

Engineering Entrepreneurship (EGN4641)
Entrepreneurship for Engineers (EGN6640)
Class Periods: Monday, Periods 3-4, 9:35 am – 11:30 am
Location: Wert 360
Academic Term: Spring 2024

Instructor:

Prof. Erik Sander, The Michael Durham Executive Director
UF Engineering Innovation Institute
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Office hours: By appointment to Lori DeLuco (352-392-7047; ldeluco@ufl.edu)



Course Communication

The instructor will send out all communication through Canvas. All students will be held responsible for any information disseminated through the course website or spoken in class. General course questions, questions about grades, or personal issues must be sent within Canvas. You are welcome to set up an appointment to speak with the instructor as needed. If you have an issue or need help, don't wait to ask about it. Problems are generally easier to solve sooner rather than later.

Teaching Assistant (Grading Only):

Please contact through Canvas: Grace Peters

Course Description

This course introduces engineering students to the concepts and practices of technological entrepreneurial thinking and entrepreneurship. Using lectures, case studies, business plans, and student presentations, the course teaches life skills in entrepreneurial thought and action that students can utilize in starting technology companies or executing R&D projects in large companies.

Course Pre-Requisites / Co-Requisites

EGN4641 – Junior/Senior Standing (Some exceptions may be granted)
EGN6640 - None

Course Objectives

Entrepreneurs have started new ventures for generations. Success was more a function of tenacity and a measure of the idea underpinning the business. Errors in the structure and early conduct of the enterprise could be overcome with time through learning. In the new paradigm, tolerance for such errors is acutely narrow. Competition has become intense, technology-based, market-focused and highly competent. In such a competitive environment the lack or misuse of the application of currently available technology to the structure and conduct of a new business could quickly spell its demise. Similarly, the inability to adapt the enterprise to the emergence of new technologies to make it market-driven and structure-perfect could have the same effect. In summary, competition is just too tough; the end could come quickly.

Organizational size neither offers a safe harbor nor increased risk. New ventures exist either as a new, small business or as an element of a large organization. Large companies have become competitive in this new paradigm by redefining their cultures to one of entrepreneurial thinking in large companies – termed by many as “intrapreneurship.”

Every student that plans a career, therefore, will face the need to negotiate these new realities, whether through a big company, small company, new company or old. The goal of this course is to provide the background necessary to understand the entrepreneurial approach to technology businesses and the tools required to function effectively in that environment.

The Student Learning Objectives and how those objectives will be accomplished include:

- Students will gain and demonstrate an understanding of the entrepreneurial thought process as applied to organizations ranging from startup to large, multinational companies through exercises that test the students' proficiency in the key skills sets associated with starting and building technology-based entrepreneurial ventures.
- Students will learn and demonstrate their understanding of the key attributes of technology entrepreneurs and the organizations they start and lead through team projects that mimic real world entrepreneurship.
- Students will learn to function and thrive in multidisciplinary team environments while creating measurable value in meeting the needs of myriad stakeholders through team-based projects to create and promote a technology entrepreneurial venture.

Materials and Supply Fees: None

Professional Component (ABET): N/A

Relation to Program Outcomes (ABET): N/A

Required Textbooks and Software

Business Model Generation, Osterwalder & Pigneur, ISBN: 978-0470-87641-1, Wiley & Sons, 2010

Value Proposition Design, Osterwalder, Pigneur, Bernarda, & Smith, ISBN: 978-1-118-96805-5, Wiley & Sons, 2014

Students should also expect to have reading and viewing (e.g., video) assignments from current events related to the course topics that will be posted in the Canvas course website.

Course Schedule

The course will be delivered weekly in a “Flipped Classroom” modality. Weekly lectures typically consisting of overviews of the weekly topics by the instructor will be pre-recorded and must be viewed prior to the scheduled class periods. Scheduled class periods will be utilized for activities, student teamwork, and team presentations. Sessions may also include guest speakers that exemplify technology entrepreneurship. Students should be prepared to bring their laptops to the class for participation in class activities.

The course is firmly presented in a “real-world” format, including students taking the roles of company founders and investors, creating a vision and execution plan for their company, and raising funds – exactly as they would in a true entrepreneurial endeavor.

