

Canada College – Science and Technology Department
ENGR 100 - Introduction to Engineering - Spring
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My Process to Become a "World-Class" Engineering Student

by



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Introduction

This is a report about how I can become a “world class” engineer. I will cover what I think a “world class” engineer is as well as how I can work on becoming one myself. Through out the semester we as a class worked in groups to discuss what it is to be a “world class” engineer and where we are to becoming “world class” engineers. We had group discussions, lectures and a textbook, *Studying Engineering: A Road Map to a Rewarding Career* by Raymond B. Landis, that helped us develop plans and strategies to become “world class” engineers. I will focus on what it will take and where I currently stand as an engineering student and what will be necessary to becoming a “world class” engineer.

Short and Long Term Goals

My long-term goal has been set since I graduated high school, which was to get my bachelors degree in Mechanical Engineering. I knew from an early age that I was proficient in math and wanted to do something math oriented, and knew I was not cut out for accounting. So, early on I asked my counselor what majors were math driven. She recommended engineering and I had no idea what an engineer did and how I fit in. I did my exit project on mechanical engineering and all the different categories it broke down into, which was just a brief exposure to what mechanical engineers actually do. My goal from there was to figure out what I needed to do to become a mechanical engineer and start heading in that direction.

Needless to say I got a little side track from my long term goal, due to work and other outside factors, but during this semester I have been able to set some short term goals to change my habits and move me closer to my long-term goal of having my bachelors degree in mechanical engineering. My short-term goals currently are to finish this semester strong and keep my GPA at around 3.0 and even bump it up the following semester. I wont we taking summer classes so a summer goal is to learn how to program with any of the available programs that Canada, Skyline, or College of San Mateo has to offer. A “world class” engineer would set short-term goals that eventually add up to whatever their long-term goal would be, i.e. a project or thesis paper. Right now, being where I am I know that

setting up goals and deadlines will only improve my study habits to help me reach each and every goal I set as long as I motivate myself to meet the demands to reach my goals.

I plan to transfer to a four year university in a year and no longer than a year and a half. I'm going to transfer to San Francisco State University and finish up in two years being a full time student, with maybe an internship. I feel like having some work experience will help me get my foot in the door with different engineering companies and would give me ideas on which field I'd really want to get into.

One long-term goal that I have is getting my Masters in mechanical engineering, but this will only be plausible if, when I get to that point, I am in a place to further my education. I'm committed to getting my Bachelors degree because it will improve my financial situation for not only me but also my family. My family is my biggest driving factor to becoming an engineer and second is my own self-satisfaction. When I become a "world class" engineer it will be so rewarding for myself, but I am doing it also because it does pay very well. I will go deeper into why I want to become an engineer a little bit later, but let me go back to some of the goals I've set for my engineering education. A few goals along the way are being able to get involved in clubs and projects associated with the schools to apply my knowledge I'm gaining from my classes. A "world class" engineer would never sit back and be satisfied with where they stand, they will always be searching for new ways to learn or do things, and will try to learn something new everyday.

Commitment to my Degree

I've been going to college on and off now for about 5 years. I have only gotten through about two years of my degree and this is due to a lack of commitment. I've been doing things that have hurt my educational goals and have slowed down my path to becoming an engineer. Whether it be going out on school nights or taking vacations during a semester I just have not put my all into becoming an engineer. That though is about to change, because after this semester of learning about what the engineer degree has to offer it has sparked my commitment to do whatever I can to finish my schooling and go out and be a master of my craft. Once I finish I will be able to get a well paying job that will definitely be able to support myself and I will also be able to help my family in our financial struggles. It will allow me to explain clearly what an engineer does and what I do day in and

day out, even if the people I'm explaining it to don't fully understand I will, and that satisfaction is an underlying reason for me becoming an engineer. After I commit myself to becoming a "world class" engineer I will appreciate all the past achievements other engineers have done and it will motivate me to achieve greatness as well. I have made student education plans (SEP) before but I let outside factors inhibit me from staying on track. Whether it was because I didn't like the teachers teaching style or because I was not fully committed this semester has given me ways to deal with adversity which I will discuss later on in this report.

Understanding and Changing Bad Habits

This semester going over certain chapters in Raymond B. Landis book I feel I have been able to find what has been knocking me off the tracks toward my long-term goal of becoming a "world class" engineer. In one of our homework's we did, we looked at all the things in our lives and put them in to different quadrants that represented things that were urgent and important or things that were not.

