

UNIVERSITY FACULTY SENATE FORMS

Academic Program Approval

This form is a routing document for the approval of new and revised academic programs. Proposing department should complete this form. For more information, call the Faculty Senate Office at 831-2921.

Submitted by: Dan Freeman phone number 831-6158

Department: Horn Program in Entrepreneurship email address freemand@udel.edu

Date: November 11, 2013

Action: add graduate degree (M.S.) in Entrepreneurship & Design
(Example: add major/minor/concentration, delete major/minor/concentration, revise major/minor/concentration, academic unit name change, request for permanent status, policy change, etc.)

Effective term 14F
(use format 04F, 05W)

Current degree _____
(Example: BA, BACH, BACJ, HBA, EDD, MA, MBA, etc.)

Proposed change leads to the degree of: M.S.
(Example: BA, BACH, BACJ, HBA, EDD, MA, MBA, etc.)

Proposed name: M.S. in Entrepreneurship & Design
Proposed new name for revised or new major / minor / concentration / academic unit (if applicable)

Revising or Deleting:

Undergraduate major / Concentration: _____
(Example: Applied Music – Instrumental degree BMAS)

Undergraduate minor: _____
(Example: African Studies, Business Administration, English, Leadership, etc.)

Graduate Program Policy statement change: Attached
(Must attach your Graduate Program Policy Statement)

Graduate Program of Study: MS Entrepreneurship & Design
(Example: Animal Science: MS Animal Science: PHD Economics: MA Economics: PHD)

Graduate minor / concentration: _____

Note: all graduate studies proposals must include an electronic copy of the Graduate Program Policy Document, highlighting the changes made to the original policy document.

List new courses required for the new or revised curriculum. How do they support the overall program objectives of the major/minor/concentrations)?

(Be aware that approval of the curriculum is dependent upon these courses successfully passing through the Course Challenge list. If there are no new courses enter "None")

The proposed M.S. in Entrepreneurship and Design leverages several existing ENTR graduate offerings, but will also require five new courses:

- ENTR616/UAPP716: Applied Creativity
- ENTR601: Methods in Modeling, Prototyping & Testing
- ENTR651: Special Topics in Entrepreneurship
- ENTR617/UAPP717: Design Thinking and Innovation
- ENTR602/MEEG602: Industrial Design

It is important to note that three of the courses will be cross-listed. As the letters of support from UAPP, MEEG, and tenured ART faculty indicate (see Appendix), the three cross-listed courses will be supported by instructional resources that are currently unaffiliated with ENTR. Therefore, the incremental resource burden to the Horn Program is equivalent to just two new courses.

It is also important to note that all five of the new courses will serve two other graduate programs – the graduate certificate and MBA Concentration in Entrepreneurship & Technology Innovation.

ENTR616/UAPP716: Applied Creativity

This course provides foundational knowledge in research and practice of creativity theory and creative problem-solving in entrepreneurial contexts. Topics include creativity processes, including creative problem solving models and methods, idea-generating techniques, and developing a creative disposition. Students will also explore worlds of creative activity and how to build a culture that effectively enhances individual and organizational creativity.

NOTES: Entrepreneurship involves the development of creative solutions to validated problems. This course supports the curriculum by developing student's creative problem solving skills. We anticipate the possibility of directing students who are participating in the MS program to enroll in the UAPP section of the course; a small number of ENTR-designated seats will also be offered to service the Horn Program's existing graduate programs.

ENTR601: Methods in Modeling, Prototyping & Testing

This course provides a toolbox for making design ideas a reality. Students will learn how to use current computer aided design (CAD) and manufacturing (CAM) technology to design and manufacture physical prototypes. Students will also understand and apply iterative design processes towards solving an open-ended design challenge, including problem identification, concept generation & selection, design details, and design validation.

NOTES: This course supports the curriculum by providing students with the knowledge and skills needed to bring their ideas to life through prototyping. This course will be offered in partnership with MEEG to provide students with access to the Design Studio as well as faculty support (from the faculty who teach a MEEG-designated version of the course at the undergraduate level – MEEG202).

ENTR651: Special Topics in Entrepreneurship

This course focuses on one or more special topics in entrepreneurship. Examples include: entrepreneurial leadership, influence & team building, and startup funding.

NOTES: The coverage of variable topics in this course will enable the MS program to tailor a portion of the curriculum to the specific needs and interests of its students.

ENTR617/UAPP717: Design Thinking and Innovation

This course focuses on the integration and application of design processes and design thinking to enhance innovation. Students will engage in a multidisciplinary exploration of design theory and practice, specifically applying design ideas, principles and approaches to innovation and entrepreneurship. The course emphasizes the role of user-centered research, divergent thinking, and iteration among others to enhance innovation.

NOTES: This course complements and extends ENTR616: Applied Creativity by helping students to understand how to transform their creative solutions into user-centered designs. Students who are participating in the MS program may be directed to enroll in the UAPP section of the course (if UAPP is providing instructional resources).

ENTR602/MEEG602: Industrial Design

This course provides an introduction to the theory and practice of industrial design, which is an interdisciplinary field involving the engineering, manufacturing, and business aspects of new product development. As a course project, students will apply modeling, prototyping, and testing concepts from earlier courses towards creating a commercially viable product.

NOTES: This course complements and extends ENTR601: Methods in Modeling, Prototyping, & Testing by teaching students how to transform their prototype designs into designs for commercial production. We anticipate the possibility of directing students who are participating in the MS program to enroll in the MEEG section of the course; a small number of ENTR-designated seats may also be offered to service the Horn Program's existing graduate programs.

Supply a resolution for all new majors/programs; name changes of colleges, departments, degrees; transfer of departments from one college to another; creation of new departments; requests for permanent status. See example of resolutions.

WHEREAS, the Horn Program in Entrepreneurship offers a graduate certificate and MBA concentration in Entrepreneurship & Technology Innovation, and operates a variety of impactful co-curricular programs including Hen Hatch and the Venture Development Center, and

WHEREAS, existing programs do not provide students with an opportunity to gain an optimal combination of entrepreneurship, creativity & design, and prototyping & new product development knowledge and skills, which are vital to launching startups, driving innovation for established companies, and finding market-based solutions to social problems, and

WHEREAS, student interest in entrepreneurial education at the graduate level is growing rapidly, and

WHEREAS, the Horn Program has secured an endowment gift, signed a long-term lease for space to house the program and constructed a resource ecosystem consisting of alumni, community members, and corporate and not-for-profit partners to ensure program quality and sustainability, and

WHEREAS, students who are trained in entrepreneurship & design can be expected to further the goals of the Path to Prominence™ strategic plan by solving meaningful problems and positively impacting the economic wellbeing of the state and region through startup activity and associated job creation; be it therefore

RESOLVED, that the Faculty Senate recommends provisionally for five years the approval of the establishment of a new M.S. in Entrepreneurship & Design, effective July 1, 2014.

Explain, when appropriate, how this new/revised curriculum supports the 10 goals of undergraduate education: <http://www.ugs.udel.edu/gened/>

N/A

Identify other units affected by the proposed changes:

(Attach permission from the affected units. If no other unit is affected, enter "None")

ACCT
BUAD
CHEG
FINC
MEEG
UAPP

Describe the rationale for the proposed program change(s):

(Explain your reasons for creating, revising, or deleting the curriculum or program.)

The rapid pace of technological innovation continues to disrupt established industries, decreasing the availability of career opportunities with established organizations and increasing entrepreneurial opportunities. In fact, nearly all of the net new job creation in the United States is attributable to startups – businesses open less than one year.¹

Simultaneously, student interest in entrepreneurship continues to increase with many top schools reporting significant and increasing numbers of their graduates pursuing participation in startup businesses. For example, about 16% of Stanford MBAs and 10% of Harvard MBAs are choosing to start companies at graduation, and the 10-year trend data suggests a generational shift toward entrepreneurship.²

The creation of the MS in Entrepreneurship & Design is intended to prepare students to thrive in this environment by providing core knowledge and skills related to

¹ Kane, Tim (2010). The Importance of Startups in Job Creation and Job Destruction, Kauffman Foundation Research Series. Available at: http://www.kauffman.org/uploadedFiles/firm_formation_importance_of_startups.pdf

² Byrne, John A. (2012, June 1). MBA startups at Stanford reach all-time high. [accessed from: <http://management.fortune.cnn.com/2012/06/01/mba-startups-stanford/> on November 4, 2013].

