

LECTURES IN ENGINEERING ENTREPRENEURSHIP
TE 460 (on-site and online)/TE 360
SYLLABUS – Spring 2020
Instructors: Chris Harbourt and Ryan Shelton
Teaching Assistant: TBD

Class meeting time and location

Thursdays, 5:00 – 6:20 p.m., Room 1310 DCL
Exceptions, if any, as noted in email reminders

Contact

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Office hours

Chris Harbourt: By appointment: Please request by email.
Ryan Shelton: By appointment: Please request by email.

Materials

- (1) I-CLICKER required for the class and quizzes
- (2) *The Lean Startup*, by Eric Ries, Crown Business (2011). <http://theleanstartup.com/book> The book is available through Amazon or other online booksellers. The campus bookstores may have copies.
- (3) The course website for videotaped lectures, announcements, and the grade book are available through Illinois Compass, at: <https://compass2g.illinois.edu>. **Logging in will require your NetID and password.**
- (4) Lectures Recorded and available at: <https://echo360.org/section/627cfb0a-21c8-4997-bdda-0a75e9fd3f43/home>

Weekly Topics and the Course Objectives:

Each week, students will hear directly from entrepreneurs and professionals who are actively working to promote entrepreneurship. The timing of specific lecture topics is dictated by the availability of the speakers who are busy, successful, serial entrepreneurs, educators, venture capitalists, public servants, etc.

- In-class activities will be used to reinforce key aspects of the topic.
- Readings will introduce the process, in a practical manner, for starting a new business.
- Students will be invited (and encouraged!) throughout the semester to participate in campus and community events for entrepreneurs.

The objectives for the course instruction and activities are:

- Present and discuss the critical importance of entrepreneurship to the world's economy (employment, technology advancement, societal development, etc...)
- Present the building blocks and practical steps for starting a new enterprise
- Be a portal for students to access TEC, campus, and local entrepreneurial resources
- Enable students to hear from, and interact with, entrepreneurs from various sectors of the economy: software, agriculture, energy, light, water, bio- and medical sciences, social networks and enterprises, intrapreneurship, and finance. The course focuses on business sectors that derive from disciplines and areas of study within the College of Engineering and the Campus.

Course Requirements:

Your participation in the course consists of attending **ALL** on-site lectures, reading assigned materials, attending 2 external events, and completing in-class quizzes on readings and lectures.

TE 460 students and online students must submit an additional research paper on COMPASS by the end of the class day (March 29th 2020).

Attendance Policy

Attendance is ABSOLUTELY required at on-site lectures. Attendance will be taken at each class meeting using an i-clicker, which is required for class. **Attendance is the single most important indicator of courtesy and respect for guest speakers** who have taken time out of very busy schedules to address the class (and in many cases, travel to do it). At various times during the semester, attendance will be taken at the end of class in addition to the beginning of class. If you are not counted both at the beginning and at the end then you will be counted as absent. In addition, please be mindful in your representation of the school when in attendance; professionalism and attentiveness is expected during lecture and Q & A. Due to the size of the class, **you are responsible for recording your attendance at each class meeting.** Each student is granted TWO (2) free absences – The student may attain the right to disclose the reason or not. In other words, no explanation is required for the two free absences. At the end of the semester, two absences will be dropped from your final grade for attendance. We strongly suggest that you CONSERVE them and use them wisely (for example, for illness, interviews, doctor's appointments, or emergencies.) On the third and fourth absence, your final grade in the course will be reduced a full letter grade for each additional miss. **On the fifth absence, you will receive an automatic "F" in the course.** Due to the size of the class, you are responsible for seeing to it that you **carry your i-clicker** on the day of each class meeting. **We will not "credit" you after the fact for a class you attended, but for which you did not use your clicker** unless you talk to the class TA after class in the lecture room.

- Signing in for another student is not acceptable. Should this happen, both students involved will receive an automatic "F" in the course.
- Signing in at the beginning of class and then not staying for substantially the entire lecture will be counted as an absence.
- Students arriving substantially late for class, will be counted as absent.

