

# TE 360/460: Lectures in Engineering Entrepreneurship

**Technology Entrepreneur Center**  
GRAINGER ENGINEERING



## Spring 2023

- 1 credit hour
- Thursday
- 5:30-7:00pm
- 1320 Digital Computer Laboratory

## Instructor

Gerald Wilson

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## Teaching Assistant

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## Zoom Meeting Info

Meeting ID:

895 0092 9899

Password: 721315

<https://illinois.zoom.us/j/89500929899?pwd=QTB0c2MxOVBJQVZYZkNpL1hpcHVjUT09>

## Course Purpose

Each week, students will hear directly from entrepreneurs and professionals who are actively working to promote entrepreneurship. Students can interact with entrepreneurs from various sectors of the economy: software, agriculture, energy, bio- and medical sciences, e-commerce, and intrapreneurship to name a few examples. The course focuses on business sectors that derive from disciplines and areas of study within The Grainger College of Engineering and the Campus. 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.

## Learning Objectives

Upon completion of this course, you will be able to:

1. identify the critical importance of entrepreneurship to the world's economy (employment, technology advancement, societal development, etc.),
2. give examples of the building blocks and practical steps for starting a new enterprise, and
3. understand entrepreneurship as a career path and how experience in entrepreneurship can form a foundation for other career opportunities.

## Course Materials

1. The course website for live and recorded lectures, announcements, and the grade book are available through Canvas, at: <https://canvas.illinois.edu/courses/35317>  
Logging in will require your NetID and password.
2. Lectures recorded and available in the [media space](#) for our course.
3. iClicker Student App  
The app can be downloaded by via the [App Store](#) or [Google Play](#), or by visiting the [iClicker student web app](#) page.

## Course Requirements

Your participation in the course consists of attending all in-person lectures and participating via iClicker (or watching or attending all Zoom lectures in the event lectures are conducted online), gaining familiarity with the list of terms relating to entrepreneurship provided below, reading any assigned materials, watching any assigned online YouTube videos or participating in any recommended entrepreneurial events. TE 460 students will be required to prepare a short pitch deck on a new technology to be submitted via Canvas. Details on the requirements for the pitch deck are provided below.

### Standard Section A Attendance Policy

Each student must attend all in-person lectures at the scheduled time. Attendance for the in-person section will be recorded via iClicker. We encourage students to ask questions and show respect to guest speakers who are taking their time to contribute to the course by actively engaging with them. During each in-person lecture, a series of questions pertaining to assigned material and/or the previous lecture will be asked and your responses to these questions will contribute to your grade for the course. If you need to miss class for any reason, your absence must be excused. Please email the TA to ensure excused absences are properly documented.

### Online Sections (ONL and ONC) Attendance Policy

Each student must watch all recorded class lectures and respond to the corresponding assigned i-clicker questions to receive credit for attendance. Your responses must be recorded by 11:59 PM, CST on the Wednesday following the posting of the recorded lecture.

### TE 460 Pitch Deck – Due April 13, 2023

All students in TE 460 must prepare a pitch deck of **10 pages** or less on a technology or business concept of their choice. This deck should be an assessment of the commercial potential for a technology, business concept 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 deck should address the following questions:

- What is/are the market(s) for this technology/research/idea and how big is/are these market(s)?
- 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 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 concept of a pitch deck and a template will be discussed in class.

The deck will be due by **April 13, 2023**. Late submissions will **not** be accepted. The deck will be graded according to the following rubric:

- |  |     |
|--|-----|
| • Analysis of Subject Matter and Utilization of Principles Discussed | 80% |
| • Response Organization  | 10% |
| • Clarity and Quality of Presentation                                | 10% |

## Announcements

Announcements will be made periodically for the course and posted to the website and e-mailed to the class. ***Please make sure you watch for the announcements.***

## Extra Credit

Students will have an opportunity to earn up to 9% extra credit added to their final course grade for attending/watching and writing reflections for eligible additional events and resources and for exceptional class participation during live lectures at the instructor's discretion. Announcements will be made in class regarding eligible events/resources and instructions for submitting will also be provided on the Canvas site. A break-down of extra credit that may be earned is provided below:

- Additional event participation: up to 9 %
- Assigned resource reflections: up to 9%

## Grading Policies

Your grade in this course will be based upon your participation in the lectures, recordings, participation via iClicker, and pitch deck for students enrolled in TE 460. There will be no final exam, per se.