ENTREPRENEURSHIP ELECTIVE**3**

Students may choose any graduate level ENTR course (listed at 500-level or above) that is not required or allows students to repeat. Subject to the approval of the program director, they may also complete an independent study or internship related to entrepreneurship to satisfy this requirement.

BUSINESS, CREATIVITY, OR ENGINEERING ELECTIVE (choose one)**3**

Students may choose one of the pre-approved electives listed below or pursue approval from the program director to complete any business, creativity, engineering, or design elective listed at the 500-level or above.

ACCT820	Financial Statement Analysis and Valuation^
ACCT/FINC857	Private Equity/Venture Financing^
BUAD871	Managing for Creativity and Innovation^
BUAD883	Product & Price Management^
BUAD889	Business-to-Business Marketing^
CHEG595	Intellectual Property
FINC850	Financial Management
FINC861	Financial Modeling and Valuation^

^ Designates a course with prerequisite requirements that may need to be satisfied prior to enrollment. Please consult course descriptions in the academic catalog for details.

CREDITS TOTAL A MINIMUM OF**30**

LISTING OF PREREQUISITES FOR ELECTIVE COURSES
(This listing will not be included in the course catalog)

ACCT820 Financial Statement Analysis and Valuation
Prerequisite: ACCT800

ACCT/FINC857 Private Equity/Venture Financing
Prerequisite: ACCT800 and FINC850 or equivalent

BUAD871 Managing for Creativity and Innovation
Prerequisite: BUAD870

BUAD883 Product & Price Management
Prerequisite: BUAD880

BUAD889 Business-to-Business Marketing
Prerequisite: BUAD880

FINC861 Financial Modeling and Valuation
Prerequisite: FINC850

entrepreneurship, creativity & design, and prototyping & new product development. Students who complete the program will be prepared to start their own businesses, work to bring new innovations to market for established companies, and develop sustainable solutions to social problems. According to Katie Swenson, VP of Design Enterprise Community Partners, it is vital to “teach students more about development and how projects actually happen. To just teach 'design' is to ignore 95 percent of what it takes to make a project happen. Design skill is extremely important, but not in a vacuum.” (p.34).³

Program Requirements:

(Show the new or revised curriculum as it should appear in the Course Catalog. If this is a revision, be sure to indicate the changes being made to the current curriculum and **include a side-by-side comparison** of the credit distribution before and after the proposed change.)

COURSE CATALOG LISTING

M.S. – Entrepreneurship & Design

The M.S. in Entrepreneurship & Design seeks to help students thrive in an environment of rapid change by giving them the knowledge, skills, and connections needed to take advantage of entrepreneurial opportunities. The program includes interdisciplinary, experiential courses focused on entrepreneurship, creativity & design, and prototyping & new product development to prepare students to launch startups, drive innovation in established companies, and develop sustainable solutions to social problems.

The program utilizes a cohort model wherein a select group of students is admitted into the program each year. These students then take most of their courses together in a standard sequence which allows for a cohesive learning experience as well as the development of strong relationships with fellow students and program faculty. Elective options allow for the exploration of individual interests.

CURRICULUM

Grades of “B-” or better must be earned in all required and elective courses.

REQUIRED COURSES*

ENTR654	Introduction to Entrepreneurship	3
ENTR655	Startup Experience I	3
ENTR658	Application Development for New Technology	3
ENTR651	Special Topics in Entrepreneurship	3
ENTR616/UAPP716:	Applied Creativity	3
ENTR617/UAPP717:	Design Thinking & Innovation	3
ENTR601	Methods in Prototyping, Modeling & Testing	3
ENTR602/MEEG602:	Industrial Design	

- * Students who do not possess a business background (academic or professional) will be required to earn a passing grade in ENTR150: Business Basics for Entrepreneurs; however, the course will not provide credit toward the degree.

³ Swenson, Katie (2012). Design and Social Impact - a white paper based on the Social Impact Design Summit convened at the Smithsonian Cooper-Hewitt National Design Museum, New York, Feb. 27, 2012.

ROUTING AND AUTHORIZATION: (Please do not remove supporting documentation.)

Department Chairperson *Dr. Jim [Signature]* Date 9/18/2013
Dean of College *Rick Andrews, Deputy Dean* Date 2-19-14
Chairperson, College Curriculum Committee *[Signature]* Date 11/22/13
Chairperson, Senate Com. on UG or GR Studies _____ Date _____
Chairperson, Senate Coordinating Com. _____ Date _____
Secretary, Faculty Senate _____ Date _____
Date of Senate Resolution _____ Date to be Effective _____
Registrar _____ Program Code _____ Date _____
Vice Provost for Academic Affairs & International Programs _____ Date _____
Provost _____ Date _____
Board of Trustee Notification _____ Date _____

Revised 02/09/2009 /khs

Proposal for New Graduate Program

M.S. in Entrepreneurship & Design

I. DESCRIPTION

A. Background

The M.S. in Entrepreneurship & Design is intended to serve the needs of students who have earned Bachelor's degrees in engineering, arts & sciences, business and other degree programs and wish to develop the knowledge, skills, and connections needed to launch startups, drive innovation for established companies, or develop sustainable solutions to social problems. The program combines a large measure of entrepreneurial education with courses focused on creativity & design and prototyping & new product development. Students will complete the eleven month program as a cohort (see Table). In so doing, they will gain considerable first-hand experience with the process of bringing new ideas into the marketplace.

Table: Sequencing for 11-month cohort (credits in parentheses)

July-Aug	Fall	Winter	Spring
ENTR654 (3)	ENTR655 (3)	ENTR651 (3)	UAPP717 (3)
ENTR150 (0)*	ENTR658 (3)		MEEG602 (3)
	ENTR601 (3)		ENTR Elective (3)
	UAPP716 (3)		Elective (3)**

* Online courses; ENTR150 is required only for students who do not possess a business background.

** Must be related to business, creativity & design, prototyping, or new product development.

B. Program Organization

The proposal for the M.S. in Entrepreneurship & Design was developed by three faculty members - Anthony Middlebrooks (School of Public Policy & Administration), Jennifer Buckley (Mechanical Engineering), and Dan Freeman (Business Administration & Director of the Horn Program in Entrepreneurship). These members will serve as an M.S. Faculty Committee for the launch of the program. Thereafter, the Director of the Horn Program will assume administrative responsibilities for the program and the faculty of the Director's home department (currently BUAD) will assume governance responsibility for the program's curriculum.

1. Appointment of Director of the Horn Program in Entrepreneurship

The Director of the Horn Program in Entrepreneurship is appointed by the Dean, Lerner College of Business & Economics. The term of appointment is currently one year and is renewable.

2. Governance and Resourcing

Curriculum governance will reside in Lerner College in the home department of the Director of the Horn Program in Entrepreneurship. This will make the program's governance structure consistent with current practice for the Master in International

Business program and other Lerner Programs. As such, curriculum changes will progressively route through (1) the home department faculty as a whole, (2) the home department Chairperson, (3) Lerner College's Graduate Program's Committee, (4) the Lerner College faculty as a whole, (5) the Dean of Lerner College, and (6) the faculty senate.

Resourcing of the program will also occur through the home department of the Director of the Horn Program. At present this would mean that any fulltime faculty hires for the M.S., as well as other ENTR programs, would be made within Business Administration and the Dean of Lerner College would provide support funding for the M.S. through departmental mechanisms.

