

ENGR130 Intro to Engineering
Homework 5: The Engineering Design Process
Fall 2020

Answer the questions and submit the document to the Homework 5 dropbox.

1. What is meant by design criteria?
 - Basically, means what you can do and what you can't do. In other words, Design criteria are the explicit goals that a project must achieve in order to be successful
2. What is meant by a design constraint?
 - Basically, means what you can use and can't use. In other words, Design constraints are those constraints that are imposed on the design solution,
3. You are working on a team designing a power drill.
 - a. List two types of engineers who might be on the team.
 - Electrical Engineer
 - Mechanical Engineer
 - b. List two possible criteria that you might develop for your design.
 - How many volts of electricity will it take for the drill to run perfectly?
 - What kind of Drill bit do I need to use for a better performance?
 - c. What type of research might you need to do during the design process?
 - Find the types and sizes of power drills that are used daily
 - The top brands of power drills
 - And the avg. cost of a power drills
 - d. Once a prototype is built, list two tests that you would perform.
 - A test to see how long it will run
 - A test to see what it can drill through. For ex. Concrete, Metal, Wood, etc....
 - e. Following testing of the prototype, what are the possible next steps that the team might take? (Hint: they would do one thing if the design performed as expected, and something else if not. List both possibilities.)
 - Maybe increase the voltage in the power drill to have a better outcome as performance goes, and take the consideration to make the drill bits harder than normal to prevent them from breaking when it comes to hard surfaces.