Boston University, College of Engineering

Course title: Technology Ventures
Course #: me525
Professor: Dan Cole
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Office: Mechanical Engineering Department, 15 Saint Mary’s Street, Rm. 133
Directions to office: Go in at 15 Saint Mary’s, bear right, go down the long narrow corridor, with the glass walls on the left, through the double doors, and my office is on the left, Rm. 133. My office is very close to the ECL computer lab.

Office hours: 9:30am-11:00am on Monday, and 1:00 to 2:00pm on Fridays, except for holidays. See above for directions to my office. If you cannot make those hours, please feel free to contact me by email to arrange another time, or, just stop by and see if I am free. Again, my email is dccole@bu.edu.

Related info: The classes during the Spring semester in 2017, will be on Tu & Th, 3:30-5:15 pm, Rm 210, Photonics, 9 Saint Mary’s Street. [Go in at 9 Saint Mary’s Street; our classroom (#210) is the first one on the left.] Although our classes are nearly always Tu & Th, with classes starting Tu 1/19/2017, there are a few exceptions during the semester. To keep track of exceptions, please go to the link at:


I will also remind you (and you can help remind me!) of these exceptions, as we proceed through the semester.

Course Description: 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.

In addition to the above, we will be selecting promising new and potentially patentable products and making prototypes of the key elements of these products. I will work with you on deciding on how to fabricate and test these structures.

Methodology: The course combines a mix of case studies, lectures, workshops, and projects, with one main project being the focus throughout the semester. The project will involve one final goal, but with a set of tests, research, prototyping, refining, etc., done along the way. Plans will be made for experimental, funding, and marketing efforts. All of this will be done to emphasis the key (difficult) aspects of bringing a novel idea to market.

First few weeks: A fair bit will be set up in the first three weeks of class. On the first class, students will be asked to form groups, where each group will be dedicated to a final project that
is the cornerstone of the course. If students want to work with friends, they will have the opportunity to do so, but this needs to be settled by the end of the second class. Otherwise, the instructor will arrange students in remaining groups by the end of class #2.

During classes 1->4, we will be going over examples of possible projects. Students can select one of these, or come up with one on their own. Some students, particularly those that already took me502, “Invention: Technology Creation, Protection, and Commercialization,” may well be starting this class with a project already in mind. But nevertheless, all groups will have the opportunity, with guidance, to choose a project, or come up with something new; the idea just needs to be settled by the end of class #4.

Finally, in class #6, each group needs to come up with a more detailed description and a list of those things that should be tested, prototyped, etc. Guidance will be provided on coming up with the latter.

**Project cost:** Normally the cost of the prototypes can be kept reasonably small, but we will be talking about this. There will likely be three people on each group project. I am not requiring a textbook, so that could be a savings of as much as $200, since textbooks are often so incredibly expensive these days. Instead, I will be supplying you with class information. So, you could view this as that you have up to 3x$200=$600 to put toward a project. I would hope that you do not need that much, but, it’s a consideration for you to make when choosing your project. Last year, the project materials for each group were considerably less than this, and there were indeed some very good projects last year.

To keep costs down, I am considering not using Harvard School Business Publishing for case studies. Each case study is about $4, so if we did three to four of them, that would be $12 to $20. There are other sources, however, so we may be able to have good case studies without this extra cost.

**Guest Speakers:** We will have several guest speakers during the semester on topics such as marketing, venture capital, laws associated with small businesses, and finance.

**Reading List:** I will be sending this out soon and updating this syllabus. Case studies might come from the Harvard School Business Publishing, or a variety of other sources.

**Class Preparation:** Assignments, readings, agendas and class notes will be posted on the web at the me525 blackboard learn site. Class lecture notes will not be posted until the end of class. I will explain why when we start the course (roughly, they hinder forming your own thoughts during discussion).

**Grading:** Please see below.
There will be two tests (midterm and final) of about 1 & 3/4 hours duration. The exams will be closed book and closed notes. Each test will constitute 17.5 % of your course grade. Tests will cover material we go over in class.

Regarding the project, this work will involve making and testing some key aspects of a product/invention, taking notes on this process, making plans, testing, interpreting data, performing more tests, etc. A notebook will be maintained on this work and will be passed in. Two presentations will be made during the semester on your progress. The sum of all this work counts for 40% of the course grade.

Next, a business plan presentation will be given, for 15% of the course grade. This business plan will be on the product/invention you are also prototyping.

Finally, class participation will count for 10% of the final grade, which will include class participation and in-class exercises.

Also, I will also ask groups to each make a 10-15 min presentations (not to be graded) during the semester, about one per day, or somewhat less, on topics they can choose such as:

* Stories on technology ventures that are exciting and share something we can learn from
* Sources of capital
* Business pitch
* Outline of a business model
* Acquisitions
* Marketing
* Small business structure and legal rules