

**ENGR 4302/5302, EE 4328: Engineering Entrepreneurship**  
Fall semester 2013

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**Office Hours:** TuTh 1:30-3:00pm

**Section Information:** ENGR 4302-001, ENGR 5302-001, ENGR 5302-002, EE 4328-001

**Time and Place of Class Meetings:** TuTh 5:30-6:50pm—105 NH

**Description of Course Content:**

Topics include special problems of newly formed firms, planning, start-up business considerations, business strategy, management basics, and business plan design. Students will engage in business and entrepreneurship training or discussion, become aware of basic business operations, and learn about inventions, intellectual property, and the patenting process. Other topics include assessment of possible markets, venture feasibility, teambuilding, and leadership. Opportunities in university environments will be discussed including incubation centers and patent licensing. We address legal issues, SBIR proposal design, SBIR funding from NSF, NIH, and others, the review process, reporting, local high-tech business accelerators, venture plans, and venture capital. Special lectures will be given by invited experts on select topics.

**Key topics:**

1. Initial considerations
  - a. Planning
  - b. Seed financing
  - c. Start-up business considerations
  - d. Common business models
  - e. Business plan design
  - f. Management basics
  - g. Exit strategy
2. Inventions
  - a. Intellectual property strategy
  - b. Patent licensing
  - c. Patent process
  - d. Construction of claims
3. Market assessment
  - a. Feasibility of product/services
  - b. Customers
  - c. Distribution channels
  - d. Competition
4. Business planning
  - a. Structure of business plan
  - b. Chief ingredients
  - c. Time evolution
5. Business and entrepreneurship training
  - a. Networking
  - b. Need for experienced mentors
6. Business operations
  - a. Hiring the right team is critical
  - b. Strategic partnerships (manufacturing, distribution and sales)
  - c. Marketing and sales strategy
  - d. Building customer relationships

7. University opportunities
  - a. Incubation centers
  - b. Patent licensing
  - c. Collaboration/support/initial facilities and space
8. Legal issues
9. Funding
  - a. Founders, friends and family
  - b. SBIR proposals
    - i. SBIR funding
    - ii. Review process
    - iii. Reporting
  - c. Angel investors and investor groups
  - d. Venture plans
  - e. Venture capital

### **Student Learning Outcomes:**

Understanding of entrepreneurship and its personal/societal value  
 Knowledge of business startup methods and corporate structure  
 Knowledge of inventions, patenting, and licensing  
 Ability to write proposals and presentations  
 Ability to formulate elementary business/marketing plans

### **Requirements:**

Prerequisites: Junior standing  
 Regular class attendance and participation.

### **Required Textbooks and Other Course Materials:**

We will use Piazza, an online platform, for all course-related materials and Q&A discussions. Our class page can be found at <https://piazza.com/uta/fall2013/engr4302engr5302ee4328/home>, and an activation e-mail for this course has been sent to your UT-Arlington e-mail address.

Eric Koester, "What Every Engineer Should Know About Starting a High-Tech Business Venture," CRC Press: Boca Raton, FL, 2009. (Free download at <http://dx.doi.org/10.1201/9781420076981>; access provided by University of Texas at Arlington.)

Tim Berry, "Planning for Success: Hurdle – The Book on Business Planning," Sixth Edition, Palo Alto Software: Eugene, OR, 2006. (Free download posted on [www.piazza.com](http://www.piazza.com) course website)

Additional reading material or websites will be suggested and assigned.

### **Descriptions of major assignments and examinations with due dates:**

Grading:	Individual projects/short reports/case studies	30%
	Mid-term examination	20%
	Feasibility report/business plan for a new venture	20%
	Final presentation (team)	10%
	Final examination	10%
	Class attendance	10%

Mid-term exam date: October 22, 2013

Final exam: Tuesday, December 10, 2013, 5:30–8 p.m. May be used for part of final presentations.

Project due dates: TBD

### **Grading Policy:**

Final grade is determined in accordance with scores on assignments as summarized above. The standard academic scale of A, B, C, D, F will be used.

**Attendance Policy:**

I expect students to attend class. Two unexcused absences are allowed.

**Drop Policy:** Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. Students will not be automatically dropped for non-attendance. Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (<http://www.uta.edu/ses/fao>).

**Americans with Disabilities Act:** The University of Texas at Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including the Americans with Disabilities Act (ADA). All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at [www.uta.edu/disability](http://www.uta.edu/disability) or by calling the Office for Students with Disabilities at (817) 272-3364.

**Academic Integrity:** At UT Arlington, academic dishonesty is completely unacceptable and will not be tolerated in any form, including (but not limited to) "cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts" (UT System Regents' Rule 50101, §2.2). Suspected violations of academic integrity standards will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University.

All students enrolled in this course are expected to adhere to the UT Arlington Honor Code:

*I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.*

*I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.*

**Student Support Services:** UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to [resources@uta.edu](mailto:resources@uta.edu), or view the information at [www.uta.edu/resources](http://www.uta.edu/resources).

**Electronic Communication:** UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at <http://www.uta.edu/oit/cs/email/mavmail.php>.

**Student Feedback Survey:** At the end of each term, students enrolled in classes categorized as lecture, seminar, or laboratory shall be directed to complete a Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student's feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit <http://www.uta.edu/sfs>.

**Final Review Week:** A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.