November 5, 2013

MEMORANDUM

TO: Darryll Pines  
Dean, A. James Clark School of Engineering

FROM: Elizabeth Beise  
Associate Provost for Academic Planning and Programs

SUBJECT: Proposal to Modify the Minor in Technology Entrepreneurship (PCC log no. 13020)

The proposal to modify the Minor in Technology Entrepreneurship has been administratively approved. A copy of the approved proposal is attached.

The change is effective Spring 2014. Please ensure that the change is fully described in the Undergraduate Catalog and in all relevant descriptive materials.

MDC/

Enclosure

cc: Marilee Lindemann, Chair, Senate PCC Committee  
Sarah Bauder, Office of Student Financial Aid  
Reka Montfort, University Senate  
Erin Howard, Division of Information Technology  
Pam Phillips, Institutional Research, Planning & Assessment  
Anne Turkos, University Archives  
Linda Yokoi, Office of the Registrar  
Robert Gaines, Undergraduate Studies  
William Fourney, A. James Clark School of Engineering
College/School: A. James Clark School of Engineering
Please also add College/School Unit Code-First 8 digits: 01203200
Unit Codes can be found at: https://hvpprod.umd.edu/Html_Reports/units.htm

Department/Program: Maryland Technology Enterprise Institute (Mtech)
Please also add Department/Program Unit Code-Last 7 digits: 1321101

Type of Action (choose one):
- x Curriculum change (including informal specializations)
- □ Curriculum change for an LEP Program
- □ Renaming of program or formal Area of Concentration
- □ Addition/deletion of formal Area of Concentration
- □ Suspend/delete program

Summary of Proposed Action:
The A. James Clark School of Engineering and Mtech are requesting approval to add “ENES 140: Discovering New Ventures: Foundations in Entrepreneurship” to the eligible courses for the Minor in Technology Entrepreneurship.

Departmental/Unit Contact Person for Proposal: James V. Green

APPROVAL SIGNATURES - Please print name, sign, and date. Use additional lines for multi-unit programs.

1. Department Committee Chair
   Peter Sandborn
   9/11/13

2. Department Chair
   Peter Sandborn
   9/11/13

3. College/School PCC Chair
   Sara E. Bucci
   9/16/13

4. Dean
   Pdf
   9/16/13

5. Dean of the Graduate School (if required)

6. Chair, Senate PCC

7. University Senate Chair (if required)

8. Senior Vice President and Provost
   August 1, 2013
PCC PROPOSAL FOR CURRICULUM CHANGE
ADD COURSE ENES 140 TO THE MINOR IN TECHNOLOGY ENTREPRENEURSHIP

OVERVIEW OF MINOR

The Minor in Technology Entrepreneurship prepares students for launching successful technology ventures and bringing life-changing products and services to market. The Minor develops the entrepreneurial mind-set and functional skillsets of students to improve their ability to create, launch, and manage technology ventures. Students may earn a minor in Technology Entrepreneurship by completing coursework which focuses on entrepreneurial opportunity analysis, marketing high-technology products, strategies for managing innovation, and international entrepreneurship and innovation.

Since the establishment of the Minor in Technology Entrepreneurship in fall 2011, 35 students have graduated with the Minor. As of September 11, 2013 there were 165 students enrolled in the Minor, with new students applying weekly.

CURRENT CURRICULUM

The 15-credit undergraduate Minor is completed from a subset of ten courses. At least 9 credits must be completed at the 400-level to earn the Minor. While course options are available, application of 100 and 200-level courses is limited to a total of six credits.