- Students taking the course online are exempt from the in-class attendance requirement however, they are expected to view all lectures posted to the online course. All other requirements *are* applicable to online students.

Online Lectures

All on-site lectures will be recorded and available to online students on the course site. Once they are posted, they will continue to be accessible for the duration of the semester. Online students may view them as often as desired.

Readings and In-Class i-Clicker participation as assigned

You are required to read the assigned materials. **There will be i-clicker participation during every class covering elements of the lectures, make sure you stay till the end of class to answer all the questions.**

Attending local events in the Tech Community

As part of the course you are required to attend 2 events in the local tech/entrepreneurial community. Writeups due on Compass within 48 hours after the event. Late submissions carry a 10% penalty and you may decide to simply attend another event to not lose the points.

Attendance in these events is a way to encourage participation and get first-hand experience in the local entrepreneurial ecosystem. After attending the event you must write a brief write-up about the event. Showing up to the event for 5 minutes then leaving is not acceptable. Submitting a write-up for an event that you did not attend is not acceptable and will be considered cheating.

TE 460 and Online Student Paper Requirements (Not required for TE 360 students) Due by March 29th

All students in the TE 460 sections on-site and all online students taking the course for credit must write a two-page commercialization paper on a technology of their choice. This paper should be a two-page assessment of the *commercial potential* for a technology, or research idea, that you are either working on as part of your masters or Ph.D. studies, something related to your graduate work, something one of your professors is working on, or (if you are in the workforce), an idea from your company, R&D division, etc.

The paper should address the following question:

- What is/are the market(s) for this technology/research/idea?
- What problems would it solve?
- Who would the likely customers be?
- What would be the impediments to getting it to market? (Technical feasibility? Costs? Sales channels? Competition?)
- What would the best business model be (Starting a company? Licensing to an existing company?)
- Who/what is the competition?

- Why is this technology/research/idea an improvement?
- What intellectual property could best protect it (if any)?

You need not devote much space to discussing the technical aspects of the technology - except to the extent that it impacts the above questions. Try to incorporate as much of what you have read, heard and otherwise learned from the readings and lectures this semester. If you do NOT happen to be working on a technology idea as part of your studies or work responsibilities, then simply select a technology idea in your field generally that you are familiar with.

The paper will be due by March 29, 2020. Late papers will not be accepted. Written responses should be no more than 2 pages, double-spaced, 11 pt. Times New Roman font with 1.0" margins. In addition to the 2-page paper, references and in-text citations are required. The responses will be graded according to the following marking guidelines.

460 Research Paper Marking Guidelines

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| • Analysis of Subject Matter | 80% |
| • Response Organization | 10% |
| • Clarity and Quality of Writing | 5% |
| • Formatting and References | 5% |

Announcements

Announcements will be made periodically during in-class lectures, posted on the course website and e-mailed to the class. *Please make sure you watch the announcements and check the TEC calendar frequently <https://calendars.illinois.edu/list/4922>.*

Extra Credit Events

As described above, throughout the semester students will be invited to attend and participate in several local events, many of which have free food, intended to promote networking and education in entrepreneurship.

In addition to the 2 required outside-the-classroom events, students will get 3% extra credit added to their final course grade for attending the first extra credit event. The extra credit award will increase by another 3% for a second additional event attended (as indicated below) up to a total potential award of 6% extra credit toward the final course grade.

- 1st additional event: 3%
- 2nd additional event: 3%

E-mail

Please e-mail TAs and instructors at their respective e-mail addresses listed on this syllabus and not through the e-mail function in Compass (which we do not typically open with any frequency). When emailing, include the **course code** along with **your last name** in the subject line of your email. Allow at least 24 – 48 hours for a response.

Grading Policies

Your grade in this course will be based upon your attendance, the i-clicker quizzes / participation and a two-page paper. There will be no final exam, per se.