II. RATIONALE AND DEMAND

A. Institutional factors.

1. The Path to Prominence strategic plan calls for the University to follow five guiding principles: Delaware first, diversity, partnership, engagement, and impact. The creation of this M.S. puts Delaware first by providing students with the knowledge, skills, and resources needed to pursue opportunity, promote economic prosperity, and improve social wellbeing in Delaware communities. It encourages diversity by creating a level playing field where the best ideas tend to win; it fosters partnership by bringing people and organizations together to solve important problems; it elicits engagement by students, faculty, staff, alumni, and others by enabling them to make the world they want to live in; and it generates impact by helping to bring innovations to market and creating jobs. The creation of the M.S. is also consistent with President Harker's vision for the Science, Technology, and Advanced Research (STAR) campus, which sees the sprawling 272-acre parcel emerging as a major center for University-enabled research, innovation and commercialization over the next decade.
2. The planning process for the M.S. in Entrepreneurship & Design began in February, 2013. It has included cross-campus conversations with faculty in ART, LEAD, Biomechanics, and MEEG; an internal analysis of University strengths related to entrepreneurship & design; benchmarking against similar programs; consultation with seasoned entrepreneurs and members of the entrepreneurial ecosystem; and careful consideration of state-of-the-art pedagogies for entrepreneurial education. It has utilized lessons learned from existing Horn Program courses and degree programs, as well as the pilot "Spin In" program for technology commercialization led by the University's Office of Economic Innovation & Partnership (OEIP) with faculty participation from the College of Engineering. Input has also been sought from current students.
3. The proposed curriculum, planned cohort model (i.e., all students will move through a preset sequence of courses as a group), and enrollment cap of 35 students will ensure minimal impact on other programs. The M.S.'s only discernible impact on other programs will be from students pursuing non ENTR-designated electives. As students will be given wide latitude for selecting the one non-ENTR elective needed to complete the program, we anticipate that no more than 3-5 students would seek enrollment in any given course.
4. Scientific discoveries and inventions by University of Delaware faculty create a repository of intellectual property with commercial potential; however, very little of

this property is making it into the marketplace. The M.S. would help to promote the commercialization of this technology.

5. The M.S. will help to bring together disparate faculty and resources from three colleges, thereby creating an entrepreneurship & design program that is greater than the sum of its parts. Based on conversations associated with the development of this proposal, it seems clear that faculty who are interested in innovation & design have yet to fully realize the synergistic benefits that can be expected to result from active collaboration among like-minded colleagues across campus.

B. Student demand

1. We anticipate demand will exceed our planned enrollment target of 20-30 students per year. This expectation is based on the rapidly growing interest in entrepreneurial education, and enrollment data from the "High Technology Entrepreneurship" course, which represents a longstanding and successful partnership between the Lerner College and the College of Engineering (the course is cross-listed and co-taught). National statistics also support this expectation as the top 10 graduate entrepreneurship programs enroll more than 7,000 students (an average of more than 700 students per program).⁴
2. The program is intended to meet the needs of recent graduates from 4-year programs who may be seeking an opportunity to develop career-enhancing knowledge, skills, and connections through an experiential curriculum. It is likely to be particularly appealing to recent graduates from engineering, business, and art/design programs who were unable to fit a desired dose of entrepreneurial education into their programs of study.

C. Transferability

Previous graduate level courses with applicability to the M.S. program requirements (a maximum of 6 credit hours) may be considered toward the fulfillment of the degree. Students wishing to transfer such credits must submit a written request to the program director prior to initiating coursework as part of a program cohort. Transfer credits will be accepted provided that such credits were earned with a grade of B- or better, are approved by the program director, are not older than 5 years, are graduate level courses, and demonstrate equivalence to the program requirement they will be counted towards. Graduate credits counted toward a degree received elsewhere may not be transferred into a degree at UD. Credits from institutions outside of the United States are generally not transferrable to UD.

D. Access to graduate and professional programs

Graduates of the M.S. Program in Entrepreneurship & Design will be prepared to pursue careers associated with starting new businesses, working for established companies, and helping social enterprises. Their skill set will be broadly applicable to a wide range of industries and will also serve them well in other graduate & professional programs.

E. Demand and employment factors

Strong demand for program graduates is anticipated, as structural changes in the U.S. and other major world economies have been associated with an innovation imperative for

⁴ <http://www.entrepreneur.com/topcolleges/grad/0.html> [accessed September 3, 2012]

established companies (i.e., innovate or face external disruption) and an increase in opportunities for startup businesses. Importantly, the accelerating pace of technological innovation suggests that such opportunities are likely to continue to increase relative to other, more traditional types of employment.

F. Regional, state, and national factors

1. There are no comparable courses of study in the state of Delaware. The region is home to two top-25 graduate programs in entrepreneurship, including University of Maryland (#16) and Temple University (#19). The proposed certificate differs from degrees offered by these institutions in four notable ways: (1) it is based on a state of the art curriculum pertaining to lean startup methodology, (2) it combines coursework on creativity & design and prototyping & new product development with entrepreneurial education, (3) it combines online coursework with traditional coursework in an 11-month, cohort program, and (4) it utilizes heavy doses of experiential learning. These aspects of the proposed curriculum will better prepare students for launching their own businesses, driving innovation for established companies, or developing solutions to social problems.
2. The Association to Advance Collegiate Schools of Business (AACSB) serves as the accrediting body. Standards for AACSB accreditation provide flexibility in fashioning curricula provided that curricular contents assure the preparation of students as appropriate to the learning goals of the program. For the proposed M.S. these goals include the acquisition of knowledge and skills related to: understanding and executing the entrepreneurial process, generating & screening ideas, formulating and testing business models, conducting proof of concept testing, design thinking, rapid prototyping, agile development, and industrial design.

G. Describe other strengths

1. More than 3000 University of Delaware alumni own or have founded businesses, and nearly all who have been contacted by the Horn Program have indicated a willingness to share their time, talent, or treasure with students.
2. Faculty from the University of Delaware regularly produce scientific discoveries and inventions that have commercialization potential.
3. The University of Delaware is located in close proximity to major pharmaceutical, material science, and chemical companies. The state is also known for innovations related to green energy, health care services (especially rehabilitation), financial services, and education reform.
4. The Horn Program has an established network of more than 100 supportive entrepreneurs, venture capitalists, angel investors, lawyers, accountants, and other service providers who are engaged with the program.
5. MEEG operates a Design Studio that is equipped with fabrication equipment and 3D printers; participating faculty from ART and UAPP also control design and fabrication resources that may be beneficial to students who enroll in the program.

III. ENROLLMENT, ADMISSIONS AND FINANCIAL AID

A. Enrollment

The pilot cohort enrollment goal is 10 students. The goal for year 2 and beyond is 20-30 students with a maximum enrollment of 35. The upper bound on enrollment is necessary due to the immersive, limited capacity nature of several of the ENTR courses that form the core of the M.S. curriculum.

B. Admission Requirements & Deadlines

1. Requirements

Applicants to the M.S. in Entrepreneurship & Design program may have undergraduate degrees from business, engineering, art, or any other discipline. Well-qualified students will have:

- Strong written and oral communication skills
- Strong analytical and problem solving skills
- Demonstrated interest in entrepreneurship and/or design

Admission to graduate programs at the University of Delaware is selective and competitive based on the number of well-qualified applicants and the limits of available faculty and facilities. Those who meet stated minimum academic requirements are not guaranteed admission, nor are those who fail to meet the requirements necessarily precluded from admission if they offer other appropriate strengths. Students deficient in any of the admission requirements may be admitted on conditional status and required to complete prerequisite non-degree coursework.

The following should be considered the minimum requirements for consideration for admission:

- Comply with all of the requirements in the graduate admissions section of the catalog.
- Hold a 4-year bachelor's degree from an accredited U.S. college or university or its equivalent and a minimum cumulative GPA of 3.0 (out of 4.0).
- GMAT or GRE score. GMAT scores > 600 and the following GRE scores are competitive: Verbal + quantitative > 1200 if taken prior to August 1, 2011; Verbal + quantitative > 310 if taken after August 1, 2011. Applicants with four or more years of full-time professional work experience and an undergraduate GPA of at least 2.8 with at least a grade of 'B' in two college level math courses may request a waiver of the GMAT/GRE testing requirement. Applicants may submit a request for waiver before their application is complete or with their complete application. Requests will be approved by the program director on a case by case basis.
- International student applicants must demonstrate a satisfactory level of proficiency in the English language if English is not the first language. International applicants must have an official TOEFL score of at least 100 on internet-based tests. TOEFL scores more than two years old cannot be considered official. Alternatively, IELTS can be accepted in place of the TOEFL. The minimum IELTS score is 7.5 overall.