<p>I Urgent and Important</p> <ul style="list-style-type: none"> -Studying for midterms -Work -Researching my career -Planning changes to my routine -Helping my brother with his daughter -Applying for internships -Paying bills 	<p>II Not Urgent, Important</p> <ul style="list-style-type: none"> -Studying material for semester -Family -Friends -Semester goals -Setting up time management -Making a five year plan
<p>III Urgent, Not Important</p> <ul style="list-style-type: none"> - - - - 	<p>IV Not Urgent, Not Important</p> <ul style="list-style-type: none"> -Going to shows, concerts etc. -Playing sports -Working out -Smoking

-	-Drinking -Going on vacations
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This exercise was very interesting because I was able to see where my time was spent. I found that a majority of the things I was doing in my “free time” was in quadrant IV. In comparison there was not one thing that I do right now that I saw as urgent, but not important. As far as quadrants I and II, I pretty much knew what was going to be in there but had to separate what was urgent and what was more long term. Even these though I felt were interchangeable depending on where I was in my life or what was happening in my life. Subconsciously I have known what I need to do to make my studies more effective and what is holding me back, but just didn’t find a way to make those changes. Now that I have been pointing out my bad habits and figuring out what is important it has changed the way I approach social interactions as well as my studies. There are things I do that I know I can do without, now it’s just a matter of doing without them. As for the things that are important, I need to full assess the best ways to improve the way I approach each thing that is important and make sure they stay important. It wont be easy like the saying says, “it’s hard to break bad habits”. Regardless of how hard it is they need to be broken to become an “world class” engineer. Some of the things I put in quadrant IV could be moved to quadrant II but as of now there are too many other things that will be taking up a lot more of my time and need more attention so they will have to stay in quadrant IV until I am able to manage my time more efficiently. As you may also notice is that there is nothing in quadrant III. This quadrant to me didn’t make any sense. I couldn’t think of anything that was urgent but not important. It may just be how I think of urgent and important but in my mind anything urgent should also be important.

Now looking at my time management I’m able to develop a plan to not waste my time with the Not urgent not important things in my life, and make time managing my person, family, finances and other aspects of my life that drive me towards becoming an “world class” engineer. I recently bought a wall calendar and small white board to schedule my months and weeks so I don’t just wake up and try to throw together a complete day. A “world class” engineer would make schedules of when they want certain projects done and

can plan time for extra curricula's if they finish their work first, and this is one of the main things I need to work on.

Over Coming Adversity

There are always new techniques or methods of learning that arise and some are more beneficial to some than others. Understanding how you learn from various techniques of teaching is a huge part of learning. When I think of a "world class" engineer approaching different learning styles I don't think of how they learn these new styles but how they can make the styles work for them. Also, a "world class" engineer faces barriers and obstacles throughout their learning, but they stop and think what can I do to overcome these barriers or move around them.

First I'll focus on learning barriers, and how I can overcome these barriers to become better students. I read a passage that said "nothing important happens Monday through Thursday from 10pm- 7am, so you're not missing anything." Which could not be closer to the truth. My worst bad habit is knowing I need to study but then going and having fun before getting my work done. A way to overcome a want that I think is a need, is to weigh out the options of that night. For example, if I go out to night I will maybe have fun and get lucky, but on the other hand I will be really tired for class and not that focused. Also in that situation if you go out you will have to spend money on drinks or a cover, and that time driving there and being there takes away from time you could have spent sleeping or studying. In general I have take a look at my wants and needs, then assess which ones I can do without. The next thing that is hard is doing things that are not fun or enjoyable to do.

To try to force myself to do things that are not enjoyable is a tricky matter. It might be easier to do this if I was close to only having courses for my major, then when this thought crosses my mind I can say, "it will be worth it in the long run" or "I need this for my major no matter how hard it is". This is a hard step because no one likes failure, and typically things that aren't fun tend to be difficult. With this level of difficulty there also comes with it the thought of failure, which no one likes to feel. For this barrier, one mentality I'm trying to instill in myself is one must learn from his or her mistakes. So, just because I failed doesn't mean I have to keep failing. I need to learn to take failure and make it positive for even attempting which is a hard thing to do. The thing is though, when I study

and fail we might be thinking, “oh even if I studied I would’ve failed”, but what I should be looking at is; was it the material I studied that made me fail? Or was it the way I studied that made me fail? These questions help me learn more about how I can learn the material better. That way even in my failure we succeed in making myself a better student. Now one of the last barriers and the one I struggle most with is blaming my failure on people or factors external to myself.

I find that when I do fail at things that I know I should excel in, I tend to blame others or not having enough time or resources. In reality, my failures rest on my shoulders and no one else. The only way to overcome this barrier is to think of whatever the situation (homework, projects, work, or whatever it is I’m making an excuse over) and understand that everyone has the same amount of time in a day, and as far as school goes teachers give a generous amount of time to finish most homework’s and projects for the whole class. When I blame others, I have a feeling of guilt and ease because people will typically sympathize with my reasoning, but when I accept my failure it’s demoralizing and makes me not want to try again. The way I will deal with this learning barrier is to lay everything out in front of me and know what’s important. Then I’ll let everyone and anyone know what my goals and game plan is for my goals so when situations arise to deviate away from the goal everyone will be more supportive to keep me on track. It does rest in my hands the ultimate decision of what I do but it does help to have friends and family guide me through bad decisions.

These barriers are hard for everyone to overcome but when I do, I will be successful and obtain my goals. A quote that always keeps me going is one my brother said to me when he moved away, “no matter what happens know I love you and make sure you keep your head up.” This has helped me overcome almost every barrier ever put up in front of me.

