

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. A [checklist](#) is available to assist in the preparation of a proposal. 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: September 3, 2012

Action: add major
(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 13F
(use format 04F, 05W)

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

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

Proposed name: Entrepreneurship & Technology Innovation
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: _____
(**Must attach** your Graduate Program Policy Statement)

Graduate Program of Study: _____
(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”)

A new major in Entrepreneurship & Technology Innovation is proposed by the Horn Program in Entrepreneurship, an interdisciplinary academic program housed in the Lerner College of Business & Economics. Three new courses (described below) are required to create the major: ENTR455, ENTR456, & ENTR458. Subject to the availability of faculty and approval from the program director, each course will be taught once per academic year.

Entrepreneurship & technology innovation majors will fill approximately 75% of the seats in the new courses. The remaining seats will be reserved for students from any other major, including those outside Lerner College. This will provide students with the opportunity to work in interdisciplinary teams to try to develop & launch high growth potential businesses (ENTR455 & ENTR456) or conduct proof of concept testing to develop specific applications for new technologies (ENTR458).

The three new courses provide immersive opportunities for discovery-oriented experiential learning. Specifically, students complete real-world projects related to entrepreneurship & technology innovation with guidance from faculty. Much of the learning will occur through reflection and personal assessment. Therefore, **all three courses are proposed as DLE courses.**

ENTR 455: Startup Experience I (*proposed as DLE*)

This course involves attempting to conceive and develop a high growth potential business. Students from technical and business backgrounds work together in teams to learn and utilize a repeatable method for developing viable business concepts. Types of businesses, opportunity recognition, ideation, and validation of business model hypotheses are emphasized. Additional core topics include: intellectual property, venture capital, business strategy, and team building.

NOTES: This course is part I of the Horn Program in Entrepreneurship’s Startup Experience. Permission from the Horn Program is required for enrollment.

ENTR 456: Startup Experience II (*proposed as DLE*)

This course involves attempting to develop and launch a high growth potential business. Students from technical and business backgrounds work together in teams to validate their business concepts, optimize business processes and strategies, and begin to acquire customers. Challenges associated with rapid growth are also emphasized.

NOTES: This course is part II of the Horn Program in Entrepreneurship’s Startup Experience. Prerequisite: ENTR455 or permission from the Horn Program.

ENTR 458: Application Development for New Technology (*proposed as DLE*)

This interdisciplinary course introduces students to the key issues faced by companies attempting to bring science and technology innovations to market. The course presents best practices and general, analytic frameworks for developing commercially feasible

applications of a new technology. Students work together in teams to complete proof of concept testing that typically involves primary and secondary market research and an assessment of technological feasibility, value, and use for specific applications.

NOTE: Permission from the Horn Program is required for enrollment.

Supply support letter from the Library, Dean, and/or Department Chair if needed
(all new majors/minors will need a support letter from the appropriate administrator.)

See Appendix D for letter of support from Rick Andrews, Deputy Dean, Lerner College of Business & Economics

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 has offered a successful minor in entrepreneurial studies, and operates a variety of impactful co-curricular programs including the Venture Development Center and the annual University of Delaware President's Forum on Innovation & Entrepreneurship, and

WHEREAS, existing programs do not provide sufficient opportunities for students to acquire knowledge and skills that are vital to launching a startup, supporting the growth of emerging technology companies, or driving innovation in established businesses, and

WHEREAS, student interest in entrepreneurial education is growing rapidly and many attendees at University recruiting events have inquired about the existence of a major related to entrepreneurship, and

WHEREAS, the Horn Program has secured an endowment gift, 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 & technology innovation 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 Bachelor of Science in Entrepreneurship & Technology Innovation, effective July 1, 2013.

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

The proposed major in entrepreneurship & technology innovation strongly supports many of the goals of undergraduate education through the specification of degree requirements and the specific components of ENTR courses.

- Goal 1. Attain effective skills in oral and written communication, quantitative reasoning, and the use of information technology.

Requirements include: two communications courses, six quantitative courses (three math courses, two accounting courses, and one finance course), and two computing courses. Deliverables in ENTR courses (e.g., business concepts & marketing plans) also support this goal.

- Goal 2. Learn to think critically to solve problems.

The capstone for the major (ENTR455 & ENTR456) requires the use of critical thinking to structure and solve complex problems.

- Goal 3. Be able to work and learn both independently and collaboratively.

Required courses will include a variety of individual and group assignments. Majors will also be tasked with independently acquiring domain-specific knowledge for their startup projects. The capstone experience for the major will also require interdisciplinary collaboration.

- Goal 6. Develop the intellectual curiosity, confidence, and engagement that will lead to lifelong learning.

The major has been designed to provide considerable flexibility in the courses taken so that students can explore broadly and find areas that interest and engage them.

- Goal 7. Develop the ability to integrate academic knowledge with experiences that extend the boundaries of the classroom.

All ENTR courses focus on the integration of academic knowledge with experiences that extend the boundaries of the classroom.

- Goal 10. Develop an international perspective in order to live and work effectively in an increasingly global society.

All students are required to take one course focused on international issues, and many entrepreneurial opportunities are international in scope.