- A completed University of Delaware Graduate Studies Application including (1) official transcripts of all previous academic work, (2) three letters of recommendation, at least one of which must be from a professor, (3) resume outlining work and academic experience, and (4) brief essay addressing the following questions:
 - Describe how your background and professional experiences have shaped your interests and prepared you for graduate study of entrepreneurship & design.
 - Describe how completion of the program will further your professional/career objectives.
- Students may also be required to pass a formal interview with the program director or a designee.

2. Deadlines

Application review will begin on February 15 for admission into the next Fall cohort. Admission decisions are made on a rolling basis as and when applications are complete. Complete applications received by March 15 for July/Fall admission will have the best opportunity for admission.

3. 4+1 Option

Students who are enrolled fulltime in any Bachelor's degree program at the University of Delaware may apply to the M.S. in Entrepreneurship & Design as a 4+1 program. Such students must submit their applications by February 1 of their senior year, but may apply as soon as they have completed a minimum of 60 credits.

Although no one criterion is the sole basis of an admission decision, the following should be considered the minimum requirements for consideration for admission into the 4+1 program:

- A minimum cumulative GPA of 3.0 (out of 4.0).
- GRE scores: Verbal + quantitative > 1200 if taken prior to August 1, 2011; Verbal + quantitative > 310 if taken after August 1, 2011. The program director may waive the GRE for students with a GPA of 3.5 and higher.
- A completed University of Delaware Graduate Studies Application including (1) official transcripts of all previous academic work, (2) three letters of recommendation, at least one of which must be from a professor, (3) resume outlining work and academic experience, and (4) brief essay addressing the following questions:
 - Describe how your background and professional experiences have shaped your interests and prepared you for graduate study of entrepreneurship & design.
 - Describe how completion of the program will further your professional/career objectives.
- Students may also be required to pass a formal interview with the program director or a designee.

4. Change of Classification

Students currently matriculating in other graduate degree programs should complete a “Change of Classification Form” to seek approval to enter the M.S. in Entrepreneurship & Design. The program director will evaluate each “Change of Classification” request on a case-by-case basis and determine whether the student is required to submit a completed admission application form to the Office of Graduate and Professional Education and follow the same procedures for admission as other applicants.

5. Special Competencies

All students are expected to enter the program with an understanding of business basics. This understanding may be demonstrated by an academic degree in a business discipline or prior work experience. Students who lack an understanding of business basics will be required to enroll in ENTR150: Business Basics for Entrepreneurs and earn a grade of “pass” (after taking the course pass/fail). This course will not count toward the credit requirements for the M.S. in Entrepreneurship & Design.

C. Student Expenses and Financial Aid

Students will be responsible for their own tuition, and may need to seek seed funding if they choose to actively pursue the launch of a startup. The Horn Program offers a variety of opportunities to compete for such funds and is working to establish additional mechanisms of support.

Financial assistance will be offered and awarded to students in the pool of admitted applicants on a competitive basis. The University of Delaware’s policies apply to all forms of financial aid. Any continuing funding will be contingent on the student maintaining satisfactory progress toward the completion of the degree. This includes maintaining a cumulative GPA of 3.0 or higher, full compliance with the University’s Code of Conduct, and making timely progress in required course work.

IV. CURRICULUM SPECIFICS

A. Institutional Factors

Students completing this program will be awarded an M.S. in Entrepreneurship & Design by the Lerner College of Business & Economics.

B. Describe the curriculum

The M.S. in Entrepreneurship & Design requires 30 credits of graduate level course work consisting of:

1. Twelve credits focusing on fundamental aspects of entrepreneurship and the entrepreneurial process (ENTR654, ENTR655, ENTR658, & ENTR651)
2. Six credits focusing on creativity and design thinking (ENTR616/UAPP716, ENTR617/UAPP717)
3. Six credits focusing on prototyping, agile development, and new product development (ENTR601, ENTR602/MEEG602)

4. Three elective credits relating to entrepreneurship.

5. Three elective credits relating to business, creativity, engineering, or design

Please see the attached graduate program policy for additional details pertaining to the curriculum.

V. RESOURCES AVAILABLE

A. Learning Resources

Students enrolled in the program will have access to experienced entrepreneurial mentors and resources associated with the Horn Program's Venture Development Center (VDC), which serves as a learning laboratory for entrepreneurial students. These resources include books, computing resources, and other facilities. A relocation and expansion of the VDC will be completed in Spring 2014. The new facility will consist of almost 5000 ft² of co-working, creativity, conference, mentorship, office, and other space. The Horn Program is also in the process of developing a comprehensive online resource exchange for entrepreneurs, which will be piloted prior to the planned initiation of the program. No special library resources are needed.

B. Faculty / Administrative Resources

Dan Freeman, Associate Professor of Marketing, serves as Director, Horn Program in Entrepreneurship. Lerner College supports an administered load for Prof. Freeman, allowing him to spend time on program administration. Two additional fulltime administrators are in place – an Assistant Director and an Administrative Assistant IV. The Horn Program anticipates the addition of a third fulltime administrator during Spring 2014. Two of the program's administrators will participate in the administration of the M.S. in Entrepreneurship & Design (through advising, scheduling, marketing, etc.).

C. External Funding

A total of \$3.4M in external funding has been formally committed through signed agreements by alumni to support the Horn Program for the foreseeable future. Additional verbal commitments in excess of \$500K, a robust pipeline of development prospects, and revenue generating programs for youth have also been established.

VI. RESOURCES REQUIRED

A. Learning Resources

The Horn Program has secured the resources needed to build a premier entrepreneurship program. This includes funding to expand and improve the physical location of the Venture Development Center and more fully develop a resource ecosystem to support student startups.

B. Personnel Resources

The proposal calls for the creation of five new courses, each of which will be taught once per year to service each program cohort. Commitments from fulltime faculty in ART, UAPP, and MEEG have been received to staff three of the new courses for the

foreseeable future. Existing or new part-time faculty will be utilized to teach the two other new courses for the initial cohort. Such faculty, who typically possess experience in launching businesses and bringing innovations to market, have proven effective in existing Horn Program courses. Once program demand reaches the expected level of 20-30 students per year, we will look to hire a fulltime faculty member to teach ENTR-designated courses for the program.

C. Budgetary Needs

Tuition revenues are expected to more than cover instructional and administrative costs associated with the M.S. in Entrepreneurship & Design program. If necessary, the Horn Program can provide any supplemental funding that may be needed to raise awareness of the program and drive student application & enrollment.

VII. IMPLEMENTATION AND EVALUATION

A. Implementation Plan

All courses for the program will be in place by Fall 2014. The program will begin marketing the M.S. in Entrepreneurship & Design as soon as faculty senate approval is obtained.

B. Assessment Plan

Learning goals for the M.S. in Entrepreneurship & Design include:

1. acquisition of knowledge and skills germane to developing viable business models for startups
2. acquisition of knowledge and skills germane to bringing new ideas to market
3. acquisition of creative, design, and new product development knowledge and skills

Major deliverables from program courses will be used to assess the degree to which these learning goals have been accomplished. In addition, the one-, five- and 10-year career histories of program graduates will be tracked to assess the efficacy of the program in preparing students to launch startups, drive innovation for established companies, and develop sustainable solutions to social problems. These measures will be supplemented by surveying alumni and other members of the entrepreneurial community about the perceptions of students who have successfully completed the program.

VIII. APPENDICES

A. AACSB accreditation standards

B. Letters of Collaborative Agreement – N/A

C. Transfer/Retention Policy

D. Letters of Approval from Contributing Departments

- Letter of support from Maria Aristigueta, SPPA
- Letter of support from Suresh Advani, MEEG
- Email of support from Scott Jones, ACCT
- Email of support from Stewart Shapiro, BUAD
- Email of support from Helen Bowers, FINC
- Email of support from Bramie Lenhoff, CHEG

E. Other Pertinent Documents

- Letter of Support from Rick Andrews, Deputy Dean, Lerner College of Business & Economics

- Letters of Support from Faculty
 - Tony Middlebrooks
 - Ashley Pigford
 - Troy Richard

- Graduate Program Policy - NEW

APPENDIX A

AACSB Accreditation Standards

AACSB maintains a complex set of 21 accreditation standards, all of which apply at the institutional level (i.e., Lerner College of Business & Economics). Standards 1-5 relate to the strategic management of the school and whether “a school articulates its mission and action items as a guide to its view of the future, planned evolution, infrastructure, and use of resources.” Standards 6-14 relate to participants and whether “a direct link exists between a school’s mission, the characteristic of students served by the educational programs, the composition and qualifications of the faculty members providing the programs, and the overall quality of the school.” Standards 15-21 relate to the assurance of learning and whether student learning is the central activity, with clear goals and striving for continuous improvement. The source of these quotes is:

<http://www.aacsb.edu/accreditation/business/standards/> [accessed September 2, 2013]

This site also provides detailed descriptions for each of the 21 standards (listed below).

