DME 811: Product Design and Development (3-0)

**Objective:**
Students shall learn the different stages of product design including tools and techniques required for product development.

**Course Outline:**

<table>
<thead>
<tr>
<th>Topics</th>
<th>Lectures</th>
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<tr>
<td>Phases of Design Process, production planning and feasibility, design specification, conceptual design, embodiment design, and detailed design. Product Development Process and organization, identifying market needs, establish product specifications, concept generation, innovation tools and methods, concept selection, product architecture. Design for manufacturability, reliability, and repairability, pricing and legal implications. Life cycle analysis, application of sustainable development principles, Taguchi robust engineering methods. Computer Graphics and the Part Model: Interactive Graphics, Graphics in CAD. Students will be encouraged and equipped to develop these skills through solving a practical design problem, keeping the end user in mind at all times.</td>
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**Text Book:**
- “Product Design and Development” by Karl Ulrich and Steven Eppinger