Identify other units affected by the proposed changes:

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

Courses from fourteen academic units (other than ENTR) have been included in the proposed curriculum for the major. Courses from six of the units are required; courses from the other units are included as optional or elective courses for the major. Units are listed below (the number of required courses included in the major is noted parenthetically; specific requirements are **in bold**).

ACCT (2): **207**, **208**, 352, 395, 483
BUAD (4): **301**, **306**, **309**; 302, 346, 383, 384, 391, 393, 394, **441**, 444, 446, 447, 470, 475, 479
CISC: 108, 181, 356
COMM: 212
ECON (2): **151**, 152, 311, 340, 350
ELEG: 458, 460
ENGL(1): **110**
FINC (1): **311**, 392, 415, 419
FREC: 316
HRIM: 314
LEAD: 300
MATH (3): **201**, **202**, 221, 241
MISY: 160, 225, 395
THEA: 204, 226

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 1 year.¹ The creation of the major in entrepreneurship & technology innovation is intended to prepare students to thrive in this environment by teaching them how to recognize and ideate around opportunity, bootstrap resources, search for viable business models, bring new technology to market, and launch startups.

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.) [See example of side by side.](#)

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

COURSE CATALOG DESCRIPTION

DEGREE: BACHELOR OF SCIENCE

MAJOR: ENTREPRENEURSHIP & TECHNOLOGY INNOVATION

The entrepreneurship & technology innovation major serves the needs of students who may wish to launch a startup, work for an emerging technology company, or foster innovation for a large enterprise. Entrepreneurship and technology innovation majors learn how to recognize and ideate around opportunity, conduct proof of concept testing, bootstrap resources, develop viable business models, and launch and grow new ventures. Major requirements include the completion of an immersive, experiential learning capstone. Consequently, freshman admission into the major is limited and internal transfer is competitive, requiring a minimum cumulative GPA of 3.0. Applications for internal transfer are considered on a rolling basis; however, applications must be received by the end of the second week of the fall semester for spring admission and by the end of the second week of spring semester for fall admission into the major. Preference will be given to students who have completed ENTR350 or ENTR351 prior to applying for admission into the major.

CURRICULUM

NOTE: A minimum grade of C- is needed for all University requirements, technical competency courses, and courses taken within Lerner College that are counted toward the fulfillment of degree requirements.

UNIVERSITY REQUIREMENTS

ENGL 110 - Critical Reading and Writing	3
First Year Experience (FYE)	0-4
Discovery Learning Experience (DLE, *met by required courses for the major)	3*
Multicultural Course	3

University Breadth Requirements - four courses that must be chosen from different departments outside the Lerner College of Business & Economics.

Creative Arts and Humanities	3
History and Cultural Change	3
Social and Behavioral Sciences	3
Mathematics, Natural Sciences, and Technology	3

MAJOR REQUIREMENTS

MATH	9
------	---

MATH 201	Introduction to Statistics I
MATH 202	Introduction to Statistics II

Plus choose one of the following:

MATH 221	Calculus I
----------	------------

MATH 241	Analytic Geometry and Calculus A (4 credits)	
LEGAL (choose one of the following):		3
ACCT 352	Law and Social Issues in Business	
CISC 356	Intellectual Property in the Digital Age	
COMMUNICATION (choose two of the following):		6
COMM 212	Oral Communication in Business	
THEA 204	Introduction to Voice and Speech	
THEA 226	Fundamentals of Acting I	
COMPUTING/PROGRAMMING (choose one of the following options):		6
Option I		
MISY160	Business Computing: Tools and Concepts	
MISY225	Introduction to Programming Business Applications	
Option II		
CISC 108	Introduction to Computer Science I	
CISC 181	Introduction to Computer Science II	
ECONOMICS (choose one of the following options):		6
Option I		
ECON 151	Introduction to Microeconomics: Prices and Markets	
ECON 152	Introduction to Macroeconomics: National Economy	
Option II		
ECON 151	Introduction to Microeconomics: Prices and Markets	
ECON 350	Economics of Entrepreneurship	
BUSINESS CORE		21
ACCT 207	Accounting I	
ACCT 208	Accounting II	
BUAD 301	Introduction to Marketing	
BUAD 306	Operations Management	
BUAD 309	Management and Organizational Behavior	
BUAD 441	Management Strategy	
FINC 311	Principles of Finance	
ENTREPRENEURSHIP CORE		6
ENTR 350	Introduction to Entrepreneurship	
ENTR 351	Entrepreneurial Marketing	

CAPSTONE EXPERIENCE 6

- ENTR 455 Startup Experience I
- ENTR 456 Startup Experience II

ENTREPRENEURSHIP ELECTIVES 9

Choose **one** of the following:

- ENTR 364 Entrepreneurship in Practice: Internship
- ENTR 450 Business Accelerator for Entrepreneurial Ventures
- ENTR 458 Application Development for New Technology

Plus choose any **two** of the following:

