

# ENGR 4102+5102 Engineering Entrepreneurship

**Fall semester 2010**

**Time:** W 4:00–4:50 pm

**Place:** GS 104

**Instructor:** Robert Magnusson, Professor of Electrical Engineering

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**Office location:** 544 NH

**Office hours:** T/Th 4:00-5:00 pm; W 5:00-6:00pm or by appointment

**Office phone:** 817-272-2552

**Course content and student learning outcomes:** 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, licensing, the patenting process and international patenting, as well as high-tech marketing. Opportunities in university environments will be discussed including incubation centers and patent licensing. Other topics include 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.

**Grading policy:** Pass/Fail

## **Main 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. Business and entrepreneurship training
  - a. Networking and need for experienced mentors
3. 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
4. Inventions:
  - a. Intellectual property strategy
  - b. Patent licensing
  - c. Patent process
  - d. International patent process
5. University opportunities

- a. Incubation centers
  - b. Licensing/collaboration
- 6. Legal issues
- 7. 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

**Required textbooks and other course materials:** None required. Lecture notes and reading materials will be supplied.

**Reference books:**

Bruce R. Barringer and R. Duane Ireland, "Entrepreneurship: Successfully Launching New Ventures," 3<sup>rd</sup>. Ed., Prentice Hall, 2010.

Kenji Uchino, "Entrepreneurship for Engineers," CRC Press, 2010.

**Prerequisites:** None.

**Descriptions of major assignments and examinations with due dates:** Case studies, discussion groups, paper summaries, and presentations.

**Drop Policy:** Students may drop or swap (adding and dropping a class concurrently) classes. 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. Contact the Financial Aid Office for more information.

**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.

**If you require an accommodation based on disability, I would like to meet with you in the privacy of my office, during the first week of the semester, to make sure you are properly accommodated.**

**Academic Integrity:** It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension or expulsion from the University. According to the UT System Regents' Rule 50101, §2.2, "Scholastic dishonesty includes but is 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."

***ANY CHEATING WILL RESULT IN SEVERE PENALTIES.***

**Student Support Services Available:** The University of Texas at Arlington has established a variety of programs to help students meet the challenges of college life. Support to students includes advising, counseling, mentoring, tutoring, supplemental instruction, and writing assistance. For a complete list of academic support services, visit the Academic Assistance resource page of the Office of Student Success Programs, [www.uta.edu/uac/studentsuccess/academic-assistance](http://www.uta.edu/uac/studentsuccess/academic-assistance). To help students address personal, academic and career concerns, individual counseling is also available. For more information, students are encouraged to contact Counseling Services [www.counseling.uta.edu](http://www.counseling.uta.edu) at (817) 272-3671 or visit a counselor in 216 Davis Hall.

**Electronic Communication Policy:** The University of Texas at Arlington has adopted the University "MavMail" address as the sole official means of communication with students. MavMail is used to remind students of important deadlines, advertise events and activities, and permit the University to conduct official transactions exclusively by electronic means. All students are assigned a MavMail account. Students are responsible for checking their MavMail regularly. Information about activating and using MavMail is available at <http://www.uta.edu/oit/email/>.