### TE 360

- 85% Attending lectures and attempting **all** iClicker questions
- 15% Points scored in the iClicker responses

### TE 460

- 50% Attending lectures (watching lectures and responding to **all** iClicker questions for ONC and ONL sections)
- 15% Points scored in iClicker responses
- 35% Pitch Deck

## Grading Scale

- 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.

## 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. A set of terms has been assigned for you to review each week and your understanding of these concepts will be assessed as each week.

### Week 2

Acquisition	Balance sheet	Business model canvas
Angel investor	Board of directors	Business plan
Annual report	Bonds	CEO (chief executive officer)
Asset	Bootstrapping	CTO (chief technology officer)
BAA (broad agency announcement)	Bubble	Capital/capitalization

### Week 3

Debt financing	Due diligence	Entrepreneur, entrepreneurship
Directors (see also "board of")	EBITDA (earnings before interest, taxes, depreciation, and amortization)	Equity
Dividend	Elevator pitch	Exit strategy
Dot-com		External financing

### Week 4

Franchise	IPO (initial public offering)	Entrepreneur; entrepreneurship
Going public	Income	Leverage
Go-To-Market	Incubator	Leveraged buyout (LBO)
Gross income	Intellectual property (IP)	Liability; liabilities
Gross revenue		

### Week 5

Market research	Mortgage	Net asset value
Market value (see also "fair market value")	NASDAQ (National Association of Securities Dealers Automated Quotation system)	Net earnings
Merger	Negotiable instrument	Net income
Mezzanine funding		NYSE (New York Stock Exchange)
Mission		Officers

**Week 6**

Operating costs	Parent Corporation	Post-money valuation
Options	Partnership	R&D (research and development)
Outsourcing	Pass-through taxation	RFP (request for proposal)
Overhead	Patents, Freedom to Operate (FTO)	ROI (return on investment)
Owner's equity		

**Week 7**

Revenue	S corporation	Shareholder (see also "stockholder")
Risk-return trade-off	STTR grant (small business technology transfer)	Silicon Valley
Road show	Securities	Startup
S&P 500	Seed funding	
SBIR grant (small business innovation research)	Service provider	

**Week 8**

Capitalization Table, Cap Table	Copyrights	Fair market value
Cash flow	Corporation	Financial statement
Closely-held	DARPA	First-round funding; first-round financing
	DOD, DOE, DNR	

**Week 9**

Stocks	Valuation, pre-money, post-money, 409A	Yield
Stock options	Valuation	Proof of concept
Sweat equity	Venture capitalist ("VC")	Prospectus
Term sheet	Vertical integration	Publicly traded
Trademarks	Vision	
Trade secrets		

**Week 10**

Cash flow positive

Non-disclosure  
agreement (NDA)Joint Development  
Agreement (JDA)

Earnings

E-commerce

Economies of scale

Pitch, Pitch Deck

Limited liability Company

Limited liability partnership

Limited partnership

Liquidity; liquidity event

**Week 11**

Customer Discovery

Minimum Viable Product  
(MVP)

Product/Market Fit

Gross Margin

Runway

Burnrate

**Week 12**

ROR (rate of return)

Recapitalization

Sole proprietorship

Stockholder (see also  
"shareholder")

Pre-market value

Pre-seed funding

Profit

SAFE (Simple Agreement for  
Future Equity)**Understanding of the terms will be assessed each week.**

## COVID

Following University policy, all students are required to engage in appropriate behavior to protect the health and safety of the community. Students are also required to follow the campus COVID-19 protocols.

Students who feel ill must not come to class. In addition, students who test positive for COVID 19 or have had an exposure that requires testing and/or quarantine must not attend class. The University will provide information to the instructor, in a manner that complies with privacy laws, about students in these latter categories. These students are judged to have excused absences for the class period and should contact the instructor via email about making up the work.

Students who fail to abide by these rules will first be asked to comply; if they refuse, they will be required to leave the classroom immediately. If a student is asked to leave the classroom, the non-compliant student will be judged to have an unexcused absence and reported to the Office for Student Conflict Resolution for disciplinary action. Accumulation of non-compliance complaints against a student may result in dismissal from the University.

## Emergency Response Recommendations

Emergency response recommendations can be found at the following website:

<https://police.illinois.edu/em>. I encourage you to review this website and the campus building floor plans website within the first 10 days of class.

