SYLLABUS: ECE 5194.13: Empowering the Entrepreneurial Engineer

Spring 2019

Description: This course will teach entrepreneurial minded engineers the process of value creation from their technology or inventions. Topics covered will include self-assessment as an entrepreneur and innovator, analysis and validation of new venture opportunities, creation, management, protection and evaluation of intellectual property, new venture planning and project management, leadership and team building, venture financing and allocation of resources, oral presentation and written communication. The importance of the market and need, customer validation, team, funding and technology will be emphasized. Guest lecturers will be invited to present their perspectives. This will be a highly interactive class and will require significant amount of individual and team activities involving preparation and participation. The course will end with a team-based based on “New Venture Feasibility”.

Units: 3 credit hours.

Class size cap: 20 students

Prerequisite: At least one of these classes: ECE 3010, ECE 3020, ECE 3030, ECE 3040 or 3050

Lecture Hours: MWF, 3:00-3:55PM, Journalism 270

Learning Goals:

1) Self-evaluation of innovator and entrepreneurial competency and identification of skill-gaps
2) Critical analysis of value proposition of new venture ideas and opportunities
3) Creation, management, protection and evaluation of intellectual property
4) Planning and managing a new venture from concept to exit
5) Assessment and deployment of resources for successful venture financing
6) Communicate the concepts that you have learnt in a written and oral presentation.
7) Work together in a team and evaluate/assess your individual performance and the performance of your teammates

Instructor: Prof. Sanjay Krishna
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Office Hours: TBD
Textbook
- Class Notes, Handouts and Discussion

Reference Material and Recommended Reading:
- Rebel Talent by Francesca Gino,
- Early Exits: Exit Strategies for Entrepreneurs and Angel Investors (But Maybe Not Venture Capitalists) by Basil Peters
- The Lean Startup by Eric Ries
- The Effective Executive by Peter Drucker
- How Breakthroughs Happen: The Surprising Truth About How Companies Innovate by Andrew Hargadon
- The 7 Habits of Highly Effective People By Stephen Covey
- The Real-Life MBA: Your No-BS Guide to Winning the Game, Building a Team, and Growing Your Career by Jack and Suzy Welch
- Inside the Tornado: Marketing Strategies From Silicon Valley's Cutting Edge by Geoffrey Moore
- Managing for the Future: The 1990s and beyond by Peter Drucker
- The Innovator’s Solution: Creating and Sustaining Successful Growth by Clayton Christensen, Clayton and Michael Raynor
- The Portable MBA in Entrepreneurship by William Bygrave
- The Startup Owners Manual by Steve Blank and Richard Dorf
- Four Steps to the Epiphany by Steve Blank
- The Art of the Start, Guy Kawasaki, Portfolio
- The MouseDriver Chronicles: The True-Life Adventures of Two First-Time Entrepreneurs, John Lusk & Kyle Harrison, Perseus Books Group
- The Map of Innovation, Kevin O’Connor, Crown Business

Course Syllabus
Module 1: Self-Assessment of Innovator and Entrepreneur Potential (2 Weeks)
- Topics: Chapter 1: The technology entrepreneur. Characteristics of a technology entrepreneur. Personal assessment of your personality, experiences, desires, strengths, weaknesses, etc. that will influence whether or not you will be a successful entrepreneur. Several factors including genetics, family, culture, values, personality type, goals and motives combined with your sense of passion, mission and purpose will drive your decisions.
- Assessment: A short personal essay evaluating your strengths and weaknesses. This analysis should include a description of the type of
team you will need to bring together in order to launch a successful venture. And your evaluation of your ‘risk profile’

Module 2: Analysis and Validation of New Venture Opportunities (3 Weeks)
- **Topics:** Chapter 2: Opportunity and Concept. Discussion of various ideas and evaluation in terms of market potential, impact, feasibility, risk, etc. Many of these ideas will arise from your daily encounters or casual conversations. Keep your eyes and ears open to opportunities that might represent potential entrepreneurial ventures.
- **Assessment:** Single slide presentation of your new venture idea to the class. Evaluation of this idea in terms of potential impact, feasibility, risk etc will be undertaken by the instructor. The single slide presentation will also be evaluated by your team mates. The goal of this exercise is to have your idea picked by a team for further development and assessment.