- BUAD 302 Marketing Research
- BUAD 346 Analysis of Operations Problems
- BUAD 444 Entrepreneurship and Small Business Management
- BUAD 446 Operations Planning and Control^
- BUAD 447 Quality Management^
- BUAD 470 Sales Management and Selling
- BUAD 479 Marketing Strategy^
- ELEG 458 Advanced Mobile Services: From Technology to Commercialization^
- ENTR451 Special Topics in Entrepreneurship
- ENTR/ELEG460 High Technology Entrepreneurship
- FINC 419 Financial Modeling and Valuation^
- FREC 316 Economics of Biotechnology and New Technologies
- HRIM 314 Hospitality Entrepreneurship and Value Creation
- LEAD 300 Leadership, Creativity, and Innovation^

TECHNICAL COMPETENCY 15

Complete a minimum of five courses to establish competency in a well-defined technical area. For example, a computer science competency might include CISC220, CISC275, CISC304, CISC320, and CISC360; a psychology competency might include PSYC100, PSYC207, PSYC209, PSYC303, and PSYC340; and a materials science competency might include CHEM103, PHYS207, MSEG302, MSEG410, and MSEG441). A specific course plan for the fulfillment of the technical competency requirement should be established during the freshman or sophomore year and must be approved by an advisor for the Horn Program in Entrepreneurship.

INTERNATIONAL (choose one of the following): 3

- ACCT 395 Seminar: International Accounting
- ACCT 483 Introduction to International Accounting
- BUAD 383 Seminar on International Business

BUAD 384	Global Business Environment^
BUAD 391	Seminar on International Management
BUAD 393	Seminar on International Marketing Management
BUAD 394	Seminar on International Operations Management
BUAD 475	International Marketing
ECON 311	Economics of Developing Countries^
ECON 340	International Economics^
FINC 392	Seminar on International Financial Management
FINC415	International Finance^
MISY 395	Global Issues in Information Technology

^ Designates courses with prerequisites that extend beyond courses required for the major.
Please consult course listings in the academic catalog for details.

FREE ELECTIVES 12

In addition to required courses, sufficient credits must be taken to meet the minimum credits required for the degree. At least two free elective courses must be chosen from outside the Alfred Lerner College of Business & Economics. No more than two credits of BHAN 120 may apply.

CREDITS TOTAL A MINIMUM OF 120

Specific prerequisites for the courses are as follows:

BUAD 446: Operations Planning and Control
Prerequisite: BUAD306, corequisite: BUAD447

BUAD 447: Quality Management
Prerequisite: BUAD306, corequisite: BUAD446

BUAD384: Global Business Environment
Prerequisites: Requires junior status

BUAD479: Marketing Strategy
Prerequisites: Twelve credits of marketing courses including BUAD302

ECON311: Economics of Developing Countries
Prerequisites: ECON151 and ECON152

ECON340: International Economics
Prerequisites: ECON151 and ECON152

ELEG458: Advanced Mobile Services: From Technology to Commercialization
Prerequisites: CPEG419; Knowledge of probability and linear systems

FINC415: International Finance
Prerequisite: ECON302

FINC419: Financial Modeling and Valuation
Prerequisites: FINC312 and FINC314

LEAD300: Leadership, Creativity, and Innovation
Prerequisite: LEAD100 or permission of instructor

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

Department Chairperson *Da Juan* Date 9/20/2012
Dean of College _____ Date _____
Chairperson, College Curriculum Committee _____ Date _____
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 Major

Entrepreneurship & Technology Innovation

I. DESCRIPTION

The entrepreneurship & technology innovation major is designed to serve the needs of students who may wish to launch a startup, work for an emerging technology company, or foster innovation for a large enterprise. This degree program will include a large measure of experiential learning to provide the specialized knowledge and skills needed to succeed in innovation-related career paths, including understanding how to recognize and ideate around opportunity, conduct proof of concept testing, bootstrap resources, develop viable business models, bring new technology to market, and launch & scale new ventures.

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 major 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 major is 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. It is also closely aligned with Lerner College Dean Weber's strategy for differentiating the University's business-related academic programs through experiential learning.
2. The planning process for the major began in January, 2012. It has included a site visit to the University of Arizona (which boasts at top-5 entrepreneurship program), consultation with dozens of 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 experimental courses related to the University's undergraduate minor in entrepreneurial studies and a pilot program relating to technology commercialization undertaken in partnership with the University's Office of Economic Innovation & Partnership (OEIP) and faculty from the College of Engineering. Input has also been sought from a broad array of faculty and academic advisors in the Lerner College of Business & Economics and the College of Engineering. Formal development of the proposal began in earnest in late

June, 2012 with the commitment of a \$3MM gift to the Lerner College of Business & Economics' Horn Program in Entrepreneurship (newly named – see <http://bit.ly/S87nll>) to expand entrepreneurial education opportunities for University of Delaware students.

3. The proposed curricula will impact other programs through small increases in the number of enrolled students. As the major will have limited enrollment (the cap will be set at 30 students per year including new admissions to the University and internal transfers), and most of the affected units service other, much larger Lerner College degree programs, these impacts will be minor.
4. Scientific discoveries and inventions by University faculty have resulted in a strong repository of intellectual property; however, very little of this property is making it into the marketplace. This major would help to promote the commercialization of the University's portfolio of intellectual property.

