

# meng 293 – Project Management & Social Responsibility

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Requirements and Specifications (they are quite different)

**Requirements** are written at the earliest stages of the generation of a design. Their purpose is to articulate the important desires for the product and act somewhat like a priority list. What goes on the list of requirements is defined by you, your team and the client. Often the list gets debated and modified as a few early design ideas are discussed but at some point, the requirements become fixed and don't change.

Typically the Requirements are categorized into three levels:

- Primary (must haves)
- Secondary (wants)
- Optional

The "optional" category sometimes appears in two places. Sometimes as a real heading or category but almost always as a tag when putting detail around primary and secondary requirements

Here is an example:

## **Requirements - Coffee Mug Design**

### *Primary*

- Holds liquid
  - Hot Liquid
  - Cold liquids (optional)
- Holdable by a typical human hand
  - No handle
  - Handle (optional)
- Enables the user to pour the mug's liquid contents
  - Into his/her own human mouth
  - Into someone else's mouth, such as a baby (optional)
- Sustainable
  - Recyclable
  - Biodegradable
  - Edible construction materials (optional)

### *Secondary*

- Lid
  - Keep heat in
  - Liquid tight (optional)
- Insulation
- Sit on flat surface
  - In sand (optional)
- Washable
  - Hand

- Dishwasher (optional)
- Attractive

*Optional*

- Advertising surface capable

Specifications evolve and develop as the design goes along. They are a performance description of the product that may change as the possibilities are explored during the design process. At some point though the specifications are tied down and fixed. Once this is done one is committed to producing a finished product that meets or exceeds both the Requirements and the Specifications. At this later stage in design there is only one category in the list of Requirements and Specifications - Primary (must haves).

Here is an example of some specifications:

Specifications - Coffee Mug Design

- Volume of liquid held:
- Maximum liquid temperature:
- Minimum liquid temperature:
- Diameter at point of human hand contact (no handle):
- Pour into users mouth only:
- Maximum circumference of upper lip:
- Maximum circumference of lower lip:
- Pour (mug to mouth) flowrate:
- Air hole distance from pour hole:
- ...
- Etc., etc.