

The University Senate of Michigan Technological University

Proposal 19-13

(Voting Units: Academic)

Proposal for a Spin-Off from “B.S. in Management” to a “B.S. in Management with a Concentration in Entrepreneurship”

1. Program Description

The proposed “B.S. in Management with a Concentration in Entrepreneurship” is designed by the School of Business and Economics (SBE) to provide students with the experience and confidence to create a new business or induce and manage technology innovations or play a strong role in innovative/entrepreneurial organizations. The proposed Concentration in Entrepreneurship focuses on the creation of social and economic value by developing the unique capabilities of idea generation, opportunity recognition, resource acquisition, technology commercialization, and entrepreneurial management. Entrepreneurship students will learn to shape entrepreneurial opportunities, assess financial feasibility, and develop business models in addition to writing business plans. Given the strong science and engineering emphasis of Michigan Technological University, the concentration also provides customized paths for students wishing to develop and commercialize new technologies and patents within the entrepreneurial settings.

2. Rationale

Overview

Major rationales behind this proposal are presented below:

1. It has been widely agreed that entrepreneurship is important to higher education in the United States ^[1]. It has been identified as a key element in undergraduate education. The Kauffman Foundation outlines four critical reasons behind its importance: (a) entrepreneurship is critical to understanding and succeeding in the contemporary global economy; (b) it is already an expanding area of American college learning; (c) it is becoming a basic part of what universities themselves do; and (d) it meets many of the goals of a quality American undergraduate education.
2. There is a growing interest in entrepreneurship courses among undergraduate students at Michigan Tech. Over the last three years, student enrollment in the entrepreneurship courses has increased. We have observed greater participation in the Elevator Pitch and Business Plan Competitions hosted by the School of Business and Economics. Students have also shown active participation in the New Venture Competition organized jointly by the Central Michigan University and Michigan Technological University. This observed growing interest among students could be sustained by offering an official program in entrepreneurship – the proposed concentration.
3. The strong emphasis of Science and Technology at Michigan Tech offers a great potential to develop unique entrepreneurship courses and programs around new technologies and patents emerging out of the MTU Michigan Tech campus. In this regard, the Business Development Experience course (listed as BUS 4991 and BUS 4992) – being offered at the School of Business and Economics since 2010 and now proposed as a required course for the concentration in entrepreneurship - provides experiential learning opportunities wherein senior year students enrolled in the School of Business and Economics work towards identifying the commercial viability of real-life projects that are undertaken as either senior design engineering or Enterprise related projects. This arrangement continues to strengthen links between the business school and engineering departments on campus. In addition, entities such as the MTEC SmartZone, the Innovation and Industry Engagement Office at Michigan Tech and the Advanced

Technology Development Center have also committed to provide avenues of engaging undergraduate students in developing business models, business plans and technology-commercialization plans, thereby offering a real entrepreneurial environment for our students.

4. Possessing entrepreneurial skills will enhance job opportunities for Michigan Tech graduates.
5. There are currently two faculty members that hold endowed positions in entrepreneurship and innovation in the School of Business and Economics. Dr. Saurav Pathak, the Rick and Jo Berquist Assistant Professor in Entrepreneurship and Innovation, joined ~~MTU~~ **Michigan Tech** in the fall of 2011. Dr. Tang Wang, the Charles C. and John G. Gates Assistant Professor in Entrepreneurship and Innovation, joined ~~MTU~~ **Michigan Tech** in the fall of 2012. Both professors currently teach entrepreneurship related courses that are either elective for Management majors and/or special topics in management. Their expertise in the area of entrepreneurship is valuable resources that would facilitate and sustain the implementation and the delivery of the proposed concentration.

Link to Strategic Plan

The proposed concentration will support Michigan Tech's efforts to achieve its Strategic Plan by "Delivering a distinctive and rigorous discovery-based learning experience grounded in science, engineering, technology, sustainability, the business of innovation,..." (Michigan Tech Strategic Plan, <http://www.mtu.edu/stratplan/>). Additionally, this proposed concentration supports the School of Business and Economics by fulfilling its mission to "... integrate[s] the University's technological prominence with experience-based learning to develop leaders in global business and innovation ..." (School of Business and Economics Mission, <http://www.mtu.edu/business/school/dean/mission-values/>). Management majors with a Concentration in Entrepreneurship are in demand in the technology startups, high-growth businesses, venture capital, and non-for-profit organizations.

