

**THE KEYS TO SUCCESS**

**FOR**

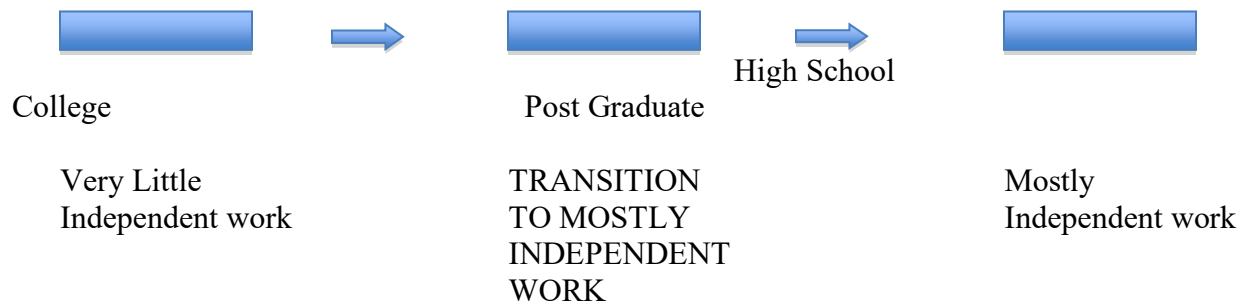
**STEM**

**STUDENTS**

## Introduction

When I finished high school I graduated with a very high GPA and also performed well on my SAT exam. High school was a breeze and I didn't have to work very hard to perform among the elite students in high school. However, when I started college things were different. I attended an Ivy League school on a full scholarship. By the end of my sophomore year my GPA had dropped below 3.0 and I lost my scholarship. I was lucky that a neighboring small college accepted me and gave me a second chance at college. The chairman of the chemistry department mentored and encouraged me which was critical to my new found success. With his help and support, I worked and put myself through college as an independent student. I also realized I had to change my old ways of doing things. On reflection, I realized I was a *master procrastinator* and did not know how to be a *serious student*. I thought about all my old Ivy League friends and my new peers that were successful and decided I would follow their lead and *learn* to be a better student.

One major difference between High School, College and Post Graduate work is the amount of independent work a student is asked to do at each level. In many high schools the teacher does most of the work during class time and the student does minimal work outside the class room. When students get into post-graduate programs they are expected to do the vast majority of study independently and only a small percentage is discussed in class. I deliberately skipped the behavior of college students. How should college students conduct themselves? Should you expect the professor's to teach you slowly and deliberately like high school or should you expect to learn more outside of the class room? The answer is simple, you must learn to work independently and start the process at the very beginning of your college journey.



When you prepare your weekly schedule, we will incorporate a routine that is going to assist you transitioning to mostly independent work. When planning your study hours for each individual STEM lecture, you must plan a lecture PREVIEW and a lecture REVIEW for each class. A sample weekly schedule is presented later.

What you will find in the coming pages are tips on how to undergo change from the master procrastinator into a serious student based on my experiences. I learned these tips from mentors and by paying attention to what the most successful and competitive students I knew were doing. Then I tried to adjust my habits and routines to compete with them. I truly hope these tips and strategies will help you become a serious student and allow you the opportunity to reach your full potential.

## Assessing Your Current Situation

The first step is to take a quick assessment of a few of your current habits as a student. It is important that you be honest with yourself during this assessment. You will find the procrastinators behavior is to your left beginning at the number 1 and the serious students behavior is on the right and represented by number 10. Examine each set of behaviors and give yourself a score between 1 and 10 for each of the following sets.

### ARE YOU A MASTER PROCRASTINATOR OR A SERIOUS STUDENT? YOUR FUTURE MAY DEPEND ON THIS!

**MASTER P →      1 2 3 4 5 6 7 8 9 10      ← SERIOUS S**

- |   |       |  |
|---|-------|--|
| -Does no time management  | _____ | -always has a schedule   |
| -never reads before class   | _____ | -is always ahead of the instructor                                 |
| -never seeks help from the instructor<br>Or campus support services   | _____ | -meets all instructors and seeks help<br>when needed               |
| -writes papers the night before they are due  | _____ | -prepares a draft early  |
| -studies for exams at the last minute   | _____ | -has a weekly study plan to avoid<br>cramming                      |
| -blames others for their difficulties   | _____ | -takes responsibility for his/her<br>actions                       |
| -has no approach to studying  | _____ | -utilizes note cards, summaries or<br>other tried and true methods |
| -justifies procrastination<br>( <i>I work better under pressure</i> )<br>( <i>I keep my schedule in my head</i> ) | _____ | -recognizes success comes from<br>hard work                        |

Once done, add your score and divide by 8 to determine your average score.

I **am** a number (average your scores) \_\_\_\_\_ on this scale.

I believe I *can be* a number \_\_\_\_\_ on this scale.

Answer the following question before continuing.

**What can I do to increase my number?**

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### What's Next?

Now that you have this number, why should you care? Because *procrastination* is a *thief*! I asked students in a recent workshop, "In what ways are you robbed when you procrastinate?"

Here are some of the things they said they were robbed of on the first four lines and please add things that you think procrastination robs you of on the last four lines:

- Time
- Sleep
- Peace and relaxation
- Grades
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

The one thing that none of the students put on the list was *their future*. When you procrastinate you will not reach your full potential and subsequently not reach those goals and dreams that you have as an individual- *your future*. This is the reason I chose to change my habits when I was a student. I knew I wanted my life to matter and I knew my education was very important to me and for realizing my dreams.