B. Student demand

1. We anticipate demand will greatly exceed our planned enrollment cap of 30 majors per year. This expectation is based on the rapidly growing interest in entrepreneurial education, as students and parents begin to recognize that being prepared to “make a job” or “take a job” is better than being prepared only for the latter. National statistics also support this expectation: (1) the top 25 undergraduate entrepreneurship programs enroll more than 17,000 students (and average of nearly 700 students per program), and (2) a recent survey of 5th to 12th grade students revealed that 77% want to be their own boss, 45% plan to start their own business, and 42% think they will invent something that changes the world.²

Credit hours generated should be 30 credits per year per student enrolled in the major. This equates to 900 credit hours in year 1 and 3600 credit hours per year when the program is operating at full capacity (with 120 majors total spread across freshman, sophomore, junior, and senior status). The new curriculum is expected to attract students who would otherwise choose to attend regional institutions that offer majors in entrepreneurship (University of Maryland, Temple University, Drexel University, Syracuse University). It will also be available to a limited number of internal transfers. We expect about 75% of those enrolled in the major to come in as new students and 25% to come in as internal transfers.

The major itself will not provide new service courses due to capacity limits in ENTR455, ENTR456, and ENTR458, which are the only new courses proposed. However, about 25% of the seats in the new courses will be reserved for non-majors, thereby providing other University students with a premier educational opportunity. In addition, the Horn Program in Entrepreneurship will continue to provide courses that meet breadth requirements and DLE requirements for students enrolled in other degree programs.

² <http://www.gallup.com/poll/150077/students-entrepreneurial-energy-waiting-tapped.aspx>

2. The program is intended to meet the needs of fulltime undergraduate students.

C. Transferability

We expect a small number of internal transfers (approximately 5-10 per year).

D. Access to graduate and professional programs

N/A

E. Demand and employment factors

The major is meant to prepare students for general career opportunities related to entrepreneurship & technology innovation.

F. Regional, state, and national factors

1. There are no comparable courses of study in the state of Delaware. The region is home to several top-25 undergraduate programs in entrepreneurship, including University of Maryland, Temple University, Drexel University, Syracuse University, and Baruch College. The proposed major differs from those offered by these institutions in three notable ways: (1) it is based on a state of the art curriculum pertaining to lean startup methodology, (2) it requires students to develop a technical competency to ensure that they have a disciplinary grounding outside of business, and (3) it utilizes a heavy dose of experiential learning (students will earn a minimum of 9 DLE credits in completing requirements for the major). These aspects of the proposed curriculum will better prepare students for launching their own businesses, working for emerging technology companies, or fostering innovation for large enterprises.
2. The Association to Advance Collegiate Schools of Business (AACSB) serves as the accrediting body. Standards for AACSB accreditation provide great 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 major these goals include the acquisition of knowledge and skills related to: recognizing and ideating around opportunity, conducting proof of concept testing, developing viable business models, bootstrapping necessary resources, bringing new technology to market, and launching new ventures.

G. Describe other strengths

1. More than 3000 University of Delaware alumni own or have founded businesses, and nearly all of those 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, financial services, and educational reform.
4. The Horn Program has an established network of more than 80 supportive entrepreneurs, venture capitalists, angel investors, lawyers, accountants, and other service providers who are engaged with the program.
5. The Horn Program is partnering with Delaware Tech, Junior Achievement, and several other entities to produce a high school entrepreneurship challenge. This challenge will provide a recruiting pipeline for the major, as the University of Delaware will host the final round of the challenge (beginning in April 2013). This partnership is informal and based on shared goals.

III. ENROLLMENT, ADMISSIONS AND FINANCIAL AID

A. Enrollment

Enrollment will be limited to 30 students per year effective upon the approval of this proposal (i.e., for AY 2013-14). This restriction is necessary due to the immersive, limited capacity nature of the capstone courses required for completion of the major. These courses are resource intensive, with low student to faculty ratios and considerable expenditures on enrichment funding (e.g., for prominent guest speakers, hands-on learning activities, etc).

B. Admission Requirements

1. Students with a demonstrated interest in entrepreneurship &/or technology innovation and strong records of academic achievement (high cumulative GPAs and standardized test results) will be selected for admission. No more than 25 students per year will be admitted into the major as incoming Freshmen.
2. A minimum GPA of 3.0 will be required for consideration for internal transfers. Preference will be given to students who have successfully completed ENTR350 and ENTR351. Transfers from other institutions are not expected.
3. No retention policy is proposed for the major.

C. Student Expenses and Financial Aid

Students 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.

IV. CURRICULUM SPECIFICS

A. Institutional Factors

A Bachelor of Science in Entrepreneurship & Technology Innovation will be awarded to students who successfully complete the requirements of the major. The BS degree is appropriate given the requirement of a technical concentration and other requirements.

B. Describe the curriculum

1-3. See course catalog description under Program Requirements in the Faculty Senate Academic Program Approval form.

4. See appendix C for letters of support from affected departments.

V. RESOURCES AVAILABLE

A. Learning Resources

Students enrolled in the major 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 is planned for Spring 2013. In addition, the Horn Program will be undertaking the creation of a comprehensive online resource exchange for entrepreneurs during the 2012-14 academic years. No special library resources are needed.