What Is Entrepreneurship?

Entrepreneurship is a process of new business creation entailing (1) recognizing business opportunities, (2) developing successful business ideas around those opportunities, (3) moving from ideas to launching entrepreneurial firms, and (4) managing and growing the created firm. Recognized opportunities often lead to the creation of new firms that are either small businesses or those that are driven by innovation. While the former is traditionally linked with self-employment, lower risks and lower growth, the latter is linked to result from technological changes that entail taking higher risks by the entrepreneur that subsequently yields higher growth. Either way, the entrepreneurial firm creation process continues to evolve from the identification and assessment of opportunity to the analysis of a business model and strategy, writing business plans, securing the financing or funding requirements for a business, forming an entrepreneurial team, preparing the proper ethical and legal foundation including protecting ones intellectual property as well as meeting the managerial challenge of enterprise growth.

What Can You Do With a College Major in Management with a Concentration in Entrepreneurship?

Entrepreneurship is one of the central drivers of our economy and students understand that^[2]. Students no longer believe they will take a job with a large corporation and expect that they will spend their careers in one place. Students graduating out of this concentration will have a wider range of interdisciplinary skills providing flexibility and preparation for the future. Evidence shows some will choose to "take the plunge" immediately after a degree in entrepreneurship or after having worked a regular job for a few years. Entrepreneurship is one such skill that allows them to do so and studies show that entrepreneurship can actually be taught^[3].

Entrepreneurship students are familiar with opportunity recognition – that would certainly be essential for personal growth in any corporate sector as well. A formal degree in entrepreneurship is especially beneficial when students are hired by companies started by innovators themselves, such as Google, Facebook, Microsoft, Apple, etc.

More than 2,000 college and universities in the United States, about two-thirds of the total, offer a course in entrepreneurship ^[4]. A smaller but growing number have entire sequences leading to an undergraduate minor or a master's in entrepreneurship.

Entrepreneurship is certainly one path for individuals beginning their careers or looking for a change. Entrepreneurs can focus on opportunity assessment, technology commercialization, new product development, and venture capital financing. There are countless opportunities for a bright, ambitious individual to fit into the entrepreneurial setting. Students out of this concentration would be one step closer to do exactly so.

Concentration Differentiator:

The proposed concentration would:

- a. Create awareness about the possibility of starting one's own business and be independent,
- b. Provide adequate knowledge and experience to students to realize (a),
- c. Provide students with real-life *business development experience by allowing them to work closely with the idea of commercializing*:
 - i. Senior design engineering projects
 - ii. Enterprise projects
 - iii. Intellectual properties out of the Technology Transfer Office at ~~MTU~~ **Michigan Tech**
 - iv. Business opportunities incubated at the SmartZone
- d. Encourage and provide experiences such as the *Bob Mark Elevator Pitch Competition, New Venture Competition, Silicon Valley trip, etc.*
- e. Combine content based learning with experiential learning.

Notable Information

- The student advisor will need to more carefully classify students by Concentrations in the B.S. in Management. Communication to incoming students will ensure they are placed in the correct category from their initial enrollment.
- Dr. Saurav Pathak met with Mr. James Turnquist, Director of Career Services, regarding the demand for graduates majoring in the B.S. in Management with a Concentration in Entrepreneurship. Turnquist highlighted that the proposed concentration aligns well with the intentions of students that come to his office and express their aspirations to start their own businesses but seem lost as to how to do so. He also mentioned that the SBE should also target its alumni base. He receives inquiries from alumni regarding the possibilities of entrepreneurial courses on campus and/or online.
- We are collaborating with the Jim Turnquist, Director of Career Services, to ensure the designed curriculum meets the needs of future employers and students interested in entrepreneurship.

