

> "The mark of good learning isn't that you got it right; it's that you can't get it wrong."

The closer your study conditions are to your test conditions, the more you'll be able to *reduce your anxiety* come test day. This is **vital,** as anxiety actually *blocks* your ability to recall information easily. If you've **mastered** the material, however, you can overcome this anxiety. And, if you've already experience similar conditions to what you're facing during the test, that anxiety might not creep up as badly in the first place.

Step 3: Get to Studying

Now, get to work. Use your procrastination-fighting techniques, and maybe even a bit of timeboxing, to force yourself to study. Fill out your study guide by actively answering the questions you created earlier. Test yourself until recalling the material is easy.

Godspeed, friend.

Emphasize Active Learning

I've had friends who would "study" for a test by opening the lecture slides and lazily scroll through them. I'm not sure if they were hoping to learn by osmosis or something, but *spoilers*… it didn't work well.

Passive Learning - simply trying to expose yourself to information in the hopes that it'll "sink in" somehow - isn't very effective. Your brain learns best when it's forced to *do* things - work out hard problems, recall previous information it learned, etc.

This is called **Active Learning,** and it should form the basis of all your studying efforts. This start with active reading, as I talked about in Step 3 - you should go through your reading assignments intensely, either highlighting, taking notes, or summarizing what you read.

Your proclivity towards active modes of learning should then extend to your studying and review sessions. This is another huge reason I showed you the process in the last step - the act of gathering your materials, creating a study guide from them, and then answering those questions (essentially quizzing yourself) is all part of learning actively.

Use Spaced Repetition

When it comes to learning lots of individual facts and pieces of data - vocab terms, foreign language words, definitions - **spaced repetition** is one of the most efficient techniques for getting them into your long-term memory quickly.

Spaced repetition is a learning technique that encourages you to study the things you're good at *less* often, while quizzing you on the things you're bad at *more* often. As you study, a spaced repetition will record your performance on each item and define a period of waiting before showing you that item again. If you find it easy to recall the information, you won't see it for a long time; if it's difficult, you may see it multiple times in the same study session.

This benefits you in two ways:

1. You efficiently spend your study time on the things you still need help learning
2. Your brain is forced to recall each item at a point where it's closer to forgetting it

The harder your brain has to work to recall something, the more useful that instance of recalling it is.

Spaced repetition studying is most often carried out with flashcards, and the most useful program for practicing it is called Anki. This app is available for every major platform as well as on the web, and it lets you create "decks" of cards that you'll study just like paper flashcards.

Anki also has a large bank of shared decks made by others, which you can definitely peruse. However, I do think it's very useful to create your own decks, as the act of creating study materials exposes your brain to the material in a different context - creation instead of review. This, in turn, helps you become even *more* familiar with it. Remember those professors that let you fill out a single notecard for use on a test? The kids that spent all night trying to cram their entire textbook onto the notecard in uber-tiny handwriting ended up learning a lot of that material in the process. Creating your own flashcard decks has a similar effect.

As you study with Anki, you'll provide it with a difficulty rating for each flashcard once you reveal its answer. Anki will take these ratings and use them to figure out how long to wait before showing you that card again.

Anki takes advantage of the **spacing effect,** which is a phenomenon in our brains that makes it easier to remember information that is presented in multiple, spaced-out study sessions rather than one huge cramming session. As a result, Anki is at its best when you start using it early and regularly. While you can fiddle with its settings to help with late-night cramming sessions, it won't be as useful. Hopefully, though, your planning skills will eliminate the need to do this very often!

How to Study Math (and Similar Subjects)

Subjects like history are like jigsaw puzzles; you can start almost anywhere, and as you learn, you'll eventually piece together individual pieces of information and stories into one big, cohesive whole. By that analogy, though, subjects like math are like a **house.**

There's a definite place you should start, and each new concept you learn *builds upon the last.* This means that you need a solid understanding of each concept before you move onto the next.