B. Faculty / Administrative Resources

The proposal calls for the creation of three new courses. Subject to the availability of faculty, each of these courses will be offered once per year. Entrepreneurship and technology innovation can be effectively taught by people who have experience in launching businesses, bringing innovations to market, and technical experts (in specific domains/industries). Therefore, these courses can be staffed by either part-time faculty or fulltime faculty who primarily teach in other programs (i.e., in a home discipline such as marketing, MIS, or chemical engineering). As a result, no new fulltime faculty will be needed to support the creation of the major.

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.

C. External Funding

A \$3MM commitment from an alumnus has been secured to support the Horn Program. A portion of this gift will be used to develop curriculum and provide resources for the major. Support for the major will be sustainable, as the gift will result in a \$2MM+ endowment for the program (by 2017).

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

Two fulltime administrators will be available to support the new major, including an Assistant Director of the Horn Program and an Administrative Assistant IV. Both will participate in the administration of the major (through advising, scheduling, marketing, etc.) and other components of the Horn Program.

C. Budgetary Needs

Tuition revenues are expected to more than cover instructional and administrative costs associated with the major. The Horn Program in Entrepreneurship will also provide a minimum of \$20,000 per year to support enrichment experiences for students enrolled in the capstone experiences and other required ENTR courses for the major.

VII. IMPLEMENTATION AND EVALUATION

A. Implementation Plan

All courses for the program will be in place by fall 2013. The program will begin marketing the major as soon as approval is obtained with the goal of enrolling at least a small initial class for fall 2013.

B. Assessment Plan

Major deliverables from the capstone courses will be used to assess the degree to which students have acquired the specialized knowledge and skills needed to succeed in innovation-related career paths, including understanding how to recognize and ideate around opportunity, conduct proof of concept testing that includes market and technical validation, bootstrap resources, develop viable business models, bring new technology to market, and launch new ventures. In addition, the 1, 5, and 10-year career histories of program graduates will be tracked to determine the efficacy of the program in preparing students to launch startups, work for emerging technology companies, and foster innovation for large enterprises. These measures will be supplemented by surveying alumni and other members of the entrepreneurial community about their perceptions of students who have successfully completed the major.

VIII. APPENDICES

- A. AACSB accreditation standards
- B. Transfer/Retention Policy

C. Letters of Approval from Contributing Departments

- ACCT & MISY – Scott Jones
- BUAD – Tom Becker
- CISC – Errol Lloyd
- COMM – Jenny Lamb
- ECON – Jim Butkiewicz
- ELEG – Ken Barner
- ENGL – John Ernest
- FINC – Helen Bowers
- FREC – Titus Awokuse
- HRIM – Francis Kwansa
- LEAD – Audrey Helfman
- MATH – John Pelesko
- THEA – Sandy Robbins

D. Other Pertinent Documents – Letter of Support from Deputy Dean Andrews

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, 2012]

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 B

Transfer/Retention Policy

A minimum GPA of 3.0 will be required for consideration for internal transfers into the Entrepreneurship & Technology Innovation major. Applications will be accepted and processed on a rolling basis. However, the end of the second week of fall semester will be the deadline for spring admission into the major and the end of the second week of spring semester will be the deadline for fall admission into the major. Preference will be given to students who have successfully completed ENTR350 or ENTR351. Transfers from other institutions are not expected.

APPENDIX C
Letters of Approval from Contributing Departments

- ACCT & MISY – Scott Jones
- BUAD – Tom Becker
- CISC – Errol Lloyd
- COMM – Jenny Lamb
- ECON – Jim Butkiewicz
- ELEG – Ken Barner
- ENGL – John Ernest
- FINC – Helen Bowers
- FREC – Titus Awokuse
- HRIM – Francis Kwansa
- LEAD – Audrey Helfman
- MATH – John Pelesko
- THEA – Sandy Robbins

From: Jones, Scott K.
Sent: Tuesday, October 02, 2012 9:13 AM
To: Freeman, Daniel J
Subject: RE: Permission to include courses in new major

Dan:

The Department of Accounting and MIS is pleased to support the proposed undergraduate major in entrepreneurship at a targeted enrollment of up to 30 students per year, as requested below.

The following courses may be included:

MISY 160

MISY 225

ACCT 207

ACCT 208

ACCT 352

ACCT 395 and MISY 395 may also be included but these courses are only offered as part of study abroad

ACCT 483 when offered

Scott Jones, PhD
Professor & Chairperson
Department of Accounting & Management Information Systems
206 Purnell Hall
University of Delaware
Newark, DE 19716
302-831-8278

From: Freeman, Daniel J
Sent: Sunday, September 30, 2012 9:46 AM
To: Jones, Scott K.
Subject: FW: Permission to include courses in new major

Dear Scott,

Sorry to have neglected to include MISY classes in my previous email. For the new major in Entrepreneurship & Technology Commercialization, we would like to **include MISY160 and MISY225 as one of two possible course sequences for the fulfillment of a computing/programming requirement.** We would also like to **include MISY395 as one of more than a dozen options for satisfying an international requirement.**

As noted previously, enrollment will be limited to 30 students per year. Thus, given that students will have an alternative option, the net impact on enrollments in MISY160 and MISY225 should be limited to about 15 total per year. The impact on enrollments in MISY395 should be negligible (perhaps totaling 2-3 each year).

