

**ESD.33 Systems Engineering**

**Assignment 3**  
**Quality Function Deployment**

**Due Date:** 29 June, 8:30AM EST

**Deliverable:** Team written report (about five pages)

**Time allotment:** You should expect to spend 5 hours all together on this homework.

**Grading:** 5% of your final course grade. Every team member earns the same grade.

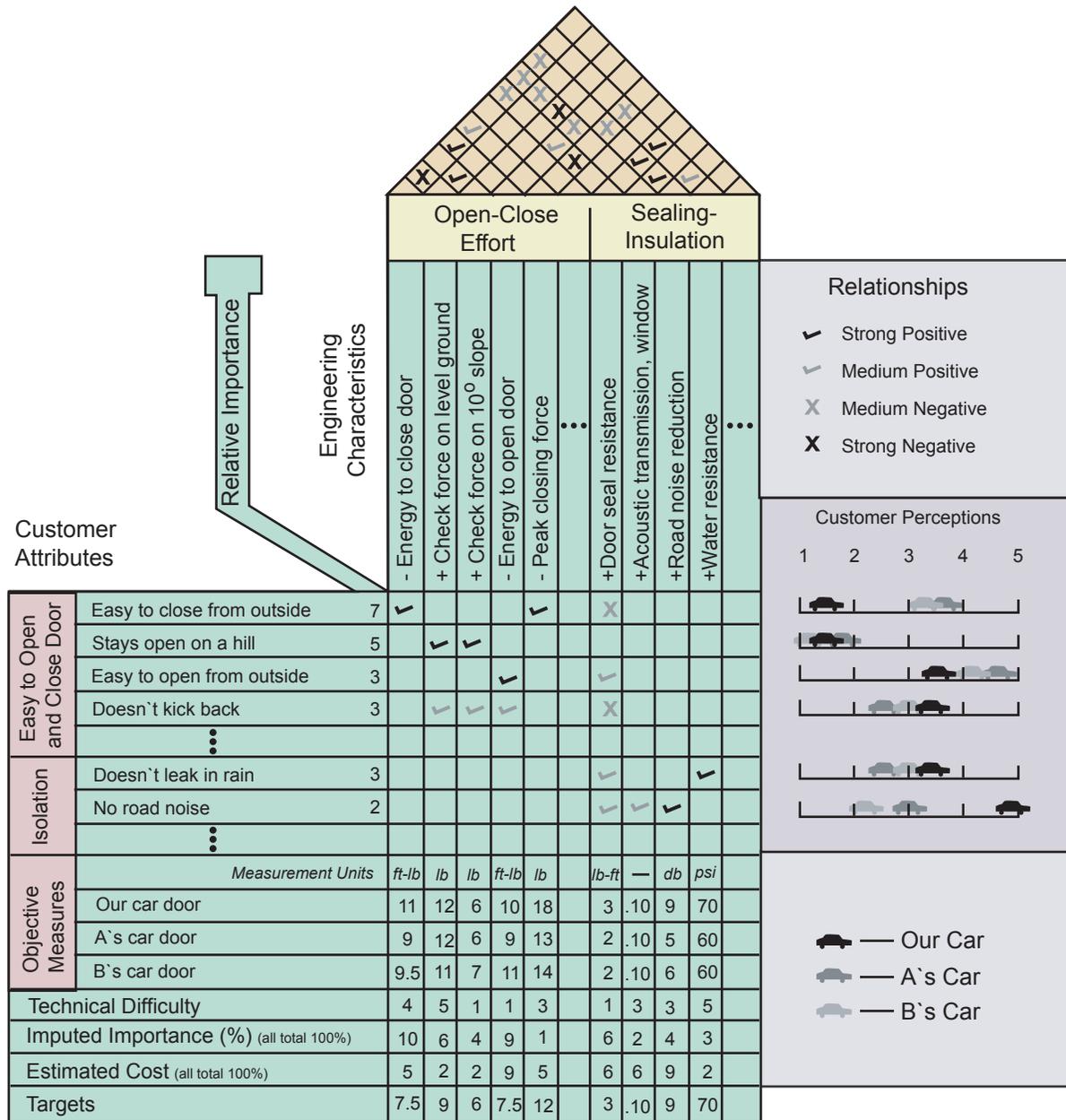
**Objectives:**

This assignment is primarily aligned with the third objective of the course – “apply the most essential systems engineering tools” but it also helps to sharpen your ability to “judge the applicability of any proposed process, strategy, or methodology for systems engineering using the fundamental concepts from disciplines such as of probability...”

**Assignment:**

Self select into teams of 3 to 5 people. In this case, I think it is best to create a heterogeneous team since QFD will normally be practiced with large, multi-disciplinary groups.

1) Select a system of interest to you (or a subsystem thereof) and develop a House of Quality (HoQ) for it. Provide a similar level of detail as in Exhibit X (see below) of Hauser and Clausing (about 10 customer attributes and 10 engineering characteristics). Provide some supporting text or annotations to explain the HoQ. For example, you will need to explain what the system is and who the customers are.



**A complete HoQ.**  
(Adapted from Hauser and Clausing.)

2) Take a small subset (about 2 by 2) of the House of Quality you developed in part 1 and create at least three small, linked houses flowing down the customer attributes to manufacturing, maintenance, operations, or whatever downstream considerations are appropriate to the system. Your figure will be akin to Hauser and Clausing Exhibit XI.

3) Write a short essay (about 500 words) comparing QFD with an alternative approach to requirements development and analysis. Ideally, the alternative should be one with which you have direct experience.. If you do not have such an experience, study an alternative to QFD (preferably choose a method for which you can find data or theory to support its effectiveness). What do you recommend for use in your industry?