The course consists of three main modules. The expected topics and/or activities to be covered each week in the course modules are summarized below. The actual weekly outline of topics and activities is subject to change from that indicated below at the course instructor’s discretion and will be

reflected in the updated course schedule that students will have access to via the Canvas course website. The finalized course schedule will include weekly topics, reading requirements, assignment due dates, and dates for other course activities. The course is delivered along the following outline of major course modules:

- I. Introduction to Entrepreneurship – Introduction to Technology Entrepreneurship and Technology Ventures, Attributes and Myths of Technology Entrepreneurs, Engineers as Entrepreneurs, Mindset of the Entrepreneurial Leader, Value Proposition Introduction.
- II. Idea Generation and Feasibility Analysis – Entrepreneurial Idea Generation and Feasibility Analysis, Technology Commercialization Potential, Paths and Barriers from Idea to Market, Creating and Selling the Entrepreneurial Value Proposition, Assessing and Presenting the Opportunity.
- III. Business Planning and Execution – Business Structuring and Strategy, Business Model Canvas design, Business planning and the Business Plan, Financial Analysis and Projections; Market and Competitive Analysis, Presentation of the Opportunity, Intellectual Property Strategies for Technology Companies; Marketing, Sales and Distribution Strategies, Investment and Financial Strategies, Venture Growth and Value Harvesting.

Attendance Policy, Class Expectations, and Make-Up Policy

Attendance is mandatory for on-campus students and all students are expected to fully participate in class activities during the semester:

- Students who arrive for class on-time, fully participate in weekly class discussions and activities, are not cited by the Instructor or Grader for disruption or not paying attention in class (e.g., excessive talking, reviewing or working on non-class materials or information including on cell phones, laptops, etc. during class time), will receive 10 points for that weekly class attendance.
- Students who arrive up to 10 minutes late for class and participate per above will receive 5 points for that weekly class attendance.
- Students who arrive over 10 minutes late for class will receive 0 points for that weekly class attendance.

Students should be prepared to bring their laptops to the class for participation in class activities.

For EDGE and students away from campus you are expected to review the weekly lectures and recorded class sessions as appropriate, and to meet with your team on a weekly basis to work on your team activities.

For known excused absences, such as interviews, special curricular activities, and religious holidays, etc., a valid notification must be submitted to the Canvas Excused Absence Notification / Documentation assignment prior to the class period that will be missed. For emergency excused absences a valid reason must be submitted within 24 hours of the end of the missed class period.

If a student misses a class, it is the student's responsibility to find out from their classmates, the class website, or the instructor what material was covered, what additional assignments were made, and to obtain any handouts he/she may have missed.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies. The university attendance policies for undergraduate and graduate students respectively are available at <https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/> and <https://gradcatalog.ufl.edu/graduate/regulations/>.

Assignment Submission Policy

Except in rare circumstances at the sole discretion of the instructor subject to the policies of the undergraduate or graduate catalog as appropriate (<https://catalog.ufl.edu/ugrad/current>, <https://gradcatalog.ufl.edu/>), 1) assignments must be submitted via Canvas by the stated deadline, 2) late submissions will not be accepted, 3) no credit will be given for partial or late assignment submissions, and 4) no-make-up assignments will be accepted.

Evaluation of Grades

The course will be organized around lectures, readings, class discussion and a team project. All students, including EDGE students, are required to work in teams. All students will organize into teams for the purpose of developing a venture idea into an early-stage business plan and presenting that plan. Grades will be assigned as follows:

Assignment	Assignment Type	EGN4641 Points	EGN6640 Points
Student Biography	Individual	50	50
Information for Team Formation	Individual	10	10
Problem-Solution Project Proposals	Team	80	80
Value Proposition Canvas Assignment	Team	90	90
Value Proposition Feedback Workshop	Individual	20	20
Value Proposition Presentation	Team	100	100
Mid-Term Team Member Participation	Individual	20	20
Startup Failure Analysis	Individual; Grads. Only	N/A	100
Company Cap Table Submission - Seed Round	Team	20	20
Business Model Canvas Presentation	Team	60	60
Business Model Canvas - Interview Summary	Team	30	30
Company Cap Table Submission – Series A	Team	20	20
Company Financials Analysis	Team	100	100
Business Pitch Presentation	Team	100	100
Business Opportunity Summary	Team	100	100
In-class Attendance (12 @10 points each)	Individual	120	120
Experiential Learn Reflections (3 @20 points each)	Individual	60	60
Final Team Member Participation	Individual	20	20
Entrepreneurial Failures Final Essay	Individual; Grads. Only	N/A	100
Total Points Possible		1,000	1,200

All students will complete evaluations of their own and each of their team members participation / contribution to team assignments twice during the semester. Rankings and comments will be used to assess each student's contributions and if, in the sole discretion of the instructor, a student is not contributing acceptably to his/her team, the instructor reserves the right to lower an individual student's grade for any and all team assignments to a degree that the instructor in his/her sole discretion feels appropriate to reflect the lack of contribution of the student to team assignment(s).