ENES 210: Entrepreneurial Opportunity Analysis & Decision-Making in Technology Ventures
This interdisciplinary course helps students learn the principles of entrepreneurial opportunity analysis and decision-making in an increasingly dynamic and technically-inclined society. Emphasis is placed on how aspiring technology entrepreneurs can develop their entrepreneurial mindset and opportunity recognition capabilities to develop winning entrepreneurial plans for future ventures. ENES 210 is currently approved as a scholarship in practice and l-series course. (3 credits)

ENES 460: Fundamentals of Technology Start-Up Ventures
Fundamental aspects of creating, organizing, funding, managing, and growing a technology startup venture. This multidisciplinary course will draw on management, business, legal, financial, as well as technical, concepts. Students form teams and develop a business plan for a technology company, based on each team's own business idea and then present the plan to a panel of outside experts. (Formerly ENES489A). (3 credits)

ENES 461: Advanced Entrepreneurial Opportunity Analysis in Technology Ventures
This course explores the factors that influence entrepreneurial opportunity analysis in technology-based ventures, to include, but not limited to, software, IT, biotech, and energy startups. Using a cognitive theoretical framework the course examines the integration of motivation, emotions and information processing modes to make complex entrepreneurial decisions in fast pace technology venture environments. The course is an informed and interesting exploration of entrepreneurial cognition with both theoretical and methodological contributions for active and aspiring student technology entrepreneurs. (3 credits)

ENES 462: Marketing High-Technology Products and Innovations
Marketing of high-technology products occurs in turbulent environments and requires rapid decision making with incomplete information. Innovations are introduced at frequent intervals, research-and-development spending is vital, and there are high mortality rates for both products and businesses. The course will provide a balance between conceptual discussions based on readings of concepts and practices, and applied/hands-on analysis through industry analyses, cases, guest speakers, and a semester project. (3 credits)

ENES 463: Strategies for Managing Innovation
This course emphasizes how the technology entrepreneur can use strategic management of innovation and technology to enhance firm performance. It helps students to understand the process of technological change; the ways that firms come up with innovations; the strategies that firms use to benefit from innovation; and the process of formulating technology strategy. It provides frameworks for analyzing key aspects of these industries and teaches students how to apply these frameworks. (3 credits)
ENES 464: International Entrepreneurship & Innovation
This course focuses on the need for every entrepreneur and innovator to understand the global market in today’s hypercompetitive world, and to appreciate how to compete effectively in domestic markets by managing international competitors, suppliers, and influencers. As an ever-growing number of countries become market oriented and developed, students explore how the distinction between foreign and domestic markets is becoming less pronounced. Students also develop skills to identify and manage opportunities on a global basis. (3 credits)

ENES 465: Entrepreneurial Design Thinking
This course explores the use of design thinking as an approach to developing customer-centered solutions to problems and fostering sustained innovation within an organization. Through interactive lectures, discussions, and hands-on, team-based activities, students will learn design thinking strategies and apply them to finding innovative product- or service-based solutions to contemporary issues. ENES 465 is currently approved as a scholarship in practice course. (3 credits)

HEIP 143: Foundations of Entrepreneurship and Innovation
This course introduces foundational ideas and terms in entrepreneurship and innovation, with attention to developing students understanding of cultivating a business in diverse, global environments; leading and collaborating in a competitive world; developing an entrepreneurial mind for an entrepreneurial world; and industry dynamics of technological innovation. Restricted to students in the Honors Entrepreneurship and Innovation Program. (1 credit)

HEIP 240: Exploring International Entrepreneurship & Innovation
This course provides an introduction to the opportunities and challenges of entrepreneurship and innovation from an international perspective through lectures and guest speakers with international experiences. Restricted to students in the Honors Entrepreneurship and Innovation Program. HEIP 240 is currently approved as a scholarship in practice course. (3 credits)

HEIP 241: Social Entrepreneurship Practicum
This capstone course is for enhancing strategic capabilities and leadership skills through the development of an innovative for-profit product or service concept with social benefits. Restricted to students in the Honors Entrepreneurship and Innovation Program. (2 credits)

All courses counted towards the Minor must be completed with a C- or better, and students who matriculated to UM in or after the Fall of 2012 must earn a 2.0 cumulative Minor GPA.

NEW COURSE PROPOSED FOR INCLUSION IN THE MINOR

ENES 140: Discovering New Ventures: Foundations in Entrepreneurship

The A. James Clark School of Engineering is requesting approval to add “ENES 140: Discovering New Ventures: Foundations in Entrepreneurship” to the Minor in Technology Entrepreneurship curriculum. ENES 140 is in alignment with the goals of the Minor to develop the entrepreneurial mind-set and functional skillsets of students to improve their ability to create, launch, and manage technology ventures. ENES 140 would be a valuable addition to the Minor, and an opportunity for students to diversify and customize their Minor curriculum.

