QDD Journey Course 3 Syllabus

Instructor

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IEEE Senior Member

Office Location

Virtual video conferencing.

QDD Journey Discussion Group for forum discussions and real-time feedback during posted hours.

Office Hours

Posted hours are "office hours" when the instructor is available or live online and/or live chat on the QDD Journey forum.

Hours are published on the QDD Journey Calendar which can be accessed through the learning portal.

Course Overview

Course 3: Design for the Users

Learner prerequisites

This course is created for learners involved in product design development. An engineering degree or background is useful but is not a prerequisite to this course.

Topics

We'll be covering topics in these areas: concept development and design inputs, including requirements.

There are 3 main areas of design engineering where we'll be applying these topics:

- adjust design activities to add benefits and information about the use process early in the product development process
- explore potential features against a customer satisfaction level and with other design inputs for decisions about the product
- use frameworks for (you and your) teams to explore, prioritize, and iterate on the product design.

Learning objectives

The specific learning objectives of this course are:

- Develop group discussions to explore potential benefits in product concepts as a means of design input.
- Define design priorities and actions against customer satisfaction and quality characteristics; identify what features and inputs are critical to motivation, satisfaction, and quality.
- Write technical design inputs that are aligned with features, their benefits, their use, and customer satisfaction.
- Develop group discussions to evaluate users, their potential use processes, and tasks at concept development as a means of design input.
- Choose features and design inputs to address use errors.

Course Materials and Resources

Learners must have internet access to the website qualityduringdesign.com. Lessons include content that opens in a webpage for download.

Learners may find speakers or headphones useful to enjoy the videos, but they are not necessary: transcripts are available, and the videos have closed captioning. Learners may also want to print templates or worksheets for practice problems.

Course Schedule

All lessons are released to students at once. A recommended pace and order is listed below. Learners can expect the lesson presentation, materials, and practice problems to take approximately 1 to 2 hours per lesson. At the completion of the course and all the lesson objectives, learners may download a certificate of completion for the course.

Module	Subject	Practice Problems
Module 1	Lesson 1: Explore benefits as drivers to design	Break out benefits into features and impact and explore their drivers as design inputs. Prioritize features by customer satisfaction and the level of design implementation needed to meet that customer satisfaction.
	Lesson 2: Use drivers to explore characteristics	Construct a tree diagram to explore drivers, from features to design characteristics/inputs. Refine design inputs by comparing them against desired features and each other using a matrix.
Module 2	Lesson 3: Analyze the use process for design decisions	Draw a process flowchart of the high-level functions of a product's use for team alignment and to explore hidden needs. Evaluate the use process to discover what is critical to quality, value-added, or to understand multiple customers.
	Lesson 4: Relate tasks to design choices	Create design inputs from a task analysis of use errors using a PCA (perception-cognition-action) model.

Quality and Reliability Engineering Tools Introduced and Used in the Course

Quality and Reliability Engineering tools introduced: Critical-to-Quality Tree Diagram, 2-way matrix diagrams, process flowcharts, Critical-to-Quality Analysis, Value-Added Analysis, Kano Model, PCA model.

Graphical tools and organizers you'll be able to reproduce: benefit break-down analysis, combined matrix diagram of features and design inputs, tree diagram, process flowchart, task analysis