Grading Policy

For all students, final course grades will be determined by dividing the number of points that the student has earned by the Total Points Possible for all assignments as given above (student total weighted class score) and applying the following Grading Scale:

Percent	Grade	Grade Pts
93.4 – 100	A	4.00
90.0 - 93.3	A-	3.67
86.7 - 89.9	B+	3.33
83.4 - 86.6	B	3.00
80.0 - 83.3	B-	2.67
76.7 - 79.9	C+	2.33
73.4 - 76.6	C	2.00
70.0 - 73.3	C-	1.67
66.7 - 69.9	D+	1.33
63.4 - 66.6	D	1.00
60.0 - 63.3	D-	0.67
0 - 59.9	E	0.00

More information on UF grading policy may be found at the undergraduate or graduate catalogue as appropriate:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

<https://gradcatalog.ufl.edu/graduate/regulations/>

AI Use Policy

If you choose to use Generative AI (e.g., ChatGPT, BingAI) in completing any of your work in this class, please note the guidelines below that must be followed.

Be aware of the limits of Generative AI such as ChatGPT and BingAI:

- The results you get are very dependent on the prompts you use and how well you define those prompts. If you want to get good outcomes, you need to work to refine your prompts to achieve the best results.
- Numbers and facts you may get when using Generative AI could be completely wrong. Unless you can independently confirm the results through another source, do not trust that they are correct. You will be responsible for any incorrect numbers or facts you get from the tool.
- AI is a tool and as such you must acknowledge that you used it in completing any work for the class. You must include a paragraph at the end of any assignment in which you used AI explaining how you used it and what prompts you used to get the results. Failure to do so will be considered a violation of the UF Academic Honesty Policy.
- Be thoughtful about how you use this tool and don't use it when it is not appropriate for the case or circumstance.

Students Requiring Accommodations

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting <https://disability.ufl.edu/students/get-started>. It is important for students to share their

accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

Course Evaluation

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

In-Class Recording

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third-party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

University Honesty Policy

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (<https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated

to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Commitment to a Safe and Inclusive Learning Environment

The Herbert Wertheim College of Engineering values varied perspectives and lived experiences within our community and is committed to supporting the University's core values, including the elimination of discrimination. It is expected that every person in this class will treat one another with dignity and respect regardless of race, creed, color, religion, age, disability, sex, sexual orientation, gender identity and expression, marital status, national origin, political opinions or affiliations, genetic information, and veteran status.

If you feel like your performance in class is being impacted by discrimination or harassment of any kind, please contact your instructor or any of the following:

- Your academic advisor or Graduate Program Coordinator
- HWCOE Human Resources, 352-392-0904, student-support-hr@eng.ufl.edu
- Curtis Taylor, Associate Dean of Student Affairs, 352-392-2177, taylor@eng.ufl.edu
- Toshikazu Nishida, Associate Dean of Academic Affairs, 352-392-0943, nishida@eng.ufl.edu

Software Use

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Student Privacy

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: <https://registrar.ufl.edu/ferpa.html>

Campus Resources:

- *U Matter, We Care:* If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit [U Matter, We Care website](#) to refer or report a concern and a team member will reach out to the student in distress.
- *Counseling and Wellness Center:* [Visit the Counseling and Wellness Center website](#) or call 352-392-1575 for information on crisis services as well as non-crisis services.
- *Student Health Care Center:* Call 352-392-1161 for 24/7 information to help you find the care you need, or [visit the Student Health Care Center website](#).
- *University Police Department:* [Visit UF Police Department website](#) or call 352-392-1111 (or 9-1-1 for emergencies).
- *UF Health Shands Emergency Room / Trauma Center:* For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; [Visit the UF Health Emergency Room and Trauma Center website](#).
- *GatorWell Health Promotion Services:* For prevention services focused on optimal wellbeing,

including Wellness Coaching for Academic Success, visit [GatorWell website](#) or call 352-273-4450.

- *E-learning technical support*: Contact the [UF Computing Help Desk](#) at 352-392-4357 or via e-mail at helpdesk@ufl.edu.
- [Career Connections Center](#): Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.
- [Library Support](#): Receive assistance with respect to using the libraries or finding resources.
- [Teaching Center](#): Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.
- [Writing Studio](#): 2215 Turlington, 352-846-1138. Help brainstorming, formatting, writing papers.
- Student Complaints Campus: <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>; <https://care.dso.ufl.edu>.
- On-Line Students Complaints: <https://distance.ufl.edu/getting-help/>;
[https://distance.ufl.edu/state- authorization-status/#student-complaint](https://distance.ufl.edu/state-authorization-status/#student-complaint).