Module 3: Creation, management, protection and evaluation of intellectual property (3 Weeks)
- **Topics:** Overview of various types of intellectual property: patents, trade-secrets, technical know-how. Invention disclosures, provisional patents, utility patents, definition of inventor, claims and different types of claims. International protection versus domestic protection. Guest lecture from TCO/patent attorney
- **Assessment:** Assignments/ In-class examinations/quiz

Module 4: Planning and Managing a New Venture (2 Weeks)
- **Topics:** Chapter 3-5,7: Understanding market/need and development of business model, competitive strategies and advantage, innovation strategies, equity sharing, develop basics of a business plan.
- **Assessment:** Assignments/ In-class examinations/quiz/Final presentation

Module 5: Organization, Resource Management and Risk Assessment (2 Weeks)
- **Topics:** Chapter 6,8,14: Critical elements of organization, core competency, allocation of resource, program and project management partnerships to evaluate make-buys,
- **Assessment:** Assignments/ In-class examinations/quiz/Final presentation

Module 6: Financial Plan and Sources of Capital (2 Weeks)
- **Topics:** Chapter 18: Sources of capital, financial planning, profit and loss statements, balance sheet, bill of materials, preferred and common stock, negotiating with a financer
- **Assessment:** Assignments/ In-class examinations/quiz/Final presentation
Grading:

- Personal Assessment Essay: 10%
- New Venture Idea: 10%
- Homework and Assignments: 30%
- In-class examination and quizzes: 25%
- Final Presentation: 25%

Extra Credit: Extra credit is not required and must be earned. You can submit up to 5 executive summary one-page pagers, each worth up to 2% of the overall grade based on quality. The executive summary should personalize your assessment and evaluation of (a) one of the books on the recommended reading list or (b) one of a live public speaking event by an entrepreneur that you attended during the course semester.

Policy on Late Homeworks: Homework is to be turned in at the beginning of class on the due date. No late work will be accepted without prior arrangement. Late work (with arrangements) will be docked 10% per day.

Working together: Students are encouraged to work together on homeworks but each student should hand in his or her individual solution.

Examinations and Quizzes: Examination and quizzes are closed book. You will be allowed a single cheat sheet, 8.5” by 11”, with handwritten notes only, on one side only. Scientific/graphic calculators are allowed. No internet-enabled devices are permitted. No cooperation on the examination is allowed. I am required to report any academic misconduct to the Committee on Academic Misconduct (COAM).

Missed exams: Any missed exam will result in a zero grade unless arrangements are made in advance. Suitable circumstances include illness, death in the immediate family, and situations of comparable gravity. In such cases, if and only if arrangements are made in advance, a make-up exam can be arranged. Midterms dates are announced will in advance, so plan your job interviews and such around them.

Office hours: TBD

Reaching me: You may reach me during office hours, or make an appointment by email if you cannot make my office hours.

Disabilities Statement

Any student who feels s/he may need an accommodation based on the impact of a disability should contact the instructor privately to discuss specific needs. Please contact the OSU Office for Disability Services for assistance in verifying the need for accommodations and developing accommodation strategies.

Academic Misconduct Statement
Any student found to have engaged in academic misconduct, as set forth in the Code of Student Conduct Section 3335-23-04, Prohibited Conduct, will be subject to disciplinary action by the university. Academic misconduct is any activity that tends to compromise the academic integrity of the university, or subvert the educational process.

Student Conduct

Students are expected to abide by the provisions in the Code of Student Conduct. The University’s Code of Student Conduct and Sexual Harassment Policy are available on the OSU Web page.