The University of Texas at Tyler  
Master of Science in Mechanical Engineering  

MENG 5332 – New Product Development  

Syllabus  

Catalog Description:  
A study of the new product development process and the role of multidisciplinary teams in the product development cycle. The integration of business concepts with engineering methods such as quality function deployment, product design specifications, concept generation and selection, and product design and evaluation to a complete product development cycle.  

Prerequisites:    Graduate Standing  

Credits:    3  ( 3 hours lecture, 0 hours laboratory per week )  


Additional Material:    None  

Course Coordinator:    Thomas Crippen  

Topics Covered:  
The new product development process. Making the process more flexible. Affordance-based design.  

Evaluation Methods:  
1. Examinations / Quizzes  
2. Homework  
3. Reports  
4. Computer Programming  
5. Project  
6. Presentations  
7. Course Participation  
8. Peer Review  

Course Objectives1:    By the end of this course students will be able to:  
1. Explain and discuss the Stage-Gate type product development process [1-3]  
2. Explain and discuss why more flexibility may be needed in the process and how it might be achieved [1-3]  
3. Explain and discuss affordance-based design [1-3]  

1Numbers in brackets refer to method(s) used to evaluate the course objective.
Relationship to Program Outcomes: This course supports the following Mechanical Engineering Program Outcomes, which state that our students will be able to:

1. apply science, mathematics, and modern engineering tools and techniques to identify, formulate and solve engineering problems [1-5]
2. be able to design thermal/fluid, mechanical, and electro-mechanical components or systems, individually or on interdisciplinary teams, and effectively communicate those designs in both technical and non-technical forums
3. be able to collect, analyze, and interpret data from prescribed and self-designed experimental procedures and formally communicate the results [1-5]
4. be able to apply a broad-based educational experience to understand the interaction of engineering solutions with contemporary business, economic, and social issues
5. recognize that ethical behavior and continuous acquisition of knowledge are fundamental attributes of successful mechanical engineering professionals
6. pass the Fundamentals of Engineering examination

\(^2\text{Numbers in brackets refer to course objective(s) that address the Program Outcome.}\)

Contribution to Meeting Professional Component: (in semester hours)

<table>
<thead>
<tr>
<th>Category</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Mathematics and Basic Sciences:</td>
<td></td>
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<tr>
<td>Engineering Sciences and Design:</td>
<td>3</td>
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<td>General Education Component:</td>
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Prepared By: Thomas Crippen  
Date: August 22, 2009