During the semester we had a homework assignment where we took a look at how college students tend to be more stressed because of a new environment and/or new responsibilities. The reading was about the different ways to deal with stress as well as how to respond, and what are some indicators of being stressed. When doing the “how do you respond to stress” test, I found my most occurring stress points and effects it has on all aspects of my life.

It wasn't surprising the information as much as what I can do to lower the stress in my life. I know that stress can directly affect my health because my friends tend to be more stressed than I am regardless of what we have on our "plates". The way though that I've been dealing with my stress actually can cause more stress in the long run. I usually cope with my stress from school or work by going out with friends, that can be positive and reduce stress, but frequently I will drink or do drugs that are a long term stress point. I know one of the biggest things I need to change is my lifestyle outside of work and school, but it is the hardest for me to change. There are markers that I have set up in these upcoming weeks that will help remove these harmful habits from my everyday life. One thing that has been hard to overcome that causes me stress is my depression.

My depression stems from my family and mainly our long-term financial situation. I take it upon myself to support my entire family and it overwhelms my mind and this causes me physical stress from my mind always racing. I can't get much sleep because I worry about what I need to do to better our situation or how I can make our lives better. I don't talk to anyone about it because I know everyone's response, "You shouldn't worry about everyone else, and you need to focus on yourself." To be honest I know that, but at the same time I just want to say, "you're wrong! Worrying about myself is against who I am, because I care about the people in my life so much that if I'm succeeding and they are left behind then my life lacks meaning." I seek comfort in others and have a hard time being alone, and this comes from the loss of family members. It has been hard over the years dealing with all this alone. My older brother moved away so I don't get to see him that often and I'm not that close with anyone else to the point of trusting my feelings with them. My family feels broken and all I want to do is fix it, but I don't know how I can do that.

There have been activities or hobbies that I have developed to help me deal with my stress in particular, but as I stated earlier there are still some things that will cause me long term stress that I really need to take care of before my stress becomes a problem to my health and well being. I've looked into how to reduce my stress and improve my depression such as spending time with my family more than I already do, as well as seeking other forms of release rather than drinking and drugs. The latter I have begun to work and it seems like it has helped already. Another thing that will help me with my stress and lack of time is to start managing my time, which is what I will be explaining in this next section.

Time Management and Team Work

There are only a few things that I can think of that constant for everyone and one of those things is time. Managing my time in the past has been very difficult for me to do. I've felt that there were always so many things that I had to do or wanted to do. During this semester I have come to realize I was just trying to do too many things that weren't furthering my ultimate goal. Through different exercises I was able to assess my use of my time as well as what was helping me reach my goal as well as what was inhibiting me from getting there.

A "world class" engineer would set up weekly schedules to make sure each and every task that was assigned would be met. The way I have approached becoming a "world class" engineer in this aspect has been making list for each day of what I want to accomplish. That can consist of just studying or meeting up with a counselor but the main thing is getting in the habit of utilizing my time to accomplish as much as I can handle each and every day. Another part of managing my time requires me to assess how much time I have to spend for the week, because I work part time I have to factor in my time at work as well as my commute to and from school. Once I have a better grasp of my time I will be able to fully take control of my education. One thing I hadn't factored in to my time though was how much time I should dedicate to working in groups outside of class work.

Group work is essential to understanding and brainstorming ideas for difficult problems. A "world class" engineer would definitely understand that learning is both a collaborative and individual entity. For me I always tried to do things myself when it came to homework and learning concepts, but I have seen that it is much easier to learn concepts and fundamentals when you help others and when others help you. You get the insight of how other approach problems and you reinforce the knowledge you learned when you teach someone else. I plan to get more involved with MESA and clubs to get more hands on experience as well as outside help to further my education.

Using Your Resources

There are many forms of resources for every student when going to school, but not everyone knows how to access these resources as well as use them. I am no expert in this

subject seeing how I still don't use all the resources the community colleges have to offer. An elite engineer would seek out these resources whenever they needed to make sure their learning was complete and accurate. I need to start spending more time in the learning center, tutoring center, and the MESA center to get the help I need in becoming a "world class" engineer. This semester is almost over but I have begun going to the MESA center to work with classmates on homework and labs, and I plan on being involved in the math jams they have over the summer since I won't be taking summer courses.

Summary

In conclusion, there are many things that I still need work on to becoming a "world class" engineer, but I see them as small goals in the pursuit of my main goal, which is graduating with my bachelor's degree in mechanical engineering. When I think about what I still have to do, all I see are things to make me a better and more educated being. I wish to use my knowledge I gain to better our world and I will reference back to this report for future encouragement. Not only that but I will look back and tell my self this was the turning point in my learning and how it shaped the person I will become in the next few years.

References

[1] Landis, Raymond B., "Studying Engineering: A Road Map to a Rewarding Career", 3rd Edition, Discovery Press, Los Angeles, California, 2007