

Alternative Project Statement – Extended Version

Design your Process for Becoming a “World-Class” Engineering Student

Engineers design products or processes to meet desired needs. Your desired need or goal (hopefully) is to graduate with your Bachelor of Science degree in engineering. But what is the process you need to apply to be successful in achieving this goal?

Task:

For each of the following items, develop a plan that will indicate:

- a. Where would a “world-class” engineering student want to be on each item
- b. Where you are currently on each item
- c. What you need to do to move from where you are to where you would need to be to become a “world-class” engineering student

By analyzing a. and b. you will be able to answer c., which will tell you what your process to success is! Keep in mind that your report will describe your process to success.

Items:

1. Goal Setting

- a. Setting your goal(s), i.e., major, time to graduation, GPA
- b. Strengthening and clarifying your commitment to your goal(s)
- c. Setting up a "Road Map"—a plan to guide you over the next years to graduation
- d. Understanding the essence of engineering

2. Community building

- a. Building relationships, and making effective use of your peers
- b. Participating in co-curricular activities

3. Academic development

- a. Navigating the university system, resources and academic advising
- b. Understanding teaching styles and learning styles and how to make the teaching/learning process work for you.

4. Personal development

- a. Enhancing your self-awareness and improving your skills to practice academic success strategies
- b. Outlining what attitudes and behaviors you need to change/add to be successful
- c. Managing time and tasks
- d. Engaging in good health and wellness practices including management of stress
- e. Developing a high sense of personal and professional integrity and ethical behavior

Deliverable: Describe your plan in a 10-12 page report

Additional Information for Items

1. Goal Setting

- a. Setting your goal(s), i.e., major, time to graduation, GPA
 - What do you want to achieve through your engineering education (major, time to graduation, GPA, etc.) and beyond
- b. Strengthening and clarifying your commitment to your goal(s)
 - Clarifying what success in engineering study will do to enhance the quality of your life (rewards, benefits, opportunities, payoffs, etc)
 - Understanding the essence of engineering (be able to articulate an answer to the question "What is engineering?")
 - Being aware of past engineering achievements, current opportunities (academic disciplines, job functions, industry sectors) and future directions.
- c. Setting up a "Road Map"—a plan to guide you over the next years to graduation
 - A term-by-term academic plan, outlining what courses you plan to take to graduation
- d. Understanding the essence of engineering
 - Be able to articulate an answer to the question "What is engineering?"

2. Community building

- a. Building relationships, and making effective use of your peers
 - Get to know students in your classes/program/department
 - Build productive relationships for college and beyond
- b. Participating in co-curricular activities
 - Join and actively participate in student organizations including engineering related student organizations (ASCE, ASME, IEEE, etc.)

3. Academic development

- a. Navigating the university system, resources and academic advising
 - Become effective at getting what you want and need from the educational system by utilizing campus resources (such as advising, tutoring, job placement services, health center, etc.)
- b. Understanding teaching styles and learning styles and how to make the teaching/learning process work for you.
 - Identify your learning style and your preferred teaching style and how you will use this information to enhance you teaching/learning process

4. Personal development

- a. Enhancing your self-awareness and improving your skills to practice academic success strategies
 - Understand and practice the concept of “metacognition” to improve your learning process by observing your learning process, feeding back to yourself what you observed, and making changes based on that feedback.
 - Understand the principles of teamwork and leadership and develop skills to be both an effective team member and also an effective team leader
 - Understand and respect differences in personality types, ethnicity and gender
- b. Outlining what attitudes and behaviors you need to change/add to be successful
 - Change your attitudes to those appropriate to success in math/science/engineering coursework. Among those that are candidates for change are:
 - Low self-confidence or overconfidence
 - Reluctance to seek help
 - Resistance to change, grow, develop, improve
 - Tendency to procrastinate
 - Avoidance behavior (avoid difficult or unpleasant tasks)
 - Reluctance to study with other students
 - Negative view toward authority figures
 - Unprepared to deal with inevitable adversity
 - Other negative attitudes identified by you
 - Change your behaviors to those appropriate to success in math/science/ engineering coursework to include at least:
 - Devoting adequate time to studying
 - Adopting the principle that you master the material presented in one class before the next class comes
 - Make effective use of your peers through sharing information and group study
 - Make effective use of your professors both inside and outside of the classroom
 - Prepare for lectures by reading ahead, attempting a few problems, formulating a few questions
 - Other behaviors identified by you
- c. Managing time and tasks
 - Understand and make effective use of time management and priority management
 - Do a good job of managing various aspects of your personal life including interactions with family and friends, personal finances, outside work, and commuting.
- d. Engaging in good health and wellness practices including management of stress
 - Manage stress through stress-reduction methods
 - Understand the benefits and implement good health and wellness practices
- e. Developing a high sense of personal and professional integrity and ethical behavior
 - Understand professional ethical codes related to your major
 - Be able to identify academic dishonest behavior and how to avoid such behavior

Some tips to get started on the project:

- Start early, meaning now!
- Make use of your notes. For example, always write down notes when reading new material before class and during class with focus on how you would implement the topics covered to make them work for you.
- Assignments, in class-activities and homework are aimed to accumulate material which will be very useful for your report, for example there will be a homework where you will need to develop a 4-5 year plan to graduation which you can copy into your report.
- Although this will be your process, study/discuss topics with other students from the course
- Avoid copying verbatim from the textbook or other resources. You can reference to sections of the textbook, e.g., "Understanding the importance of early course preparation, as Landis [1] discusses in Chapter 4.1, will help me to implement the following changes in my attitude and behavior..."

Length of Report

The length of the report should be 10-12 pages; there is no maximum page limit. Reports that contain verbatim copied passages without proper citation will receive 0 credit. In addition, reports that contain lengthy copied passages from sources, even if they are properly cited, will be severely marked down.

Format Requirements

Your report as to be to be written in Microsoft Word or some other software program with the following specifications:

- use font styles Arial, Calibri or Times New Roman with a font size of 12
- use 1.5 line spacing
- use 1 inch margins on all sides

Your report needs to have a cover sheet which must include the name of the course, the title of the report, the submission date, and your name as the author. A report template is posted on the course webpage.

Submission Requirements

Submit a digital copy of your report by [DATE].

Only doc(x) and pdf files are accepted! Name your file in the following way:

- lastname_firstname_CourseName_Project

For example, if your name is Steffen Peuker and the course is ENGR 151 your file name should be: peuker_steffen_ENGR151_Project