"Each truth that I discovered became a rule which then served to discover other truths." - *Rene Descartes*

To learn math effectively, you have to account for this fact when studying it. You can't tackle it like other subject; building an Anki deck for math terms and calling it a day isn't going to help you much when you're trying to complete a math test. To that end, there are tips I have for your math studies:

1. Learn to notice your confusion
2. Understand, don't memorize
3. Do the f*cking math

Learning to Notice Confusion

You're going to spend a lot of time confused when you're learning math. However, due to the breakneck pace of most math classes, you may not always notice exactly *where* your confusion stems from - you might look at an example problem, understand most of the process that led to the answer, and simply decide that it "makes sense" at the time.

When you find yourself thinking that something "makes sense," it's probably a good time to challenge that assumption. Can you take a similar problem and work it out to get a correct solution? Many times, you'll try this and find that you get stuck at a certain point when your professor isn't there to guide you through it. You've learned part of the process; as one Stanford math professor said, you've gained some tendrils of knowledge that extend away from your comfort zone. Now, you need to "backfill" - go back and fill in the gaps that remain. Learning math in a completely systematic way, where you understand every concept perfectly before moving to the next, is almost impossible. This "backfilling" is necessary for you to be able to move on.

Understand, Don't Memorize

This goes right back to what I mentioned about *mastery* in a previous section; however, with math, it's doubly important. In math, you need to understand *why* operations work the way they do. You need to grok the *underlying logic* behind the concepts you're learning.

When you do this, you no longer need to memorize things. Memorizing can help you fit shaped blocks into similar-shaped holes that you've seen before - "Ok, I know *x* goes *here* in this equation because I saw it before…" - but understanding will give you the ability to tackle problems with details you haven't seen before. A core understanding of the fundamentals makes it possible to deal with new things.

You should be shooting for the, "Aha!" moments. Let's step back from math for a second to take a look at another subject I've spent a lot of time in - programming. As a web developer, I've had to get my hands dirty with several different programming languages, as well as frameworks that build upon those languages and add their own constructs and shortcuts.

When you're learning a new language, you don't understand it. However, you're still able to look at the source code for a particular program or web page, look then to the actual product, and see that it works. You could just memorize the exact code and type something similar later on to get the same result - but you don't actually understand *why* it's giving you that particular output. You can't follow the logic of the code yet.

Since web development was my job, though, I *needed* to know the "why." It was my job to use these tools to create new projects with different features, so the I needed to understand the logic. Eventually, after spending hours pouring over existing code, tinkering and changing things, reading through documentation, and asking for help, it'd finally "click" and I'd say:

"Ooooooohhhhh!!!!"

These are the moments you should seek when studying math. If you don't understand a concept well enough to work problems that use it, you need to keep pushing until that concept "clicks." Your goal is true understanding, not memorization.

A good rule of thumb for gauging understanding is the "Explanation Test." If your kid brother asked you about the concept you're studying, could you adequately explain it to him? Could you work through an example problem with him and tell him *why* each step happened the way it did? If not, you have more work to do.

Do the F*cking Math!

In high school, my idea of studying math was sitting back in my chair and watching the teacher go through example problems on the board. During class, I'd watch him go through each step and think, "Yeah, that makes sense. I could do this myself."

Here's the thing: Sitting back in your chair and watching your teacher do math makes you good at... sitting back in your chair and watching your teacher do math.

Math is not a spectator sport. While you're in class, you should strive to record as much detail as possible in your notes - including the fully worked-out versions of practice problems - because later you need to hunker down and actually **do problems** on your own.

Math is all about going through the actual procedures, working the problems, and getting your hands dirty with the concepts and rules. During math tests, you won't spend much of your time answering true/false questions about math concepts. Learn their definitions, yes - but spend most of your time working out problem after problem after problem. *This* is what you'll have to do during a test, and the only way you're going to get good at it is *practice.*

In addition to doing lots of problems though, you can also **seek help.** Ask your professors, form a study group, or use one of these online resources (they're certainly not the only ones):

- [Wolfram Alpha](#) - type a math problem into the search bar and it'll both solve it *and* give you the steps. Don't use this as a crutch.
- [Mathematics Stack Exchange](#) - a great place for asking math-specific questions.
- [r/homeworkhelp](#) - a subreddit dedicated to helping people with homework problems.