In “ENES 140: Discovering New Ventures: Foundations in Entrepreneurship” students will explore dynamic company startup topics by working in teams to design a new venture. This multi-disciplinary course helps students to learn the basic business, strategy, and leadership skills needed to launch new ventures. Topics include learning how to assess the feasibility of a startup venture, as well as how to apply best practices for planning, launching, and managing new companies. Students discuss a wide range of issues of importance and concern to entrepreneurs and learn to recognize opportunities, assess the skills and talents of successful entrepreneurs, and learn models that help them navigate uncertainty.

ENES 140 is currently approved as a scholarship in practice course. This is a three credit course.
ENES140
“Discovering New Ventures – Foundations of Entrepreneurship”

COURSE DESCRIPTION

This multi-disciplinary course helps students to learn the basic business, strategy, and leadership skills needed to launch and manage new ventures. Topics include learning how to assess the feasibility of a new venture, as well as how to apply best practices for planning, launching, and managing new companies. Students discuss a wide range of issues of importance and concern to entrepreneurs and learn to recognize opportunities, assess the skills and talents of successful entrepreneurs, and learn models and “rules of thumb” that help them navigate uncertainty. The opportunities and challenges of entrepreneurship are explored, as is the ability to use entrepreneurial skill sets in a corporate environment.

COURSE GOALS

• To understand what it means to be an entrepreneur and a leader
• To explore the motivations and characteristics that drive entrepreneurs
• To be able to identify and evaluate opportunities for new ventures
• To know how to gather resources to convert opportunities into new ventures

STATEMENT OF CONFIDENTIALITY

Throughout the course, students will be exposed to proprietary information from other students, guest lecturers and faculty. All such information is to be treated as confidential. By enrolling in and taking part of this course, students agree not to disclose this information to any third parties without specific written permission from students, guest lecturers or faculty, as applicable. Students further agree not to utilize any such proprietary information for their own personal commercial advantage or for the commercial advantage of any third party. In addition, students agree that any advice provided by the instructor and any affiliated parties will not serve as the basis of any legal suit. Any breach of this policy may subject a student to academic integrity proceedings as described in the University of Maryland policies and procedures, and to any remedies that may be available at law. Receipt of this policy and registration in our classes is evidence that you understand this policy and will abide by it.

ACADEMIC INTEGRITY

The University is one of a small number of universities with a student-administered Honor Code and an Honor Pledge. The Code prohibits students from cheating on exams, plagiarizing papers, submitting the same paper for credit in two courses without authorization, buying papers, submitting fraudulent documents, and forging signatures. The University Senate asks instructors to consider asking students to write the following signed statement on each examination or assignment: I pledge on my honor that I have not given or received any unauthorized assistance on this examination (or assignment). Compliance with the code is administered by the Student Honor Council, which strives to promote a “community of trust” on the College Park campus. Allegations of academic dishonesty should be reported directly to the Honor Council (314-8450) by any member of the campus community. For additional information, consult the Office of Student Conduct website. For a description of the University's definition of academic dishonesty, suggestions on how to prevent cheating, and practical answers to frequently asked questions about the Code of Academic Integrity, consult the Student Honor Council's Resources for Faculty webpage.
ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

The University will provide appropriate accommodations for students with documented disabilities. In order to ascertain what accommodations may need to be provided, students with disabilities must inform faculty of their needs at the beginning of the semester.

INSTRUCTOR

Dr. James V. Green
• jvgreen@umd.edu
• 301.314.1450
• Available by appointment

LOCATION

To be announced

MEETING TIME

To be announced

COURSE MATERIALS

“Entrepreneurship” by Kuratko & Hodgetts (7th or 8th Ed.).
“The Opportunity Analysis Canvas” by Green (2nd Ed.)