Strategic Management Standards

- Standard 1: Mission Statement
- Standard 2: Intellectual Contributions
- Standard 3: Student Mission
- Standard 4: Continuous Improvement Objectives
- Standard 5: Financial Strategies

Participant Standards

- Standard 6: Student Admission
- Standard 7: Student Retention
- Standard 8: Staff Sufficiency-Student Support
- Standard 9: Faculty Sufficiency
- Standard 10: Faculty qualifications
- Standard 11: Faculty Management and Support
- Standard 12: Aggregate Faculty and Staff Educational Responsibility
- Standard 13: Individual faculty Educational Responsibility
- Standard 14: Student Educational Responsibility

Assurance of Learning Standards

- Standard 15: Management of Curricula
- Standard 16: Undergraduate Learning Goals
- Standard 17: Undergraduate Educational Level
- Standard 18: Master’s Level General Management Learning Goals
- Standard 19: Specialized Master’s Degree Learning Goals
- Standard 20: Master’s Educational Level
- Standard 21: Doctoral Learning Goals

APPENDIX C

Transfer/Retention Policy

Transferability of Graduate Credits

Previous graduate level courses with applicability to the M.S. program requirements (a maximum of 6 credit hours) may be considered toward the fulfillment of the degree. Students wishing to transfer such credits must submit a written request to the program director prior to initiating coursework as part of a program cohort. Transfer credits will be accepted provided that such credits were earned with a grade of B- or better, are approved by the program director, are not older than 5 years, are graduate level courses, and demonstrate equivalence to the program requirement they will be counted towards. Graduate credits counted toward a degree received elsewhere may not be transferred into a degree at UD. Credits from institutions outside of the United States are generally not transferrable to UD.

APPENDIX D
Letters of Approval from Contributing Departments

- Letter of support from Maria Aristigueta, SPPA
- Letter of support from Suresh Advani, MEEG
- Email of support from Scott Jones, ACCT
- Email of support from Stewart Shapiro, BUAD
- Email of support from Helen Bowers, FINC
- Email of support from Bramie Lenhoff, CHEG



School of Public Policy & Administration

INSTITUTE FOR PUBLIC ADMINISTRATION
CENTER FOR COMMUNITY RESEARCH & SERVICE
CENTER FOR HISTORIC ARCHITECTURE & DESIGN
CENTER FOR APPLIED DEMOGRAPHY & SURVEY RESEARCH

184 Graham Hall
Newark, DE 19716-7310
Phone: 302-831-1687
Fax: 302-831-3296
Email: sppa@udel.edu

November 13, 2013

Dr. Daniel Freeman
Business Administration
Lerner College of Business & Economics
117 Alfred Lerner Hall
Newark, DE 19716

Dear Dr. Freeman:

The School of Public Policy and Administration (SPPA) is pleased to support the Horn Program's proposed M.S. in Entrepreneurship & Design by cross-listing two new UAPP courses with new ENTR courses. Specifically, SPPA will cross list UAPP716: Applied Creativity with ENTR616: Applied Creativity. We will also cross list UAPP717: Design Thinking and Innovation with ENTR617: Design Thinking and Innovation.

As we discussed, the SPPA courses are using 700-level designations because there are no 600-level UAPP numbers available. It is SPPA's intention to treat both UAPP716 and UAPP717 as 600-level courses for the purposes of student enrollment eligibility as well as possible future cross listings with 400-level courses of the same name.

SPPA also agrees to provide instructional resources for UAPP716 and UAPP717 when needed and available for the M.S. in Entrepreneurship & Design. As you know, a member of the SPPA faculty (Anthony Middlebrooks) has agreed to teach the courses on an overload basis for the foreseeable future.

SPPA's support for providing instructional resources is granted with the understanding that a fair portion of tuition revenue from students in the M.S. program will be directed to SPPA anytime we provide instructional resources for ENTR616/UAPP716 and ENTR617/UAPP717. We understand that this portion will be negotiated after the Dean of Lerner College sets tuition rates and financial aid policies for the program.

The M.S. in Entrepreneurship & Design will serve the needs of a broad range of students and we are excited to be part of it.

Sincerely,

Maria P. Aristigueta
Director, School of Public Policy and Administration
Charles P. Messick Professor of Public Administration
Vice President, American Society for Public Administration



Suresh G. Advani
George W. Laird Professor and
Chair of Mechanical Engineering
and Associate Director, Center
For Composite Materials

University of Delaware
Newark, Delaware 19716-3119
Ph: 302/831-8975
Fax: 302/831-3619

November 11, 2013

Dear Professor Freeman,

The Department of Mechanical Engineering (MEEG) is pleased to participate in the M.S. in Entrepreneurship & Design program. MEEG will support the program in two ways. First, students who enroll in ENTR601: Methods in Prototyping, Modeling & Testing will be granted access to the MEEG Design Studio and have the opportunity to work alongside students enrolled in MEEG202 and other prototyping and design-related courses.

Second, MEEG will cross list a new course – MEEG602: Industrial Design - with ENTR602: Industrial Design and provide instructional resources for the course when needed to service the M.S. program. As you know, a member of the MEEG faculty (Jennifer Buckley) has agreed to teach the course for the foreseeable future.

MEEG's support is provided with the understanding that a fair portion of tuition revenue from students in the M.S. program will be directed to the department anytime MEEG provides instructional resources for ENTR/MEEG602. It also provided with the understanding that ENTR will share a fair portion of tuition revenue associated with ENTR601 with MEEG to compensate for use of the Design Studio.

The new M.S. draws on MEEG's strength in prototyping and industrial design and we are excited to be part of it.

Sincerely,

A handwritten signature in black ink that reads "Suresh G. Advani".

Suresh G. Advani

From: Jones, Scott K.
To: Freeman, Daniel J.
Cc: Wragge, John H; Greenstein, Brian Richard
Subject: RE: Include courses as electives in new MS in ENTR & Design?
Date: Monday, November 25, 2013 11:21:33 AM
Attachments: [Image001.png](#)

Thank you for explaining the proposed MS program. Yes, we are happy to include ACCT 820 and ACCT 857 among electives, subject to students meeting the prerequisite requirements of those courses.

SJ

From: Freeman, Daniel J
Sent: Saturday, November 16, 2013 12:23 PM
To: Jones, Scott K.
Subject: Include courses as electives in new MS in ENTR & Design?

Dear Scott,

As you know, the Horn Program in Entrepreneurship is seeking to create a new M.S. in Entrepreneurship & Design program that combines a large measure of entrepreneurial education with coursework related to creativity & design thinking and prototyping & new product development. The current version of the proposal is attached for your convenience.

I am writing to formally request your approval to continue to include ACCT820: Financial Statement Analysis and Valuation and ACCT857: Private Equity/Venture Financing as elective options for the program.

We anticipate that the inclusion of ACCT820 and ACCT857 in the M.S.'s curriculum will have only a very minor impact on enrollment in the courses, perhaps adding just a few students per year. Total enrollment for the program will be capped at 35 per year and the ACCT courses would be included in a list of several pre-approved elective options. Students will also have the opportunity to enroll in any business, creativity, engineering, or design elective at the 500-level or above provided that they receive approval from the program director and the course instructor/department.

If you approve this request, please respond to this email with a simple "YES" or in whatever manner you may deem appropriate.

Thank you very much for your consideration.