ENG/TE	<u>360 / 460 / Online</u>	
Attend Events	30%/ 30%/ 30%	
i-clicker Quizzes	70%/ 35%/ 35%	(One each class day)
Research Paper	— / 35%/ 35%	

The sum total of all points associated with all of the in-class quizzes, research paper, attendance and extra-credit will be tallied. The grading scale for the class is then applied, as follows:

90% - 100% of the total points will be an A. (Approximately 90% - 93% will be an A-; 98% and higher will be an A+)

80% - 89% of the total points will be a B. (Approximately 80% – 83% will be a B-; 88% - 89% will be a B+)

70% - 79% of the total points will be a C. (Approximately 70% - 73% will be a C-; 78% - 79% will be a C+)

60% - 69% of the total points will be a D. (Approximately 60% - 63% will be a D-; 68% - 69% will be a D+)

Anything below 60% of the total points will receive a failing grade.

NOTE:

Missing 3 or 4 lectures will result in the loss of a full letter grade each.

Missing more than four lectures (if you miss a 5th lecture) will result in a failing (F) grade for the course.

Key Due Dates for Students		
Week 1	Thurs, January 23, 2020	Course Begins
Week 10	Thurs, March 19, 2020	Spring Break
Week 15	Thurs, April 30, 2020	Last Day of Class

APPENDIX
LIST OF RELEVANT TERMS RELATING TO ENTREPRENEURSHIP

A list of terms that you will likely come across over the course of the semester has been provided here. The definitions have *not* been provided; you are responsible for finding and understanding the definitions and applications of these terms. We strongly encourage you to consult online resources and ask questions of the lecturers in order to accomplish this. Many of the essays in the books as well as the lectures will refer to these terms, and some of their definitions may appear in the online quizzes, so it is in your best interest to look them up as you come across them in your readings or in the lectures.

Please be familiar with the definition of each of the following terms as they relate to business and entrepreneurship.

Acquisition	Elevator pitch
Angel investor	Entrepreneur, entrepreneurship
Annual report	Equity
Asset	Exit strategy
BAA (broad agency announcement)	External financing
Balance sheet	Fair market value
Board of directors	Financial statement
Bonds	First-round funding; first-round financing
Bootstrapping	Franchise
Bubble	Going public
Business model canvas	Gross income
Business plan	Gross revenue
CEO (chief executive officer)	IPO (initial public offering)
CTO (chief technology officer)	Income
Capital/capitalization	Incubator
Cash flow	Intellectual property (IP)
Closely-held	Entrepreneur; entrepreneurship
Copyrights	Leverage
Corporation	Leveraged buyout (LBO)
DARPA	Liability; liabilities
DOD, DOE, DNR	Limited liability Company
Debt financing	Limited liability partnership
Directors (see also "board of")	Limited partnership
Dividend	Liquidity; liquidity event
Dot-com	Market research
Due diligence	Market value (see also "fair market value")
EBITDA (earnings before interest, taxes, depreciation and amortization)	Merger
Earnings	Mezzanine funding
E-commerce	Mortgage
Economies of scale	NASDAQ (National Association of Securities Dealers Automated Quotation system)

Negotiable instrument
Net asset value
Net earnings
Net income
NYSE (New York Stock Exchange)
Officers
Operating costs
Options
Outsourcing
Overhead
Owner's equity
Parent Corporation
Partnership
Pass-through taxation
Patents
Post-money valuation
Pre-market value
Profit
Proof of concept
Prospectus
Publicly traded
R&D (research and development)
RFP (request for proposal)
ROI (return on investment)
ROR (rate of return)
Revenue
Risk-return trade-off
Road show
S&P 500
SBIR grant (small business innovation research)
S corporation
STTR grant (small business technology transfer)
Securities
Seed funding
Service provider
Shareholder (see also "stockholder")
Silicon Valley
Startup
Sole proprietorship
Stockholder (see also "shareholder")
Stocks
Sweat equity
Term sheet
Trademarks
Trade secrets
Valuation
Venture capitalist ("VC")
Vertical integration
Yield