Engineering Entrepreneurship
EGN4641 – Section GEN1
Class Periods: Tuesday, Periods 3-4, 9:35 am – 11:30 am
Location: Wert 360
Academic Term: Spring 2024

Instructor:
Lawrence Tinker, Ph.D.
Assistant Director and Instructional Associate Professor
UF Engineering Innovation Institute
E-mail address: latinker@eng.ufl.edu
Office Phone: 352-294-7908
Office location: Wertheim 380
Office hours: Tuesdays 1:00 pm – 3:00 pm, Thursdays 9:00 am – 11:00 am

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 talk 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:
Please contact through the Canvas website
- Tommy Duque

Course Description
Engineering Entrepreneurship 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)

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.

Recommended Materials
The Startup Owner's Manual: The Step-by-Step Guide for Building a Great Company, Steve Blank and Bob Dorf, K&S Ranch Publishers, 2012, ISBN-13: 978-0-9849993-0-9.

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 should 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. <u>Introduction to Entrepreneurship</u> – 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. <u>Idea Generation and Feasibility Analysis</u> – 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. <u>Business Planning and Execution</u> – 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 be on time (in the classroom prior to the start time of the class period) for each class session. Students are allowed one non-excused absence and any over one can be a letter grade drop, and each two unexcused lates equates to an unexcused absence.

Students are expected to fully participate in each class during the semester. Students should be prepared to bring their laptops to class for participation in class activities.

For known excused absences, such as interviews, special curricular activities, and religious holidays, etc., <u>a valid notification must be submitted to the Canvas Excused Absence Notification/Documentation assignment</u> 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. Click here to read the university attendance policies:
https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/.

Except in rare circumstances at the sole discretion of the instructor subject to the policies of the undergraduate catalog (https://catalog.ufl.edu/ugrad/current) 1) assignments must be submitted via Canvas by the stated deadline, 2) late submissions may be accepted but with a points penalty 3) no credit will be given for partial assignment submissions, and 4) no-make-up assignments will be accepted.

AI Policy
If you choose to use Generative AI 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:
- 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.
- Remember that 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 may be considered a violation of 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.

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 pitch and presenting that pitch. The deliverables for each team will be individual elements, a pitch presentation of the business opportunity to the class, and a Business Opportunity Summary document.

Grades will be assigned as follows:

Assignments - Undergraduate	Assignment type	Total Points	% of Final Grade
Student Biography and Discussion Post	Individual for all students	40	5%
In-class Team Meeting Attendance (12 @5 points each)	Team for all students*	60	7%
Experiential Learning Reflections (3 @20 points each)	Individual for all students	60	7%
Team Problem-Solution Proposals	Team for all students	100	12%
Team VPC Assignment	Team for all students	100	12%
Value Proposition Presentation	Team for all students	100	12%
Business Model Canvas Presentation	Team for all students	60	7%
Business Model Canvas - Interview Summary	Team for all students	40	5%
Company Financials Analysis	Team for all students	100	12%
Business Pitch Presentation	Team for all students	100	12%
Business Opportunity Summary	Team for all students	100	12%
Total Points Possible		860	100%

*Individual if any team member is not in attendance.

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

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:

Health and Wellness

U Matter, We Care:
Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

Counseling and Wellness Center: http://www.counseling.ufl.edu/cwc, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Discrimination, Harassment, Assault, or Violence
If you or a friend has been subjected to sexual discrimination, sexual harassment, sexual assault, or violence contact the **Office of Title IX Compliance**, located at Yon Hall Room 427, 1908 Stadium Road, (352) 273-1094, title-ix@ufl.edu

Sexual Assault Recovery Services (SARS)
Student Health Care Center, 392-1161.

University Police Department at 392-1111 (or 9-1-1 for emergencies), or http://www.police.ufl.edu/.

Academic Resources

**E-learning technical suppor*t*, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu.
https://lss.at.ufl.edu/help.shtml.

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling. https://www.crc.ufl.edu/.

Library Support, http://cms.uflib.ufl.edu/ask. Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. https://teachingcenter.ufl.edu/.

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. https://writing.ufl.edu/writing-studio/.

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.