Dan

Dan Freeman, Ph.D. | Director, Horn Program in Entrepreneurship
117 Alfred Lerner Hall | Newark, DE 19716
P: 302-831-6158 | **E:** freemand@udel.edu
Web: www.udel.edu/horn

From: [Shapiro, Stewart A](#)
To: [Freeman, Daniel J](#)
Subject: MS in ENTR & Design
Date: Friday, November 22, 2013 7:21:22 AM

Professor Freeman,

I enthusiastically support the proposed MS in Entrepreneurship & Design program. As the Department Head of Business Administration I agree to continue to include BUAD871: Managing for Creativity & Innovation, BUAD883: Product & Price Management, and BUAD889: Business-to-Business Marketing as elective options for the program. I am also willing to help in any other capacity I can to ensure the program's success. Thank you very much for putting together what looks like a fantastic opportunity for our students!

Regards,

Stewart Shapiro

Stewart Shapiro, Ph.D.
Chairman, Department of Business Administration
Professor of Marketing
University of Delaware
Alfred Lerner College of Business & Economics
237 Alfred Lerner Hall | Newark, DE 19716
P: 302-831-2516 | F: 302-831-4196 | E: sshapiro@udel.edu
web: www.lerner.udel.edu

From: A. M. Lenhoff
To: Freeman, Daniel J
Subject: Re: Include CHEG595 as elective in new MS in ENTR & Design?
Date: Saturday, November 16, 2013 10:56:14 PM
Attachments: ATT00001.png

Dear Dan,

Thanks for being in touch. As I understand it this extends the listing of CHEG 595 already approved in the entrepreneurship concentration of the MBA to the new self-contained MS. I would assume that you would see largely a shift of students from the concentration to the new program without a large increase in overall enrollment, in which case I think this will be OK with Al Uebler, who teaches the course. His main concern when I asked him about it last time was that non-engineering students might be intimidated by the technical content -- I don't know if you've had any feedback on that.

My only other comment is that Al has been teaching the course for 35 years, so I hope he keeps going...

Best regards,
Bramie

On 11/16/13 12:19 PM, Freeman, Daniel J wrote:

Dear Dr. Lenhoff,

The Horn Program in Entrepreneurship is seeking to create a new M.S. in Entrepreneurship & Design program that combines a large measure of entrepreneurial education with coursework related to creativity & design thinking and prototyping & new product development. The current version of the proposal is attached for your convenience.

I am writing to formally request your approval to continue to include CHEG595 as an elective option for the program.

We anticipate that the inclusion of CHEG595 in the M.S.'s curriculum will have only a very minor impact on enrollment in the course, perhaps adding just a few students per year. Total enrollment for the program will be capped at 35 per year and CHEG595 would be one of several pre-approved elective options. Students will also have the opportunity to enroll in any business, creativity, engineering, or design elective at the 500-level or above provided that they receive approval from the program director and the course instructor/department.

If you approve this request, please respond to this email with a simple "YES" or in whatever manner you may deem appropriate.

Thank you very much for your consideration.
Dan

From: [Bowers, Helen M.](#)
To: [Freeman, Daniel J](#)
Subject: RE: Include courses as electives in new MS in ENTR & Design?
Date: Monday, November 18, 2013 10:34:26 AM
Attachments: [image001.png](#)

Yes.

Helen Bowers, PhD | Department Chair & Associate Professor

Department of Finance

306 Purnell Hall | Newark, DE 19716

P: 302-831-4625 | **F:** 302-831-3061 | **E:** bowers@udel.edu

Web: www.lerner.udel.edu



From: Freeman, Daniel J
Sent: Saturday, November 16, 2013 12:27 PM
To: Bowers, Helen M.
Subject: Include courses as electives in new MS in ENTR & Design?

Dear Helen,

The Horn Program in Entrepreneurship is seeking to create a new M.S. in Entrepreneurship & Design program that combines a large measure of entrepreneurial education with coursework related to creativity & design thinking and prototyping & new product development. The current version of the proposal is attached for your convenience.

I am writing to formally request your approval to continue to include FINC850: Financial Management, FINC857: Private Equity/Venture Financing, and FINC861: Financial Modeling and Valuation as elective options for the program.

We anticipate that the inclusion of the FINC courses in the M.S.'s curriculum will have only a very minor impact on enrollments, perhaps adding just a few students per year. Total enrollment for the program will be capped at 35 per year and the FINC courses would be included in a list of several pre-approved elective options. Students will also have the opportunity to enroll in any business, creativity, engineering, or design elective at the 500-level or above provided that they receive approval from the program director and the course instructor/department.

If you approve this request, please respond to this email with a simple "YES" or in whatever manner you may deem appropriate.

Thank you very much for your consideration.

Dan

Dan Freeman, Ph.D. | Director, Horn Program in Entrepreneurship

117 Alfred Lerner Hall | Newark, DE 19716

P: [302-831-6158](tel:302-831-6158) | **E:** freemand@udel.edu

Web: www.udel.edu/horn



APPENDIX E
Other pertinent documents

Letter of Support from Rick Andrews, Deputy Dean, Lerner College of Business & Economics

Letters of Support from Faculty: Anthony Middlebrooks, Ashley Pigford, Troy Richards

Program Policy – M.S. in Entrepreneurship & Design (NEW)



Alfred Lerner College
of Business & Economics
OFFICE OF THE DEAN

303 Alfred Lerner Hall
University of Delaware
Newark, Delaware 19716-2701
Ph: 302/831-2551
Fax: 302/831-6750

November 23, 2013

The Alfred Lerner College of Business and Economics is pleased to support the proposed Master of Science (M.S.) degree in Entrepreneurship & Design, which will become the flagship graduate offering in the Horn Program in Entrepreneurship.

The proposal for the M.S. in Entrepreneurship & Design was developed by three faculty members: Anthony Middlebrooks (School of Public Policy & Administration), Jennifer Buckley (Mechanical Engineering), and Dan Freeman (Business Administration & Director of the Horn Program in Entrepreneurship). These members will serve as an M.S. Faculty Committee to implement the launch of the M.S. program. Curriculum governance will reside in the home department of the Director of the Horn Program in Entrepreneurship, which is currently Business Administration. This will make the program's governance structure consistent with that of other Lerner Programs.

Resourcing of the program will also occur through the home department of the Director of the Horn Program. At present this would mean that any full-time faculty hires for the M.S., as well as other Horn programs, would be made within the Department of Business Administration, and the Dean of Lerner College would provide funding for the M.S. through departmental mechanisms. The College will be responsible, with the advice and coordination of the Program Director, for ensuring that the qualifications of faculty teaching in the Horn Program are sufficient to maintain the standards for accreditation set forth by the Associate to Advance Collegiate Schools of Business (AACSB).

Since some of the new courses being developed for the M.S. degree could potentially count as electives for more mature graduate programs in the Lerner College (e.g., the MBA), the risk of inadequate enrollments is relatively small, and the College is confident that student tuition revenue will support the cost of offering the various academic components.

It is with much enthusiasm and excitement that the Dean's office supports this innovative new flagship degree for the Horn Program in Entrepreneurship.

Sincerely,

A handwritten signature in black ink that reads "Rick L. Andrews".

Dr. Rick L. Andrews
Deputy Dean



School of Public Policy & Administration

INSTITUTE FOR PUBLIC ADMINISTRATION
CENTER FOR COMMUNITY RESEARCH & SERVICE
CENTER FOR HISTORIC ARCHITECTURE & DESIGN
CENTER FOR APPLIED DEMOGRAPHY & SURVEY RESEARCH

184 Graham Hall
Newark, DE 19716-7310
Phone: 302-831-1687
Fax: 302-831-3296
Email: sppa@udel.edu

3 September 2013

Dan Freeman, Ph.D.
Associate Professor of Marketing
Director, Horn Program in Entrepreneurship

Dear Dan:

With this letter I express my full support and collaboration as a partner in the development and subsequent teaching of the proposed Master of Science degree in Entrepreneurship and Design. While this endeavor is not part of my current workload, I believe it will only enhance my service to my primary appointment in the SPPA, and as such I am committed to work above and beyond to ensure its success. This includes teaching ENTR616/UAPP716: Applied Creativity and ENTR617/UAPP717: Design Thinking and Innovation on s-contract, developing curriculum, working with you and other partners to develop the overall program, and executing the program within the bounds of my position in the School of Public Policy and Administration (SPPA) and the University.