Now let's look at your score. This average number represents your commitment to serious work as a student. An average score of 9 would mean you engage in serious student behavior 90 % of the time. No one does these good behaviors every day and all the time.

However, I want my students to target 90 % as a daily and weekly goal. If you do this, I think you will perform close to your full potential.

Most of the students in first or second year classes I have surveyed had an average score of 5.5 to 6.5. If your average score is less than a 9 then there is room for improvement. Now that we know we have room to improve our study habits, let's move to the second step- preparing a weekly schedule. Fill out the following schedule remembering to keep the following tips in mind.

- Fill in your schedule with all your required activities- classes, work, meals, travel, etc.
- Determine the number of study hours you need for each class.
  - 2 hours study/hour in class is typical.
  - 3 to 4 hours study/hour in class for major science/math classes with lots of problem solving.
- Fill in study times for each class individually. This is the only way to properly manage each class. If you are consistently ahead of the instructor at the end of the week then you'll have flexibility. You can reduce the time for that class or increase it if needed.
- avoid assigning more than 2 hours per study session for an individual class.
- spread out your study time for each subject during the week and allow some "free" time.
- Once we make a schedule we must **commit** to follow it. This may be difficult at first.
- Your first goal is to just sit down to study according to the schedule.
- There are always distractions for you to manage.
- Learn to shut out the usual distractions.
  - turn off the cell phone, television, any music and avoid the computer when not needed.
  - check your phone or facebook when you finish.
- If you have difficulty concentrating, then try reading out loud to yourself.
  - this will help you focus.

-Do not stop the study session even if it's difficult to concentrate. It will eventually work if you are persistent. Give it time. I have had some students get organized and focused in a matter of weeks while others take a semester or two to fine tune this process.

-Show your schedule to everyone involved in your daily life- family, roommates, boy/girl friend. Ask for their support.

### Example Weekly Schedule

	Monday	Tuesday	Wed.	Thurs.	Friday	Sat.	Sunday
8:00 am							
9:00 am	CHEM		CHEM		CHEM		
10:00 am						Chem St Review	
11:00 am		MATH		MATH			
12:00 pm							
1:00 pm	ENGL		E NGL		ENGL		
2:00 pm		Engl St Preview		Engl St Preview			
3:00 pm	Engl St Review		Engl St Review		Engl St Review		
4:00 pm							
5:00 pm					PLAY	PLAY	
6:00 pm							
7:00 pm	Chem St Review		Chem St Review				Chem St Preview
8:00 pm		Chem St Preview		Chem St Preview			
9:00 pm	Math St Preview		Math St Preview				Engl St Preview
10:00 pm		Math St Review		Math St Review			
11:00 pm							
12:00 pm							

Code: ST = study, BR = break (i.e., meals, nap, etc.), PL = play, CHEM = chemistry, BIO = biology, MATH, ENG. etc.

The preview study session is when you try to master as much material as possible independently and identify any areas of concern. Use the lecture to validate information learned and hopefully answer the questions generated during the preview. If you still have questions about the lecture material ask the professor to help you immediately! The review should be done the day of the lecture and should include review of concepts and the practicing of problems.

At the end of each day, ask yourself: what percent of my schedule did I complete? You should log your daily percent work completed in the Efficiency Table. Achieving 90% of your schedule routinely should be the goal. Once you feel you routinely achieve about 90 % success, you should not have to monitor the percent work so carefully.

When faced with trying to maintain a schedule for the first time, most students are eradicat at best in keeping the schedule each day. You should monitor how much work you actually accomplish each day in your Efficiency Table. You will settle into more of a routine as the weeks go by.

Using the approach given above, I was able to modify my behavior as a student. I learned good study practices, learned new study methods and most importantly I implimented them in my life and let the Master Procrastinator go. I became a Serious Student!



## EFFICIENCY TABLE

What % of My Schedule Did I Do Today?

	Monday	Tuesday	Wed.	Thurs.	Friday	Sat.	Sunday
Week 1							
Week 2							
Week 3							
Week 4							
Week 5							
Week 6							
Week 7							
Week 8							
Week 9							
Week 10							
Week 11							
Week 12							
Week 13							
Week 14							

## Study Methods

To complete your development as a student, you need to incorporate tried and true study methods into your study routine. One method that was taught to me that is essential for memory work is the utilization of note cards. In all STEM subjects there is conceptual/theory work and many new definitions and equations to memorize. I found note cards to be the best methods for definitions and equations. I use the same method that my kids used in elementary school and simply place the Key Word or Name of the Equation on one side of the note card with the Definition or the Equation on the back side. The note cards should be flashed whenever you have free time to quiz yourself on how well your recall is. The last steps before taking your exams is to write your answer on paper instead of just reciting your answer. You should do this last step of writing out your answers 2-3 times in your final preparation for exams.

The second method that I found useful is the Summary Method. This method is used in biology or organic chemistry. Use this method whenever you are presented with a multistep process that you must know. In the world of biology one might need to know the steps to a process like the Citric Acid Cycle or a reaction mechanism from organic chemistry. In either case, write the name of the process at the top of the page then write the sequence in a series of vertical steps in your summary. Review the summary by covering the entire page then expose the name of the process and recite the first step followed by lowering the cover page to confirm the correct answer. Now recite the next step in the process and check that one step by sliding the cover page down. Repeat this one step at a time until the entire sequence has been reviewed. The final preparation requires uncovering the name of the process only and ALL the steps must be written from memory.