I'll mention one last thing: The scope of this book isn't big enough to cover individual math topics, but you *should* make sure you're clear on things like notation, order of operations (PEMDAS does *not* mean you do multiplication before division; don't let me catch you doing it), etc. Also, check your work on tests. You *will* make dumb errors at times.

Step 9 - Write Better Papers

On my first day of 10th grade, I walked into Mrs. Coover's *Honors English I class and expected it to be a complete cakewalk, much like every other English class I had ever taken.

Five minutes later, she announced,

> *"Each of you has 6 essays to write by the end of the week."*

Jaws dropped. Eyes bulged. Incredulity became more than a shared mental state; it became a tangible part of the atmosphere itself. You could breathe it.

Of course, none of us died. Writing 6 essays was tough, and the class' difficulty stayed high for the rest of the semester - but we made it through, and with incredibly improved writing skills to boot.

Due in part to the solid foundation Mrs. Coover's class gave me, writing a 5-page paper is no longer a daunting task for me. This section of the guide will attempt to make it a bit less daunting for you as well.

Do a Brain Dump

Your process for completing a writing assignment should start out much like any other assignment; you'll use the skills you learned from Step 6 to gather all the relevant materials and instructions you need to plan out the project and make sure you're know all the criteria.

After that, it's time to do a **brain dump.**

This entails thinking about your paper's topic, and then vomiting out everything that comes to mind onto a piece of paper (or an Evernote note). Include:

- Everything you know about the topic

- Questions you have
- Points you think you might like to cover
- Outside sources you'd like to research
- Quotes from others that come to mind

The brain dump is completely unstructured. Your resulting document should look like a mess, because it's a direct representation of what's in your head right now - a messy, unfocused jumble of ideas and questions.

Once you've got that jumble in a safe, permanent place, you can start on the next phase of the process.

Develop a Focus and Key Questions

Now that you've done your brain dump, the next major task you'll be undertaking is **research**.

However, you should first take some time to do two things:

1. Develop a well-defined **focus** for your paper
2. Come up with several **guiding questions** that you'd like to answer

Research is messy, and if you're not focused, it's going to take you a lot longer to extract meaningful information from your sources.

By developing a focus, you're giving yourself **direction** with your research. It'll also help you to *stay on-point* later when you're writing. My friend Ransom Patterson mentioned in a guest post on CIG that many students make the mistake of not having a clear point when writing their papers; you want to make sure you don't make this mistake.

By taking the time to come up with questions you'd like to answer about your topic, you're creating little mini-goals you'll have in mind while reading. Have you ever tried to look at your surroundings and pick out every object of a certain color? Interestingly, if you close your eyes and focus your mind on that color first, things of that color will stand out much more prominently when you look around again. You've primed your brain to notice that color. Writing questions has a similar priming effect on your brain when you're doing research, so don't skip out on it.

Conduct Better Research

Alright, it's time to stalk to aisles of the library like a wraith… right? Well, yes - but I'd like to help you minimize your time as a wraith and make it as effective as possible.

Cal Newport's book *How to Become a Straight-A Student* has an entire chapter dedicated to research (which I recommend checking out), but I just want to point out a couple things from it here.

The first is that many students get caught up in what he calls **research recursion syndrome** - the "unhealthy need to find yet another source" which can lead to hours of wasted time.

The second is his method for avoiding this, which he sums up by saying, "Research like a machine." This research process is a simple algorithm:

1   Find sources
2   Make personal copies of all sources
3   Annotate the material
4   Decide if you're done

Now, before I give you my take on the first step of this process, do me a favor - check to make sure no professors are looking over your shoulder.

Are we good? Ok.