The proposed program will provide a number of great opportunities for the students I serve in leadership and public policy. Further, this program enhances the connections between creativity, leadership, design, policy, and entrepreneurship, enabling greater innovation in the private, public, and community-based sectors.

I look forward to our success!

Sincerely,

Anthony Middlebrooks, Ph.D.
Associate Professor of Leadership
School of Public Policy and Administration
University of Delaware



Department of Art

Newark, DE 19716-2513
Phone: 302-831-2244

October 31, 2013

Dan Freeman
Associate Professor, Business Administration
Director, Lerner College of Business & Economics

Dear Dan,

Your proposal for a new MS program in Entrepreneurship and Design is very exciting. As a faculty member in the department of Art, I fully support the interdisciplinary, (and innovative), nature of this program and I look forward to continuing my involvement in the development and delivery of its curriculum.

I specifically appreciate the inclusion of design principles and coursework, (i.e. "Applied Creativity" and "Design Thinking and Innovation"), as these are fundamental to my pedagogy and creative research as a faculty member in the department of Art. Should the opportunity arise, I welcome the possibility of teaching these courses, (either as part of my assigned workload; or as overload).

This program is poised to offer students relevant skills and holistic knowledge that will position them as a leader in the current, (and future), global economy. It is very exciting.

Sincerely,

A handwritten signature in black ink that reads 'Ashley Pigford'.

Ashley Pigford
Associate Professor
Department of Art
University of Delaware

Dan Freeman
Associate Professor, Business Administration
Director, Lerner College of Business & Economics

Dear Dan,

I am writing in support of the new MS program in Entrepreneurship and Design. It has been exciting to learn about your program and proposed course offerings. I look forward to working with you to develop and deliver this interdisciplinary Master's program.

As an artist and designer the creative process and utilizing it to solve problems has been central to my own practice and teaching, so it is particularly encouraging to see the courses Applied Creativity and Design Thinking and Innovation. Applying ideas of design to innovation and entrepreneurship seems likely to have real world impact and I hope to have the opportunity to teach these courses in any capacity (whether as part of my regular workload or as overload).

An MS in Entrepreneurship and Design is the kind of new Masters program that UD needs as it prepares students to creatively solve the problems of our time. Its potential graduates could go on to create new products and jobs for our region and beyond. It is my hope that this will be one of many new initiatives that the university takes to integrate creativity and design into its undergraduate and graduate offerings.

Sincerely,

Troy Richards
Associate Professor
Department of Art
University of Delaware

M.S. in Entrepreneurship & Design

Program Policy

Part I. Program History

A) Statement of purpose and expectations for graduate study

The rapid pace of technological innovation can be expected to continue to disrupt established industries, decreasing the availability of career opportunities with established organizations and increasing entrepreneurial opportunities. The M.S. in Entrepreneurship & Design seeks to help students thrive in an environment of rapid change by giving them the knowledge, skills, and connections needed to take advantage of entrepreneurial opportunities. The program includes interdisciplinary, experiential courses focused on entrepreneurship, creativity & design, and prototyping & new product development to prepare students to launch startups, drive innovation in established companies, and develop sustainable solutions to social problems.

The program utilizes a cohort model wherein a select group of students is admitted into the program each year. These students then take most of their courses together in a standard sequence which allows for a cohesive learning experience as well as the development of strong relationships with fellow students and program faculty. Elective options allow for the exploration of individual interests.

B) Date of establishment – temporary status beginning July 1, 2014 (pending)

C) Degrees offered – M.S. in Entrepreneurship & Design

Part II. Admission

A) Admission Requirements

1. General requirements

Applicants to the M.S. in Entrepreneurship & Design program may have undergraduate degrees from engineering, art, business, or any other discipline. Well-qualified students will have:

- Strong written and oral communication skills
- Strong analytical and problem solving skills
- Demonstrated interest in entrepreneurship and/or design

Admission to graduate programs at the University of Delaware is selective and competitive based on the number of well-qualified applicants and the limits of available faculty and facilities. Those who meet stated minimum academic requirements are not guaranteed admission, nor are those who fail to meet the requirements necessarily precluded from admission if they offer other appropriate strengths. Students deficient in

any of the admission requirements may be admitted on conditional status and required to complete prerequisite non-degree coursework.

The following should be considered the minimum requirements for consideration for admission:

- Comply with all of the requirements in the graduate admissions section of the catalog.
- Hold a 4-year bachelor's degree from an accredited U.S. college or university or its equivalent and a minimum cumulative GPA of 3.0 (out of 4.0).
- GMAT or GRE score. GMAT scores > 600 and the following GRE scores are competitive: Verbal + quantitative > 1200 if taken prior to August 1, 2011; Verbal + quantitative > 310 if taken after August 1, 2011. Applicants with four or more years of full-time professional work experience and an undergraduate GPA of at least 2.8 with at least a grade of 'B' in two college level math courses may request a waiver of the GMAT/GRE testing requirement. Applicants may submit a request for waiver before their application is complete or with their complete application. Requests will be approved by the program director on a case by case basis.
- International student applicants must demonstrate a satisfactory level of proficiency in the English language if English is not the first language. International applicants must have an official TOEFL score of at least 100 on internet-based tests. TOEFL scores more than two years old cannot be considered official. Alternatively, IELTS can be accepted in place of the TOEFL. The minimum IELTS score is 7.5 overall.
- A completed University of Delaware Graduate Studies Application including (1) official transcripts of all previous academic work, (2) three letters of recommendation, at least one of which must be from a professor, (3) resume outlining work and academic experience, and (4) brief essay addressing the following questions:
 - Describe how your background and professional experiences have shaped your interests and prepared you for graduate study of entrepreneurship & design.
 - Describe how completion of the program will further your professional/career objectives.
- Students may also be required to pass a formal interview with the program director or a designee.

2. 4+1 option

Students who are enrolled fulltime in any Bachelor's degree program at the University of Delaware may apply to the M.S. in Entrepreneurship & Design as a 4+1 program. Such students must submit their applications by February 1 of their senior year, but may apply as soon as they have completed a minimum of 60 credits.

Although no one criterion is the sole basis of an admission decision, the following should be considered the minimum requirements for consideration for admission into the 4+1 program:

- A minimum cumulative GPA of 3.0 (out of 4.0).

- GRE scores: Verbal + quantitative > 1200 if taken prior to August 1, 2011; Verbal + quantitative > 310 if taken after August 1, 2011. The program director may waive the GRE for students with a GPA of 3.5 and higher.
- A completed University of Delaware Graduate Studies Application including (1) official transcripts of all previous academic work, (2) three letters of recommendation, at least one of which must be from a professor, (3) resume outlining work and academic experience, and (4) brief essay addressing the following questions:
 - Describe how your background and professional experiences have shaped your interests and prepared you for graduate study of entrepreneurship & design.
 - Describe how completion of the program will further your professional/career objectives.
- Students may also be required to pass a formal interview with the program director or a designee.

B) Prior degree requirements

A 4-year U.S. Bachelor's degree from an accredited college or University or its equivalent is required. Matriculating undergraduates who apply via the 4+1 option are exempt from this requirement.

C) Application deadlines

For the AY 2014-15 cohort, application review will begin as soon as the program receives formal approval and continue until June 30.

Thereafter, application review will begin on February 15 for admission into the next Fall cohort. Admission decisions are made on a rolling basis as and when applications are complete. Complete applications received by March 15 for July/Fall admission will have the best opportunity for admission.

D) Special competencies needed

All students are expected to enter the program with an understanding of business basics. This understanding may be demonstrated by an academic degree in a business discipline or prior work experience. Students who lack an understanding of business basics will be required to enroll in ENTR150: Business Basics for Entrepreneurs and earn a grade of "pass" (after taking the course pass/fail). This course will not count toward the credit requirements for the M.S. in Entrepreneurship & Design.

E) Admission categories

Students are admitted into an academic year cohort as fulltime graduate students. Once admitted, students are allowed to change their cohort only with written approval from the program director. Capacity limitations are the primary criterion used to determine whether requests are approved.