3. Related Programs

- a. Northern Michigan University: College of Business, offers as major as well as minor (<http://www.nmu.edu/business/node/59>).
- b. Michigan State University – Broad College of Business offers a specialization (<http://uas.broad.msu.edu/academics/specializations/entrepreneurship-specialization/>)
- c. University of Michigan – Ross School of Business, offers what it calls “Program in Entrepreneurship – a nine-credit specialized study in entrepreneurship (<http://cfe.umich.edu/program-entrepreneurship>). They also offer a 36-credit hour Masters in entrepreneurship (<http://cfe.umich.edu/academics>) and a 15-credit hour Certificate of Advanced Studies in Engineering (CASE) in Entrepreneurship (<http://cfe.umich.edu/case>).
- d. Central Michigan University: Offered as a Major in Entrepreneurship: (http://www.cmich.edu/academics/business_admin/entrepreneurship/Pages/Entrepreneur_Major.aspx)
- e. Wayne State University: Offered as an Engineering Entrepreneur Certificate Program in the College of Engineering (<http://engineering.wayne.edu/edge/academics/edge-certificate.php>)
- f. Ferris State University: Offered as Small Business and Entrepreneurship Minor (<http://catalog.ferris.edu/programs/531/>)
- g. Kettering University: Offered as Innovation and Entrepreneurship Minor (http://www.kettering.edu/futurestudents/undergraduate/innovationminor_curriculum.jsp)

The required courses for BS in Management with a concentration in entrepreneurship align with those of other universities. The opportunities to offer elective courses are dictated by resources.

4. Projected Enrollment

There are currently 69 students enrolled in the B.S. in Management major. Enrollments in the proposed concentration are expected to be positively linked to the enrollments in the Management major.

The course titled “Entrepreneurship” (MGT 3800) is currently being offered as an elective for all majors in the School of Business and Economics. Since the fall of 2010, there is positive growth in the number of students majoring in Management who opted for this elective (shown in bold in Table 1). There is also positive growth in the number of overall enrollment in this course across various majors. Combined, the history of enrollment confirms the popularity of this course. This is shown in Table 1. The proposed concentration will be offered beginning in the 2013-2014 academic year.

Table 1 History of enrollment in the course titled “Entrepreneurship” (MGT 3800) – Since Fall 2010 across majors

Majors	Number of students by Majors who enrolled in the course titled “Entrepreneurship” since fall of 2010							
	Fall 2010	Spring 2011	Fall 2011	Spring 2012	Fall 2012 ^{††}		Spring 2013 ^{*,††}	
Management	3	6	8	9	4	9	8	2
Accounts	4	1	0	2	1	0	0	0
Finance	4	4	6	6	4	2	5	1
Management Information System (MIS)	0	2	1	2	0	0	1	0
Marketing	2	1	8	2	4	6	2	1
Operations and Systems Management (OSM)	1	0	0	0	1	3	3	1
BBA ^{**}	25	13	7	3	0	1	1	0
Others ^{***}	9	11	8	8	8	7	6	3
Total per semester	48	38	38	32	50		34	

Note: The table above is based on the number of enrollments shown in Banner for the course titled “Entrepreneurship” and listed as MGT 3800.

* Tentative registration as observed on faculty Banweb.

** BS in Business Administration, which is no longer offered and was replaced with the BS in Management

*** from outside the business school.

†† The table reports two columns for fall 2012 and spring 2013 due to the fact that the course has been offered as two sections in these semesters. Each column lists the number of enrollments in each of the sections. The total number of enrollments over both these sections in fall of 2012 and spring of 2013 (tentative) is reported in bold (50 and 34 respectively)

Targeted enrollment in the longer term is expected to approach 35-40 students, which is comparable to other majors in the School of Business and Economics. These numbers are for new incoming students and transfers from internal students.

2013-2014	20 (First year as concentration)
2014-2015	25
2015-2016	30
2016-2017	35
2017-2018	40

Note: The increase will be as a result of

- Streamlining the implementation of Business Development Experience (BUS 4991 and BUS 4992) course in the initial year. The Ad-hoc Entrepreneurship Committee has successfully identified multiple opportunities on and around the ~~MTU~~ **Michigan Tech** campus (and distant) that would provide students with high quality experiential learning, attracting more students subsequently.
- Linking students in the concentration with like-minded students at other universities, thus making their learning experience more dynamic and practical

5. Scheduling Plans

The B.S. in Management with a Concentration in Entrepreneurship will be a regular on-campus program offering.

