# TIM 105: MOT I: Homework 5:

# Quality Function Deployment (QFD) / House of Quality (HOQ), FAST

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**Reading:**

U&E, PD&D, 4th Edition, Chapters 4 (Identifying Customer Needs); Chapter 5 (Product Specifications); Chapter 6 (Concept Generation), Chapter 16 (Managing Projects)

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**Homework Problems (Due Thursday, 29 October, 2015):**

1. **Specialized Bicycle Company (SBC):** Read the case study in the U&E, PD&D text in order to understand how QFD/HOQ is applied in a technology company. Provide at least three main reasons, with supporting evidence, why SBC developed the HOQ. Describe one way in which SBC would use the HOQ.
2. **Quality Function Deployment**: Develop a “house of quality” for two of the following products: The “perfect” (humane) mousetrap, CD player, laptop personal-computer, cell-phone, Microsoft Word.
3. **House of Quality for Your Technology Company’s Proposed New Product:** Proceed as follows:
* Schedule a time to meet for the purpose of creating the HOQ
* (before the group meeting) Use the structured problem-solving process to create an explicit plan for developing the HOQ for your company’s line of products. This process will include reverse engineering, and assigning specific tasks to the group members
* (before the meeting) Gather relevant information needed for creating the HOQ
* Conduct a group meeting (1-2 hours) to develop (in a time-efficient manner) the actual HOQ for the product
* Turn in a concise, well-written “problem solution” documenting all the work done. This solution should include your problem-solving process and clearly show its implementation.
* Note: to get credit every member of the group must participate in the group meeting, and must turn in a solution.

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**Project: Phase II (due on Tuesday, 10 November, 2015):**

You are now well along your technology/product development process. Specifically, in this Phase you should be actively performing the following activities (note that some of these steps have to performed concurrently):

* Complete and refine any unfinished work from Phase 1.
* **Project Planning**: Develop a comprehensive project plan (Activities Matrix, GANTT, PERT, CPM) for Phase II (the current phase) and Phase III (the next phase) of your project. The project plan should include the Phase II tasks (listed below) and the following major tasks from Phase III: completion of product conceptual design, product platform/line strategy, economic/financial analysis, failure modes and effects analysis. (In addition, you may choose to include some supporting “activities” such as a prototyping strategy, concurrent engineering, design for manufacturability and producibility.) Plans should clearly and explicitly indicate the roles and responsibilities of each group member for Phase II and Phase III of your project.
* **House of Quality**: Be sure that you have created a detailed HOQ for your product (See HW Problem 3 above).
* **Aggregate Project Plan**: Create and apply the appropriate decision analysis framework for risk management.
* **Reverse Engineering:** Identify existing products that are similar to your product idea and reverse engineer them using FAST.
* **Conceptual Design:** Apply the conceptual design process to create several alternative concepts for your product idea.
* Submit **all** work done till now in the form of **well-written** and **properly structured** reports contained in a project **binder**.