**Problem Definition Template**

**Need Statement**

Describe the “unsatisfactory situation.” What specifically is unsatisfactory about it? Supply any data needed to prove that this is indeed a significant problem. Cite your sources.

**Goal**

Write a brief statement containing a single general goal. The goal must establish the general scope of your search for a solution. Avoid being overly specific in order not to narrow design opportunities, but also avoid being so broad that you have a hard time focusing your search for solutions.

**Objectives**

Define solution objectives that allow you to quantify the expectations of performance. Objectives should include a description of conditions under which the design must perform and/or be measured. This should preferably be in table format (see Table 1) and you should indicate how you will measure achievement.

**Table 1. Solution Objectives Chart for Design Problem**

|  |  |  |
| --- | --- | --- |
| **Objective** | **Basis for measurement** | **Units** |
| Objective # 1 |  |  |
| Objective # 2 |  |  |
| Objective #3 |  |  |
| Add rows as necessary |  |  |

**Constraints**

Constraints include the permissible conditions of design and permissible range of the parameters or performance. Typically: yes-no constraints, equality constraints and inequality constraints. Use bullet format to list constraints:

* Constraint # 1
* Constraint # 2
* Constraint # 3

Only after you have fully defined the problem can you start brainstorming solution ideas. Come up with at least 3 possible solutions that meet the problem definition.