Thank you very much for your consideration!
Dan

From: Becker, Thomas E
Sent: Thursday, October 04, 2012 10:10 AM
To: Freeman, Daniel J
Subject: New Major in Entrepreneurship & Technology Commercialization

Hi Dan,

This is to grant permission for the inclusion of BUAD courses in the curriculum for the new undergraduate major in Entrepreneurship & Technology Commercialization. This includes the four required courses and 13 optional courses listed in the proposal. This permission is based on the understanding that enrollment in the new major will be limited to 30 students per year and that the projected impact on enrollments in the required and optional courses will be minor.

We're happy to support this important and timely major!

Tom

Tom Becker | Chairperson and Professor
Department of Business Administration
237 Alfred Lerner Hall | Newark, DE 19716
P: 302-831-6822 | **F:** 302-831-4196 | **E:** beckert@udel.edu
Web: www.buec.udel.edu/beckert/



To: Dan Freeman
Director, Horn Program in Entrepreneurship

From: Errol Lloyd *E.L Lloyd*
Chair, CIS

Date: October 3, 2012

Subject: Support for a Entrepreneurship & Technology Commercialization major

This memo affirms the support of the Department of Computer and Information Sciences for the proposed major in Entrepreneurship and Technology Commercialization. This blending of entrepreneurship and technology (of all kinds) seems spot on in providing UD students with the training to be successful in the today's business and market environments.

The proposal includes computer science courses in three locations:

- CISC108 and CISC181 are one of two options under "Computing/Programming"
- CISC356 is one of two options under "Legal"
- Computer Science is listed as one possible area under "Technical Competency"

The CIS Department supports each of these options. Given current course loads, we are able to accommodate the projected additional students in these classes within the context of our existing offerings.

From: Jenny Lambe [mailto:jenny.lambe@gmail.com]
Sent: Sunday, September 30, 2012 10:51 PM
To: Freeman, Daniel J
Subject: Re: Permission to include courses in new major

Dr. Freeman:

I approve adding this requirement to your proposed new undergraduate major, with the understanding that yearly enrollment is not expected to exceed 30 added students per year to our COMM 212 & COMM 350 classes (combined). If enrollment should be much higher, we would need to discuss options for growing the number of instructors for those classes.

Please let me know if you need any further information to move your proposal forward.

Best,
Jenny Lambe

On Sun, Sep 30, 2012 at 9:08 AM, Freeman, Daniel J <freemand@udel.edu> wrote:

Dear Prof. Lambe,

I am writing to formally request your permission to include COMM courses in the proposal for a new undergraduate major in Entrepreneurship & Technology Commercialization. Specifically, we would like to include **COMM212 and COMM350 as two options for fulfilling a communication requirement. Students would be required to choose one of the courses to fulfill the requirement.**

Enrollment in the new major will be limited to **30 students per year**. As some of these students will likely transfer internally from majors that have similar COMM requirements, the net impact on enrollments should be minor (perhaps totaling 25 across all sections of both courses during a given academic year).

Please let me know if you have any questions or concerns. Thank you very much for your consideration!

Dan

From: Butkiewicz, James L
Sent: Monday, October 01, 2012 4:44 PM
To: Freeman, Daniel J
Subject: RE: Permission to include courses in new major

Dan,

We are happy to have our courses included.

As Jim O'Neill is retiring, I'm not sure who will teach Econ 350 (our entrepreneurship course) in the long run. We do have someone for the spring, and possible the immediate future. Just though you should know.

Jim

From: Freeman, Daniel J
Sent: Sunday, September 30, 2012 9:14 AM
To: Butkiewicz, James L
Subject: Permission to include courses in new major

Dear Jim,

I am writing to formally request your permission to include ECON courses in the proposal for a new undergraduate major in Entrepreneurship & Technology Commercialization. Specifically, we would like to include **ECON151 as a required course for all students, ECON152 and ECON350 as options for a second required ECON course, and ECON311 and ECON340 as two of more than a dozen options for fulfilling an international requirement.**

Enrollment in the new major will be limited to **30 students per year**. As some of these students will likely transfer internally from majors that require ECON151 and ECON152, the net impact on enrollments should be minor (perhaps totaling 25 per year for ECON151; 10-15 total per year for ECON152 and ECON350; and 1-2 for ECON311 and ECON340).

Please let me know if you have any questions or concerns. Thank you very much for your consideration!

Dan

Dan Freeman, Ph.D.
Director, Horn Program in Entrepreneurship
University of Delaware
302.831.6158 (O)
302.383.9484 (M)
www.udel.edu/e-studies

From: Barner, Kenneth E.
Sent: Sunday, September 30, 2012 6:27 PM
To: Freeman, Daniel J
Cc: Boncelet, Charles, JR
Subject: RE: Permission to include courses in new major

Dan:

The ECE Department approves the inclusion of the courses noted below in the proposed major. Good luck with the new program!

Ken

From: Freeman, Daniel J
Sent: Sunday, September 30, 2012 9:20 AM
To: Barner, Kenneth E.
Subject: Permission to include courses in new major

Dear Ken,

I am writing to formally request your permission to include ELEG courses in the proposal for a new undergraduate major in Entrepreneurship & Technology Commercialization. Specifically, we would like to include **ELEG458 and ELEG460 among a set of fourteen entrepreneurial electives.** Students will be required to choose two of the fourteen to fulfill degree requirements.

