ENGLISH 1302: Advanced College Rhetoric: Writing in Engineering
Texas Tech University
Unit II: Describing a Problem

Project 2: Problem Description

Background

Engineers often have to describe and define problems in their writing, whether they are writing a proposal (e.g., for external or internal funding) or writing a final design report (to help prepare readers for their proposed solution). A problem description (sometimes called a "problem definition" or "description of need") rarely stands alone: Usually, it is part of a larger proposal or report. The goal of a problem description is often to set up a need for a project (if it's situated in a proposal) or to set up a solution to the problem (if in a final design report). This project is designed to give you practice clearly defining and describing a problem, which you will do throughout your engineering career.

Prompt

You will individually write a brief problem description regarding the mousetrap car project. Your problem statement should answer the following questions: An effective problem description will

1. provide a detailed description of the problem to be solved;
2. explain why a solution is necessary;
3. list and explain design requirements and constraints for the solution;
4. describe the situation in which the solution must work; and
5. define the scope (the limits to what the project will and will not do).

Your problem description will likely need to be 200-500 words in length to be successful. Include your title (e.g., "Problem Description") and your name at the top of your document. Submit your problem description as a .dox or .docx file.

In order to earn an A or B, your project should conform to the following degrees of excellence:

Content: The problem description includes all the information necessary and does not include any superfluous information that a reader would find unnecessary.

Organization: The problem description is effectively organized so that ideas are presented in a logical manner and claims are foregrounded and supported.

Style, Specificity, and Clarity: The problem description is relatively free of mechanical and grammatical errors. Ideas are clearly articulated with specificity.

Resources for This Assignment

Irish (2015) pp. 39-41 ["1. Problem-Solution"].

Irish (2015) pp. 92-102 ["Stage 2: Defining the Problem" & "Stage 3: Defining Requirements"]

Course Goals Supported by This Project

Rhetorical Knowledge

- Develop facility in responding to a variety of situations and contexts (academic and nonacademic) calling for purposeful shifts in voice, tone, level of formality, design, medium, and/or structure
- Read and compose in several genres, understanding how genre conventions shape and are shaped by readers' and writers' practices and purposes
- Identify stakeholders and their standpoints on issues of public concern, and identify, explain, and analyze the values informing those standpoints

Inquiry & Research

- Formulate viable research questions, hypotheses, and conclusions

Writing Processes & Craft

- Develop a writing project through multiple drafts
- Develop flexible strategies for reading, drafting, reviewing, collaborating, revising, rewriting, rereading, and editing
- Evaluate the work of others, give useful feedback to others on their writing, and evaluate and incorporate feedback from others in their own writing
- Assess accurately the strengths and weaknesses of their own writing, and develop individual plans for revision and improvement
- Enact revision as substantive change

Engineering-Specific Writing Goals

- Effectively and ethically identify, describe, and formulate a design problem through writing