

ECE 5078: Empowering the Entrepreneurial Electrical and Computer Engineer

Course Description

This course will teach entrepreneurial minded engineers the process of value creation from their ECE relevant technology or inventions . Topics covered will include self-assessment as an entrepreneur and innovator, analysis and validation of new venture opportunities, intellectual property creation and assessment new venture planning and project management, leadership and team building

Prior Course Number: 5194.13

Transcript Abbreviation: Entrepreneur Eng

Grading Plan: Letter Grade

Course Deliveries: Classroom

Course Levels: Undergrad, Graduate

Student Ranks: Junior, Senior, Masters, Doctoral

Course Offerings: Spring

Flex Scheduled Course: Never

Course Frequency: Every Year

Course Length: 14 Week

Credits: 3.0

Repeatable: No

Time Distribution: 3.0 hr Lec

Expected out-of-class hours per week: 6.0

Graded Component: Lecture

Credit by Examination: No

Admission Condition: No

Off Campus: Never

Campus Locations: Columbus

Prerequisites and Co-requisites: Prereq: 3010, 3020, 3030, 3040, or 3050; or Grad standing in Engr.

Exclusions: Not open to students with credit for 5194.13.

Cross-Listings:

Course Rationale: Today's graduating engineers require a broader understanding of how their technology and inventions add value to the corporate eco-system.

The course is required for this unit's degrees, majors, and/or minors: No

The course is a GEC: No

The course is an elective (for this or other units) or is a service course for other units: Yes

Subject/CIP Code: 14.1001

Subsidy Level: Doctoral Course

Programs

Abbreviation	Description
CpE	Computer Engineering
EE	Electrical Engineering

General Information

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.

Course Goals

Students will be able to self-evaluate their innovator and entrepreneurial competency and identify their skill-gaps
Students will be able to understand value proposition and analyze new venture ideas and opportunities
Students will learn to create, manage, protect and evaluate intellectual property
Students will be able to plan and manage a new venture from concept to exit
Students will be able to assess and deploy resources for successful venture financing

Course Topics

Topic	Lec	Rec	Lab	Cli	IS	Sem	FE	Wor
Module 1: Self-Assessment of Innovator and ECE Entrepreneur Potential	6.0							
Module 2: Analysis and Validation of ECE New Venture Opportunities	9.0							
Module 3: Creation, management, protection and evaluation of intellectual property	9.0							
Module 4: Planning and Managing an ECE New Venture	3.0					1.0		
Module 5: Organization, Resource Management and Risk Assessment								
Module 6: Financial Plan and Sources of Capital	6.0							

Representative Assignments

Essays and Writing assignments
Presentations
Quizzes and In class assignment
15-20 minute final team presentation on their new venture ideation, maturation and planning

Grades

Aspect	Percent
Essays	10%
Individual Presentation	10%
Quizzes and homeworks	30%
Team presentations	25%
Final Presentation	25%

Representative Textbooks and Other Course Materials

Title	Author
<i>Technology Ventures: From Idea to Enterprise McGraw Hill, 4th Edition 2014</i>	Thomas Byers, Richard Dorf and Andrew Nelson,

ABET-EAC Criterion 3 Outcomes

Course Contribution		College Outcome
*	a	An ability to apply knowledge of mathematics, science, and engineering.
	b	An ability to design and conduct experiments, as well as to analyze and interpret data.
	c	An ability to design a system, component, or process to meet desired needs.
***	d	An ability to function on multi-disciplinary teams.
*	e	An ability to identify, formulate, and solve engineering problems.
**	f	An understanding of professional and ethical responsibility.
***	g	An ability to communicate effectively.
***	h	The broad education necessary to understand the impact of engineering solutions in a global and societal context.
**	i	A recognition of the need for, and an ability to engage in life-long learning.
*	j	A knowledge of contemporary issues.
	k	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

CpE ABET-EAC Criterion 9 Program Criteria Outcomes

Course Contribution		Program Outcome
**	1	an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
**	2	an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
***	3	an ability to communicate effectively with a range of audiences
**	4	an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
***	5	an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
*	6	an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
**	7	an ability to acquire and apply new knowledge as needed, using appropriate learning strategies

EE ABET-EAC Criterion 9 Program Criteria Outcomes

Course Contribution		Program Outcome
**	1	an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
**	2	an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors

Course Contribution		Program Outcome
***	3	an ability to communicate effectively with a range of audiences
***	4	an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
***	5	an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
*	6	an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
**	7	an ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Additional Notes or Comments

Based on the course feedback from the students, I would like to make this permanent course. In the group studies there are 20 registered students (course cap). Based on the feedback from the COE curriculum committee, the course will be focused on ECE related venture or technology opportunity.

Synched with registrar version (correct errors) 5/30/2019 BLA

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