GRADING

Contribution, Discussion, and Quizzes (Individual) 10%
Assignments (Individual)
  Entrepreneurial Mindset 10%
  Entrepreneurial Motivation & Behaviors 10%
Team Projects
  Customer Analysis (Team) 10%
  Industry Analysis (Team) 10%
  Business Model Canvas (Team) 10%
  Investor Presentation (Team) 25%
Peer Evaluation (Individual) 10%

• Contribution, Discussion, and Quizzes – Based on (a) attendance, defined as being in the classroom and prepared on-time, (b) contribution and discussion, defined as taking an active role in the discussions, and (c) quizzes administered in class.
• Details on Assignments and the Team Projects will be available via our Canvas website.
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<tr>
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<th>Topics and readings</th>
<th>Deliverables</th>
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<td>Introduction</td>
<td>What is entrepreneurship?</td>
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<td>Personal introductions</td>
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<td>Course overview</td>
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<tr>
<td>Module 1: Entrepreneurial</td>
<td>Who is an entrepreneur?</td>
<td>Assignment 1:</td>
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<td>Perspective</td>
<td>Entrepreneurship, creativity &amp; innovation</td>
<td>Entrepreneurial Mindset</td>
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<td>Read: Kuratko Ch. 4 &amp; 5 of 7th ed. or Ch. 5 of 8th ed.</td>
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<td>The world’s most innovative companies</td>
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<td>Types of innovations</td>
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<td>Team activity: Product Design</td>
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<td>Entrepreneurs and strategic decisions</td>
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<td>Read: The Opportunity Analysis Canvas – Ch. 1 &amp; 2</td>
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<td>The Opportunity Analysis Canvas</td>
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<td>Entrepreneurial mindset</td>
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<td>Read: Kuratko Ch. 2 of 8th ed.</td>
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<td>Module 2: Entrepreneurial</td>
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<td>Assignment 2:</td>
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<td>Motivations &amp; Behaviors</td>
<td>Read: The Opportunity Analysis Canvas – Ch. 3 &amp; 4</td>
<td>Entrepreneurial</td>
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<td>Entrepreneurial behaviors</td>
<td>Motivations &amp; Behaviors</td>
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<td>Team activity: Risk Management</td>
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| Module 3: Customer Understanding | Macro changes that increase new venture opportunities  
Read: The Opportunity Analysis Canvas – Ch. 5  
Exploring real market needs  
Read: Kuratko Ch. 9 of 7th ed. or Ch. 10 of 8th ed.  
Satisfying real market needs  
Strategic positioning  
Strategic planning | Assignment 3:  
Customer Analysis |
| --- | --- | --- |
| Module 4: Industry Understanding | Selecting the right industry  
Read: Kuratko Ch. 8 of 7th ed. or Ch. 6 of 8th ed.  
Read: The Opportunity Analysis Canvas – Ch. 6-8  
Environmental assessment of entrepreneurial ventures  
Learning curve, complementary assets, & reputation effects  
Building value curves  
Read: The Opportunity Analysis Canvas – Ch. 9  
Opportunity identification  
Read: The Opportunity Analysis Canvas – Ch. 10-11 | Assignment 4:  
Industry Analysis |
| Module 5: Business Models | Introduction to business models  
Read: Business Model Generation (Overview) - Available [here](#). For more information on the business model canvas, see "Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers" by Alexander Osterwalder and Yves Pigneur.  
Developing business models  
Partnerships and alliances  
Marketing and sales plans | Assignment 5:  
Business Model Canvas |
| Module 6: Business Planning | Introduction to business plans  
|                           | Keys to raising financial capital  
|                           | Building financial statements  
|                           | Read: Kuratko Ch. 10 of 7th ed. or Ch. 11 of 8th ed  
|                           | Sources of financial capital  
|                           | Read: Kuratko Ch. 14 of 7th ed. or Ch. 8 of 8th ed  
|                           | Defining the business plan  
|                           | Read: Kuratko Ch. 11 of 7th ed. or Ch. 12 of 8th ed  
|                           | Objectives of the business plan  
|                           | Developing the marketing strategy  
|                           | Read: Kuratko Ch. 10 of 8th ed  
|                           | Sales forecasting  
|                           | Writing the business plan  
| Assignments 6 & 7:  
|                           | Investor Presentation  
|                           | Peer Evaluation |