Enrollment in the new major will be limited to **30 students per year.** Given that students will have a broad array of options, the impact on enrollments should be minor (perhaps totaling a handful of students each year).

Please let me know if you have any questions or concerns. Thank you very much for your consideration!

Dan

Dan Freeman, Ph.D.
Director, Horn Program in Entrepreneurship
University of Delaware
302.831.6158 (O)
302.383.9484 (M)
www.udel.edu/e-studies

From: Ernest, John Richard
Sent: Thursday, October 04, 2012 9:13 PM
To: Freeman, Daniel J
Subject: RE: Permission to include courses in new major

Dear Professor Freeman,

I write to express the support of the English Department for the proposed undergraduate major in Entrepreneurship & Technology--but with one qualification. We cannot support a requirement in ENGL 312, since we cannot meet the demands for that course and therefore cannot ensure that your students would be able to take the course. However, we do agree to the inclusion of ENGL 110 as a University Requirement. I wish you well with this important educational initiative.

Sincerely,

John Ernest

John Ernest, Chair

Department of English

University of Delaware

208 Memorial Hall

Newark, DE 19716

302-831-3351

From: Freeman, Daniel J
Sent: Sunday, September 30, 2012 9:59 AM
To: Ernest, John Richard
Subject: FW: Permission to include courses in new major

Dear Prof. Ernest,

I am writing to request your permission to include ENGL courses in the proposal for a new undergraduate major in Entrepreneurship & Technology Commercialization. Specifically, we would like to include **ENGL110 as a University Requirement and ENGL312 as one of three options for fulfilling a communication requirement.**

Enrollment in the new major will be limited to **30 students per year.** As some of these students will likely transfer internally from majors that require ENGL110 and/or ENGL312, the net impact on enrollments should be minor.

Please let me know if you have any questions or concerns. Thank you very much for your consideration!

Dan



**Alfred Lerner College
of Business & Economics**

DEPARTMENT OF FINANCE

306 Purnell Hall
Newark, DE 19716-2712
Phone: 302-831-1484
Fax: 302-831-3061

TO: Dan Freeman, Director
Horn Program in Entrepreneurship

FROM: Helen Bowers, Associate Professor and Chair
Department of Finance

Helen Bowers

DATE: September 30, 2012

RE: Letter of support for the proposed major in Entrepreneurship & Technology
Commercialization

The Department of Finance strongly supports the proposed major in Entrepreneurship & Technology Commercialization.

We understand that FINC311 Principles of Finance is a required course in this program. The Department of Finance agrees to make this course available to students majoring in Entrepreneurship & Technology Commercialization who have met the prerequisites.

We also agree to make FINC419 Financial Modeling and Valuation available as an elective course and FINC392 Seminar on International Financial Management and FINC415 International Finance available as international options to students in the Entrepreneurship & Technology Commercialization major who have met the prerequisites.

We appreciate the opportunity to work with the Horn Program in Entrepreneurship on offering the Entrepreneurship & Technology Commercialization major.

October 10, 2012.

Dan Freeman, Ph.D.
Director, Horn Program in Entrepreneurship
University of Delaware
Newark, DE 19716

Dear Dr. Freeman,

Re: Letter of Support for BS in Actuary Science Degree

The Department of Applied Economics and Statistics (APEC) is pleased to support the newly proposed undergraduate degree major in the Entrepreneurship & Technology Commercialization. We are in support of your plan to use one of our courses (APEC 316) as part of the elective courses for the degree. My department is excited to be a part of this initiative and looks forward to having your students in the classroom. Please contact me if I can be of additional assistance in this process.

Sincerely,



Titus O. Awokuse
Professor and Chair

From: kwansa@UDel.Edu [mailto:kwansa@UDel.Edu]
Sent: Monday, October 01, 2012 8:27 AM
To: Freeman, Daniel J
Cc: Kwansa, Francis A; Miller, Brian L; Laws, Donna E
Subject: Re: Permission to include HRIM314 in new major

Dear Dan:

HRIM is pleased to contribute HRIM314 to the list of elective courses available to the Entrepreneurship and Technology Commercialization major. We look forward to having the students in our class. Thanks.

Francis A. Kwansa, Ph.D. | Interim Chair Hotel, Restaurant and Institutional Management Alfred Lerner
College of Business and Economics
14 W. Main Street | Newark, DE 19716
P: 302-831-6083 | F: 302-831-6395 | E: kwansa@udel.edu
Web: www.lerner.udel.edu/hrim

----- Original message -----

>Date: Sun, 30 Sep 2012 13:34:19 +0000
>From: "Freeman, Daniel J" <freemand@UDel.Edu>
>Subject: Permission to include HRIM314 in new major
>To: "Kwansa, Francis A" <kwansa@UDel.Edu>
>
> Dear Francis,
> I am writing to formally request your permission to
> include HRIM314 among a set of fourteen
> entrepreneurial electives for a new undergraduate
> major in Entrepreneurship & Technology
> Commercialization. Students will be required to
> choose two of the fourteen elective options to
> fulfill degree requirements.
>
> As enrollment in the new major will be limited to 30
> students per year, the impact on enrollments in
> HRIM314 should be minor (perhaps totaling a handful
> of students each year).
>
> Please let me know if you have any questions or
> concerns. Thank you very much for your
> consideration!
>
> Dan

From: Audrey Helfman [mailto:ahelfman@UDel.Edu]
Sent: Sunday, September 30, 2012 12:22 PM
To: Freeman, Daniel J
Subject: Re: Permission to include LEAD300 in new major

Dear Dr. Freeman,
I wholeheartedly support the inclusion of LEAD 300 as an elective for the new major in Entrepreneurship & Technology Commercialization.

