ENG ME 517 Product Development

2008-2009 Catalog Data:

ENG ME 517 Product Development Prereq: senior or graduate standing; grad prereq: senior or graduate standing in an engineering discipline. Dynamics of converting ideas into marketable products. Choosing products and defining their specifications to achieve competitive advantage. The product development process is decomposed and its elements are examined critically in the context of actual case studies; risk evaluation, concurrent engineering, and impact of new product decisions on the factory. A step-by-step methodology for new product development is derived. (Formerly ENG MN 513.) 4 cr.

Class/Lab Schedule: 4 lecture hours per week

Status in the Curriculum: Elective

Textbook(s) and/or Other Required Material: Steve McConnell, "Rapid Development: Taming Wild Software Schedules", Microsoft Press, 1996 Reading packet consisting, primarily, of Harvard Business School cases, supplemented by articles from the contemporary press.

Coordinator: William Hauser, Adjunct Assistant Professor, Mechanical Engineering

Prerequisites by topic: None

Goals:

Provide students with a contemporary perspective on leadership practices for product definition and the organization and execution of new product introduction. Examples are drawn from a variety of markets and industries. Use the case analysis method to provide practice in presenting convincing arguments for a course of action when interactions between technology and markets must be considered.

Course Learning Outcomes:

As an outcome of completing this course, students will:

- i. Gain an understanding the processes required to turn technical concepts into manufacturable and marketable products.
- ii. Gain an increased understanding of the importance of market and financial perspectives in the development of new products.
- iii. Gain experience and confidence in written and oral defense of technical and business proposals.
- iv. Gain facility in producing concise, fact-filled, and clear reports.

Course Learning Outcomes mapped to Program Outcomes:

Program:	а	b	с	d	e	f	g	h	i	j	k	1	m	n
Course:	i	iv	ii	i, ii	i	i, ii	iii, iv	i, ii	i	i, ii	ii, iii, iv			
Emphasis:	3	5	4	4	3	1	5	4	4	4	2	1	1	1

Topics (time spent in weeks):

- 1. The nature of the development task (1)
- 2. Customer needs and product requirements (2)
 - a. The voice of the customer
 - b. What customers can't tell you
 - c. Translating customer needs into product requirements
- 3. Managing the design project (2)
 - a. Estimating and scheduling
 - b. Project management
 - c. Learning from failure
- 4. Organizing for success (2)
 - a. Design for organizational learning
 - b. Collaboration and outsourcing
- 5. Product and process technology (2)
 - a. Experience and the learning curve
 - b. Technology reach and risk
 - c. Platforms and standards
- 6. Links to the business strategy (2)
 - a. The business plan
 - b. Project economics
- 7. Integration of concepts (2)

Contribution of Course to Meeting the Professional Component:

Engineering topics	60%
General Education	40%

Status of Continuous Improvement Review of this Course:Prepared by: William HauserDate: April 3, 2009