F) Change of classification

Students currently matriculating in other graduate degree programs should complete a "Change of Classification Form" to seek approval to enter the M.S. in Entrepreneurship & Design. The program director will evaluate each "Change of Classification" request on a case-by-case basis and determine whether the student is required to submit a completed admission application form to the Office of graduate and Professional Education and follow the same procedures for admission as other applicants.

Part III. Academic

A) Degree requirements

1. Course requirements

The M.S. in Entrepreneurship & Design requires the completion of 30 credits of graduate level course work. Grades of "B-" or better must be earned in all courses. Specific requirements include:

- a. Twelve credits focusing on fundamental aspects of entrepreneurship and the entrepreneurial process.

ENTR654	Introduction to Entrepreneurship	3
ENTR655	Startup Experience I	3
ENTR658	Application Development for New Technology	3
ENTR651	Special Topics in Entrepreneurship	3

- b. Six credits focusing on creativity and design thinking

ENTR616/UAPP716	Applied Creativity	3
ENTR617/UAPP717	Design Thinking & Innovation	3

- c. Six credits focusing on prototyping, agile development, and new product development (ENTR601, ENTR602/MEEG602)

ENTR601	Methods in Prototyping, Modeling & Testing	3
ENTR602/MEEG602	Industrial Design	3

- d. Three elective credits relating to entrepreneurship.

Students may choose any graduate level ENTR course (listed at 500-level or above) that is not required or allows students to repeat. Subject to the approval of the program director, they may also complete an independent study or internship related to entrepreneurship to satisfy this requirement.

- e. Three elective credits relating to business, creativity, engineering, or design

Students may choose one of the pre-approved electives listed below or pursue approval from the program director to complete any business, creativity, engineering, or design elective listed at the 500-level or above. Courses denoted with a ^ have prerequisite requirements beyond the courses included in the program and may require special permission.

ACCT820	Financial Statement Analysis and Valuation^
ACCT/FINC857	Private Equity/Venture Financing^
BUAD871	Managing for Creativity and Innovation^
BUAD883	Product & Price Management^
BUAD889	Business-to-Business Marketing^
CHEG595	Intellectual Property
FINC850	Financial Management
FINC861	Financial Modeling and Valuation^

- f. Students who do not possess a business background (academic or professional) will also be required to earn a passing grade in ENTR150: Business Basics for Entrepreneurs; however, the course will not provide credit toward the fulfillment of degree requirements.

2. Advisement

All students will develop a plan of study in consultation with the program director and a Horn Program academic advisor.

3. Procedure for petitions for variance in degree requirements (e.g., course substitution policies, completion deadlines, etc.)

All petitions for course substitutions and variances in the completion deadlines must be made to the program director.

4. Define any minimums in courses that are different from University policy

Only graduate courses completed with a grade of B- or higher are counted toward the fulfillment of requirements for the M.S. in Entrepreneurship & Design.

5. Courses which may NOT be used towards the degree

Only courses listed in the curriculum may count towards the degree unless a variance is granted by the program director.

6. Expectations of facility of expression in English (oral and written) as part of the degree requirements

There are no specific requirements; however, successful completion of the M.S. program requires fluency in both written and spoken English.

7. Transferability

Previous graduate level courses with applicability to the M.S. program requirements (a maximum of 6 credit hours) may be considered toward the fulfillment of the degree. Students wishing to transfer such credits must submit a written request to the program director prior to initiating coursework as part of a program cohort. Transfer credits will be accepted provided that such credits were earned with a grade of B- or better, are approved by the program director, are not older than 5 years, are graduate level courses, and demonstrate equivalence to the program requirement they will be counted towards. Graduate credits counted toward a degree received elsewhere may not be transferred into

a degree at UD. Credits from institutions outside of the United States are generally not transferrable to UD.

B) Committees for exams, thesis, or dissertations

The M.S. does not require a thesis or dissertation.

C) Timetable and definition of satisfactory progress towards the degree

1. Academic load

The M.S. in Entrepreneurship & Design is an eleven month, full-time program. The expected load is: Summer – 3 credits (online); Fall – 12 credits; Winter – 3 credits; Spring – 12 credits.

Progress toward the fulfillment of requirements is reviewed at the end of Fall semester for all students enrolled in the program.

2. Grade requirements (general and specific)

Students should maintain a cumulative GPA of 3.0 or higher to graduate from the M.S. in Entrepreneurship & Design program. Only graduate courses completed with a grade of B- or higher are counted toward the fulfillment of program requirements. Students receiving grades lower than B- in required courses are subject to automatic dismissal from the program. However, they may file an appeal to program director to retake the course and remain in the program. If the appeal is not approved, the program director will recommend to the Office of Graduate Studies that the student be dismissed from the program.

3. Thesis/dissertation progress timetable guidelines - N/A

4. Thesis/dissertation defense guidelines - N/A

5. Forms required

Upon completion of requirements for the M.S., the program director will submit the approved plan of study form to the Office of Graduate and Professional Education for audit. The University will state on the student's transcript that an M.S. in Entrepreneurship & Design was awarded.

6. Consequences for failure to make satisfactory progress

Students who fail to make satisfactory progress towards fulfillment of the M.S. requirements will be identified by the program director, and may be dismissed.

7. Standards of student conduct

All graduate students are subject to University of Delaware regulations regarding personal conduct and academic honesty. Violations of the UD regulations regarding academic honesty or other forms of misconduct may result in immediate dismissal from the program in accordance with UD regulations and policy.

8. Grievance procedures

Students who feel that they have been graded inappropriately or receive what they perceive as an unfair evaluation by a faculty member or the program director may file grievances in accordance with University of Delaware policies. Students are encouraged to contact the program director prior to filing a formal grievance in an effort to resolve the situation informally.

Part IV. Assessment Plan

Learning goals for the M.S. in Entrepreneurship & Design include:

1. acquisition of knowledge and skills germane to developing viable business models for startups,
2. acquisition of knowledge and skills germane to bringing new ideas to market, and
3. acquisition of creative, design, and new product development knowledge and skills.

Major deliverables from program courses will be used to assess the degree to which these learning goals have been accomplished. In addition, the one-, five- and 10-year career histories of program graduates will be tracked to assess the efficacy of the program in preparing students to launch startups, drive innovation for established companies, and develop sustainable solutions to social problems. These measures will be supplemented by surveying alumni and other members of the entrepreneurial community about the perceptions of students who have successfully completed the program.

Part V. Financial Aid

Students will be responsible for their own tuition, and may need to seek seed funding if they choose to actively pursue the launch of a startup. The Horn Program offers a variety of opportunities to compete for such funds and is working to establish additional mechanisms of support.

Financial assistance will be offered and awarded to students in the pool of admitted applicants on a competitive basis. The University of Delaware's policies apply to all forms of financial aid. Any continuing funding will be contingent on the student maintaining satisfactory progress toward the completion of the degree. This includes maintaining a cumulative GPA of 3.0 or higher, full compliance with the University's Code of Conduct, and making timely progress in required course work.

Part VI. Departmental Operations

A) General student responsibilities

1. Access to student records

Students wishing to review their file must submit a written request to the program director at least 48 hours in advance. Students must review the file in the presence of program faculty or staff and are not permitted to remove a file from the Venture Development Center but may photocopy documents from their folder. Access to student

records is provided in accordance with the Family Educational Rights and Privacy Act.

2. Standards of Student Conduct

a. Academic honesty

All graduate students are subject to University of Delaware regulations specified in the University Code of Conduct.

b. Laboratory safety and research regulations

Graduate students working in the Mechanical Engineering Design Studio and all other University facilities are subject to all University regulations regarding safety, use of human subjects and animals, and hazardous/radioactive material use and disposal. These guidelines may be found in the University of Delaware Policies and Procedures Manual.

c. Contact information

It is the responsibility of all students to ensure that their contact information on file with the University is current (mailing address, phone number, email address). It is also the student's responsibility to regularly monitor their email, phone, and mail for important notices regarding their enrollment.

B) Departmental facilities

Students pursuing the M.S. in Entrepreneurship & Design are eligible to utilize the Venture Development Center (VDC) in completing projects for program-related courses. They may also apply to become licensees of the VDC.