Regards,
Audrey Helfman, Ph.D.
Director, Organizational and Community Leadership program

Sent from my iPhone

On Sep 30, 2012, at 9:36 AM, "Freeman, Daniel J" <freemand@UDel.Edu> wrote:

Dear Prof. Helfman,

I am writing to request your permission to include LEAD300 **among a set of fourteen entrepreneurial electives** for a new undergraduate major in Entrepreneurship & Technology Commercialization. Students will be required to choose two of the fourteen elective options to fulfill degree requirements.

As enrollment in the new major will be limited to **30 students per year**, the impact on enrollments in LEAD300 should be minor (perhaps totaling a handful of students each year).

Please let me know if you have any questions or concerns. Thank you very much for your consideration!

Dan

Dan Freeman, Ph.D.
Director, Horn Program in Entrepreneurship
University of Delaware
302.831.6158 (O)
302.383.9484 (M)
www.udel.edu/e-studies

From: John A. Pelesko [mailto:pelesko@math.udel.edu]
Sent: Monday, October 15, 2012 12:22 PM
To: Freeman, Daniel J
Subject: Re: Permission to include courses in new major

Dear Professor Freeman,

We are happy to support your new program in Entrepreneurship & Technology and will gladly provide space for your students in the required courses, Math 201 and Math 202. In addition, we are glad to accommodate your students in Math 221 or Math 241 as options for their third required math course. Best of luck with your new program!

John A. Pelesko

On 9/30/2012 9:40 AM, Freeman, Daniel J wrote:
Dear Prof. Pelesko,

I am writing to formally request your permission to include MATH courses in the proposal for a new undergraduate major in Entrepreneurship & Technology Commercialization. Specifically, we would like to include **MATH201 and MATH202 as required courses for all students. We would also like to include MATH221 and MATH241 as options for a third required MATH course.**

Enrollment in the new major will be limited to **30 students per year**. As some of these students will likely transfer internally from majors with similar math requirements, the net impact on enrollments should be minor (perhaps totaling 25 per year for MATH201 and MATH202 and 10-15 total per year for MATH221 and MATH241).

Please let me know if you have any questions or concerns. Thank you very much for your consideration!

Dan

Dan Freeman, Ph.D.
Director, Horn Program in Entrepreneurship
University of Delaware
302.831.6158 (O)
302.383.9484 (M)
www.udel.edu/e-studies

From: Robbins, Sanford L. [mailto:srobbins@art-sci.udel.edu]
Sent: Tuesday, October 02, 2012 9:55 PM
To: Freeman, Daniel J
Subject: RE: Permission to include THEA courses

I support your request to include THEA204 and THEA226 as two of three options for fulfilling a communication requirement for the new major in Entrepreneurship & Technology commercialization with the proviso that you know our THEA students have first priority for seats.

All the Best,

Sanford (Sandy) Robbins
Chairperson, Department of Theatre

From: Freeman, Daniel J [mailto:freemand@UDel.Edu]
Sent: Sunday, September 30, 2012 9:57 AM
To: Robbins, Sanford L
Subject: Permission to include THEA courses

Dear Prof. Robbins,

I am writing to request your permission **to include THEA204 and THEA226 as two of three options** for fulfilling a communication requirement for a new major in Entrepreneurship & Technology commercialization. I have heard great things about these courses from students, and I believe that they would be extremely useful for aspiring entrepreneurs who need to project confidence in themselves and their ideas if they want to have any chance to succeed. So, I am hopeful that you will allow their inclusion in the major.

Enrollment in the new major will be **limited to 30 students per year**. As the students will also have a third option for fulfilling the requirement, and they will need to choose only one course, the total impact on course enrollments should be no more than about 10 per course per year.

Please let me know if you have any questions or concerns. Thank you very much for your consideration!

Dan

Dan Freeman, Ph.D.
Director, Horn Program in Entrepreneurship
University of Delaware
302.831.6158 (O)
302.383.9484 (M)
www.udel.edu/e-studies

APPENDIX D

Other pertinent documents

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



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

October 3, 2012

The Alfred Lerner College of Business and Economics is pleased to support the proposed undergraduate major in Entrepreneurship & Technology Commercialization, which will become a major component in the newly named and revamped Horn Program in Entrepreneurship.

The Entrepreneurship & Technology Commercialization major will not be housed within a particular department in the Lerner College. That being the case, the College will be responsible, in coordination with the program director, for ensuring that resources for staffing the program are sufficient to maintain the standards for accreditation set forth by the Associate to Advance Collegiate Schools of Business (AACSB).

The proposed enrollment of 30 students per year poses no resourcing problems for the program.

Sincerely,

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

Dr. Rick L. Andrews
Deputy Dean