To start finding sources, **use Wikipedia**. Yep. The actual articles on Wikipedia are generally very good, but what you're looking for here are the *sources at the bottom of the page.*

Wikipedia has rigorous standards for the sources of its articles, which means that those sources are often good enough for your papers.

You can also do this with general textbooks and other books such as popular science books. If you look in the back, you're likely to find a detailed bibliography that'll lead you to much more specific and useful texts.

Beyond that, you can still use journal databases and Google Scholar to find even more sources.

Once, you've found a source, you want to save it in a place where it can be easily managed. For this, I recommend using **Evernote**.

I had a notebook for every class in Evernote as a student, and I highly recommend that you do the same if you use the app. However, if you have a writing project that requires a **lot** of research, you might want to actually create an entire notebook for it.

When you find an online source, you can use Evernote's Web Clipper save the entire article into your research notebook. When you're dealing with print sources, you can photocopy relevant pages and upload them to your notebook via your computer, or use the Evernote app (or something even faster like

Scanbot) to take a picture with your smartphone and import it.

Annotation shouldn't be thought-of as full-blown note-taking; you've got the sources available, so don't worry about taking super-detailed notes. Rather, I recommend skimming your sources quickly and creating short notes that reference page numbers. For online sources you've clipped, Evernote has a handy highlighting feature that works well.

That last step of the process, deciding if you're done, is quite personal. Cal's suggestion is to list out all the main facts and points that are crucial to support your thesis and make sure you've got at least two sources for each. For topics that might not be crucial, but that you still might like to add, try to have at least one source.

Write a Shitty First Draft

Perfectionism is paralyzing. When you think you need to write something amazing the first time your hands start pressing keys, your brain will freeze up and you won't be able to write anything. Unfortunately, this is all too often the state of mind we goal-minded individuals find ourselves in; we simply want to put out great work.

The cure for this? **Write shitty first drafts.**

Relegate yourself to knowing that your first attempt at writing something will yield a result that's less than stellar. Be ok with that; you'll be editing and revising later.

Earnest Hemingway didn't say:

> *"Write drunk; edit sober."*

…but people think he did, and regardless of who said it, it's a fitting quote for this section. Write "drunk". Write like you're one of the DragonForce guitarists, noodling out a random crazy solo without any forethought. Write like you're dancing with the girl of your dreams and you're spinning her around and she's smiling so brightly and you absolutely can't stop to think about how silly you must look because then you'd trip and the whole thing would end.

Yeah. Write like that.

Writing your first draft has a similar purpose to doing the brain dump. **It's all about simply getting your ideas out onto paper.**

Your first draft has the added purpose of adding some structure to those

ideas, but it's not the time to be carefully thinking about prose and document structure and all that jazz.

When you write this shitty first draft, write it in a place where you're **not emotionally invested**. This means either:

- Writing in a document separate from the one that'll become your final paper
- Writing in an entirely different application

I do a lot of my shitty writing in Evernote. I actually have a "Daily Writing" notebook, where I try to simply vomit out words on a prompt every morning. These words will eventually become beautifully crafted blog posts, book chapters, and videos - but in Evernote, there's no pressure for them to look good right away. I know Evernote isn't where I'll publish the final product, so I don't care if the writing there isn't polished.

Other times, I'll do my shitty writing in [Byword](), which is a beautiful, distraction-free writing app for the Mac.

Finally, don't be afraid to meta-write; to **write about the writing**. On many days, I'll start my daily writing session with a paragraph or two about how tired I am or how much I *don't* want to write. I'll curse and say stupid things. Sometimes I'll write little offshoots after a particular sentence - *"Ok Tom, you definitely can't leave this in because you'll look like a prat" - things that keep the stream of consciousness flowing.

Thanks for Reading!

Hey, you made it to the end! Thanks so much for taking the time to read this sample of the book - I hope you enjoyed it.

Once again, you can get the full version for free right here: collegeinfogeek.com/book

~ Thomas Frank ([@TomFrankly](https://twitter.com/TomFrankly))