<http://police.illinois.edu/emergency-preparedness/building-emergency-action-plans/>.

## Sexual Misconduct Reporting Obligation

The University of Illinois is committed to combating sexual misconduct. Faculty and staff members are required to report any instances of sexual misconduct to the University's Title IX Office. In turn, an individual with the Title IX Office will provide information about rights and options, including accommodations, support services, the campus disciplinary process, and law enforcement options.

A list of the designated University employees who, as counselors, confidential advisors, and medical professionals, do not have this reporting responsibility and can maintain confidentiality, can be found here: [wecare.illinois.edu/resources/students/#confidential](http://wecare.illinois.edu/resources/students/#confidential). Other information about resources and reporting is available here: [wecare.illinois.edu](http://wecare.illinois.edu).

## Academic Integrity

You are expected uphold the highest ethical standards, to be honest, and to practice academic integrity.

**This includes doing original work and citing sources**, including the work of other students. Please give special care to prepare high-quality submissions with proper grammar and spelling.

The University of Illinois at Urbana-Champaign Student Code should also be considered as a part of this syllabus. Students should pay particular attention to Article 1, Part 4: Academic Integrity. Read the Code at the following URL: <http://studentcode.illinois.edu/>. Academic dishonesty may result in a failing grade.

Every student is expected to review and abide by the Academic Integrity Policy:

<https://studentcode.illinois.edu/article1/part4/1-401/>. Ignorance is not an excuse for any academic dishonesty. It is your responsibility to read this policy to avoid any misunderstanding. Do not hesitate to ask the instructor if you are ever in doubt about what constitutes plagiarism, cheating, or any other breach of academic integrity.

## Religious Observances

Illinois law requires the University to reasonably accommodate its students' religious beliefs, observances, and practices in regard to admissions, class attendance, and the scheduling of examinations and work requirements. You should examine this syllabus at the beginning of the semester for potential conflicts between course deadlines and any of your religious observances. If a conflict exists, you should notify your instructor of the conflict and follow the procedure at <https://odos.illinois.edu/community-of-care/resources/students/religious-observances/> to request appropriate accommodations. This should be done in the first two weeks of classes.

## Disability-Related Accommodations

To obtain disability-related academic adjustments and/or auxiliary aids, students with disabilities must contact the course instructor and the Disability Resources and Educational Services (DRES) as soon as possible. To contact DRES, you may visit 1207 S. Oak St., Champaign, call 333-4603, email [disability@illinois.edu](mailto:disability@illinois.edu) or go to <https://www.disability.illinois.edu>. If you are concerned you have a disability-related condition that is impacting your academic progress, there are academic screening appointments available that can help diagnosis a previously undiagnosed disability. You may access these by visiting the DRES website and selecting "Request an Academic Screening" at the bottom of the page.

## Family Educational Rights and Privacy Act (FERPA)

Any student who has suppressed their directory information pursuant to Family Educational Rights and Privacy Act (FERPA) should self-identify to the instructor to ensure protection of the privacy of their attendance in this course. See <https://registrar.illinois.edu/academic-records/ferpa/> for more information on FERPA.

## Anti-Racism and Inclusivity Statement

The Grainger College of Engineering is committed to the creation of an anti-racist, inclusive community that welcomes diversity along a number of dimensions, including, but not limited to, race, ethnicity and national origins, gender and gender identity, sexuality, disability status, class, age, or religious beliefs. The College recognizes that we are learning together in the midst of the Black Lives Matter movement, that Black, Hispanic, and Indigenous voices and contributions have largely either been excluded from, or not recognized in, science and engineering, and that both overt racism and micro-aggressions threaten the well-being of our students and our university community.

The effectiveness of this course is dependent upon each of us to create a safe and encouraging learning environment that allows for the open exchange of ideas while also ensuring equitable opportunities and respect for all of us. Everyone is expected to help establish and maintain an environment where students, staff, and faculty can contribute without fear of personal ridicule, or intolerant or offensive language. If you witness or experience racism, discrimination, micro-aggressions, or other offensive behavior, you are encouraged to bring this to the attention of the course director if you feel comfortable. You can also report these behaviors to the Bias Assessment and Response Team (BART) (<https://bart.illinois.edu/>). Based on your report, BART members will follow up and reach out to students to make sure they have the support they need to be healthy and safe. If the reported behavior also violates university policy, staff in the Office for Student Conflict Resolution may respond as well and will take appropriate action.