ENG ME 525 Technology Ventures

2008-2009 Catalog Data:

ENG ME 525/MS 526 Simulation of Physical Processes Prereq: Senior or graduate standing in an engineering or science discipline, or consent of instructor. An introduction to the formation and management of technology-based enterprises for engineers and scientists. Modules include opportunity recognition and evaluation, gathering financial and human resources, and managing and harvesting ventures. Goals include an understanding of basic start-up finance and accounting, writing business plans, presenting venture ideas to industry experts, and venture leadership skills. Students become familiar with fundamental technical and engineering issues in a wide variety of high-tech industries, especially information technology, life sciences, biotechnology and telecommunications. Case studies, lectures, workshops, and projects are utilized. 4 cr.

Class/Lab Schedule: 4 lecture hours per week

Status in the Curriculum: Elective

Textbooks and other required material: "Technology Ventures: From Idea to Enterprise, by R.C. Dorf and T. H. Byers, McGraw-Hill (2008). About ten case studies chosen, typically, from Harvard School Business Publishing, that covers a wide range of examples of technology ventures in fields ranging from software, computers, biotech, communications, medicine, typical consumer products, etc.

Coordinator: Daniel Cole, Associate Professor, Mechanical Engineering

Prerequisites by topic:

Students should be sufficiently mature in technology to be aware of the vast range of topics that this course may touch on, and should be able to dig into the basic engineering and scientific basis of each technology venture studied, to know and appreciate the hurdles that are needed to be achieve an eventual robust business.

Goals:

The major goal is to learn how to take advanced technologies and create a business from them. In particular, the situation will be exhaustively examined where small startup group of engineers, scientists, and business folk, often one to five people at the start, come up with the finances to create a prototype and advance their intentions toward a full scale business.

Course Learning Outcomes:

As an outcome of completing this course, students will:

- i. Become familiar with a wide range of technology ventures that began with some critical idea and eventual become a successful business, by pushing on their core technology advantage.
- ii. Learn the important aspects and the subtleties of ten or more case studies of tech ventures, many of them classic examples.
- iii. Learn the essential differences (infrastructure, maturity, cost, competition, government control) with creating tech ventures in various fields (i.e., such as the large differences between biotech and software).
- iv. Tackle a major project for the course, consisting of interacting with an inventor with a patent, and creating a business plan. This will be done via teams.
- v. Present the above business plan will be presented to the class. This will be done via teams.

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

Course Learning Outcomes mapped to Program Outcomes:

Topics:

- 1. Technology Ventures
- 2. Case Studies
- 3. Infrastructure, Maturity, Cost, Competition, Government Control
- 4. Team Presentations of Business Plans

Contribution of Course to Meeting the Professional Component: Engineering topics: 100%

Status of Continuous Improvement Review of this Course:

Prepared by: Daniel Cole Date: 5/23/2009