6. Curriculum Design

The proposed BS in Management with a concentration in Entrepreneurship will entail making a few changes to the extant BS in Management curriculum design. The B.S. in Management with Concentration in Entrepreneurship curriculum is appended to the end (See attached [audit sheet](#) and [course timing sheet](#)).

7. New Course Descriptions and Changes

New Course Description:

Entrepreneurial Management (MGT 49XX)

- This course would be offered in Spring 2013 and Spring 2014 under the special topics course numbering (MGT4990). Special topics run for two years before they are added as a regular course. MGT 49XX will thus be offered as a special topics course, to be later changed in 2014-2015 to a regular course through the course proposal/binder process. In the academic year 2014-2015 the course will have a regular course number.

Course Description: The course examines additional management topics and issues in greater depth. A single offering of this course (with a possibility of it being offered twice per academic year in future) will concentrate on how entrepreneurship involves identifying market opportunities based on new ideas:

assessing ideas, crafting a business model, and developing a business proposal for new and existing ventures. Other details related to the course are:

Credits: 3.0

Lec-Rec-Lab: (3-0-0)

Semesters Offered: Spring semester (introduced in spring 2013 and subsequently offered in fall and spring semesters)

Restrictions: Permission of instructor required

Pre-Requisite(s): MGT 3800 (Entrepreneurship)

Please refer to the audit worksheet attached at the end of this document

8. Library and other Learning Resources

The support of the J.R. Van Pelt and John and Ruanne Opie Library is currently sufficient.

9. Faculty Resumes

School of Business and Economics faculty resumes are found at <http://www.mtu.edu/business/school/faculty/> and specific links to the information on the faculty associated with this proposal are provided as hyperlinks below.

Primarily faculty for Management Major courses and Concentration requirements include:

Dr. [Gregory A. Graman](#), Associate Professor, Operations and Supply Chain Management

Dr. [Sonia M. Goltz](#), Professor, Organizational Behavior

Dr. [Dana M. Johnson](#), Professor, Operations and Supply Chain Management

Dr. [Andre Laplume](#), Assistant Professor of Management

Dr. [Saurav Pathak](#), Rick and Jo Berquist Assistant Professor of Entrepreneurship and Innovation

Dr. [Latha Poonamallee](#), Assistant Professor, Organizational Behavior

Dr. [Manish Srivastava](#), Assistant Professor of Strategic Management and Innovation

Dr. [Tang Wang](#), Charles C. and John G. Gates Assistant Professor in Entrepreneurship and Innovation

Mr. [Roger Woods](#), Lecturer, Operations Management

10. Available Needed Equipment

All equipment required exists within the SBE labs and classrooms.

11. Program Costs

No additional faculty will be required.

12. Space

No new labs or classroom is required.

13. Policies, Regulations, and Rules

None are required.

14. Accreditation Requirements

The B.S in Management is accredited by AACSB International. The process and criteria for maintaining accreditation is unaffected by the proposed change. The changing to a B.S. in Management with a Concentration in Entrepreneurship will be automatically accredited and subjected to periodic review by AACSB.

15. Internal Status of Proposal

Faculty School of Business and Economics,

Dean, School of Business and Economics,

Provost,

Deans,

University support units,

University Senate,

Academic Affairs Officers,

Board of Control

16. Planned Implementation Date: Fall semester 2013

Introduced to Senate: 06 March 2013

Wordsmithed in red: 25 March 2013

Approved by Senate: 27 March 2013

Approved by Administration: 03 April 2013

Approved by BOC: 03 May 2013

Approved by State: 06 June 2013

[1] www.kauffman.org/uploadedfiles/entrep_high_ed_report.pdf

[2] <http://www.kauffman.org/entrepreneurship/teaching-entrepreneurship-in-colleges.aspx>

[3] <http://bostinno.com/2011/06/20/can-entrepreneurship-be-taught-a-babson-college-study-says-yes/>

[4] <http://www.kauffman.org/entrepreneurship/teaching-entrepreneurship-in-colleges.aspx>