

**COORDINATING COMMISSION
FOR POSTSECONDARY EDUCATION**

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PROPOSAL FOR NEW INSTRUCTIONAL PROGRAM
Form 92-40

SECTION I

Institution Submitting Proposal: University of Nebraska at Omaha

Title of Program: IT Innovation

CIP Code: 11.0199

Organizational Unit in which program will be located:

Office of Graduate Studies
School of Interdisciplinary Informatics
College of Information Science and Technology

Name of contact person in the event additional information is needed: Dr. Susan M. Fritz

Telephone: 402-472-5242

Degree, Diploma, or Certificate to be offered (use separate submittal for each level):

Master of Science in IT Innovation

Proposed date to initiate program: When approved by the Coordinating Commission

List the location(s) where this program will be offered: UNO

If the program has a projected ending date, please so indicate:

Date approved by Governing Board: January 25, 2019

(Attach all documents related to this proposal upon which the Governing Board made its decision to approve the proposal.)

Chief Executive Officer's or other Authorized Officer's signature: _____


Susan M. Fritz

TO: The Board of Regents Addendum X-A-1
Academic Affairs

MEETING DATE: January 25, 2019

SUBJECT: Creation of the Master of Science (MS) in IT Innovation to be administered by the Office of Graduate Studies, School of Interdisciplinary Informatics, and College of Information Science and Technology at the University of Nebraska at Omaha (UNO)

RECOMMENDED ACTION: Approval is requested to create the Master of Science in IT Innovation to be administered by the Office of Graduate Studies, School of Interdisciplinary Informatics, and College of Information Science and Technology at UNO

PREVIOUS ACTIONS: April 24, 2009 – The Board approved the creation of the Bachelor of Science in IT Innovation at UNO.

EXPLANATION: UNO proposes to establish a Master of Science degree in the growing area of IT Innovation (ITIN). ITIN is the interdisciplinary practice of conceptualizing, designing, prototyping, and fielding an IT-based product or service. It focuses on the technological and entrepreneurial facets of IT products. IT Innovation brings together aspects of Computer Science and Management Information Systems with other disciplines that inform IT design and application in health care, business, psychology, art, music, or public administration, among others.

The IT Innovation degree, consisting of 36 credit hours, combines design, critical thinking, and creativity with leadership, collaboration, and business management. The degree program would have a “thesis” option and a “capstone” option. Students who want to actively engage in ITIN research will choose the thesis option. Students desiring a more applied culmination to their studies will choose the capstone option.

No reallocation or hiring of additional faculty are expected to be required to offer this degree program.


This proposal has been approved by the Council of Academic Officers and the Executive Graduate Council. This proposal also has been reviewed and recommended for approval by the Academic Affairs Committee.

PROGRAM COST: \$24,000 for Year 1; \$280,800 for five years

SOURCE OF FUNDS: Tuition and fees; grant funding

SPONSORS: B.J. Reed
Senior Vice Chancellor for Academic Affairs

Jeffrey P. Gold, Chancellor
University of Nebraska at Omaha

RECOMMENDED: 
Susan M. Fritz
Executive Vice President and Provost

DATE: December 20, 2018



**PROPOSAL FOR THE CREATION OF
A MASTER OF SCIENCE DEGREE IN IT INNOVATION (MSITIN)**

Proposed by: The University of Nebraska at Omaha (UNO)

Proposed program: IT Innovation (ITIN)

Proposed degree: Master of Science

Other programs in this field at UNO: BS in IT Innovation

CIP code: 11.0199

Administrative units: Office of Graduate Studies,
School of Interdisciplinary Informatics (SI2),
College of Information Science & Technology (IS&T)

Proposed delivery method: Hybrid

Date approved by governing board:

Proposed Start Date: Upon approval

1. Description and Purpose of the Proposed Program

The University of Nebraska at Omaha (UNO) proposes to establish a Master of Science degree in the growing area of IT Innovation (ITIN). ITIN is the interdisciplinary practice of conceptualizing, designing, prototyping, and fielding an IT-based product or service. It focuses both on the technological and entrepreneurial aspects of IT products. IT Innovation brings together aspects of Computer Science and Management Information Systems with other disciplines that inform IT design and application such as health care, business, psychology, music, or public administration, among others.

The ITIN discipline is many-faceted by definition. It integrates and interfaces a diverse set of disciplines in addition to information technology. For example, ITIN relates to computer science in such topics as mobile application development and user interface design. ITIN impacts

Management Information Systems information systems design approaches and techniques. ITIN blends with art and graphic design in the area of user experience design. ITIN infuses psychology in the area of creativity, innovation, and collaboration. ITIN has special application-focus relationships with History, Music, Art, Theater, Agriculture, Dentistry, Game Design, Criminal Justice, Marketing, Geography, Athletics, Nutrition, Library Sciences, Biology, and others. Finally, ITIN has special ties to Entrepreneurship as IT innovations have unique characteristics that impact the way a start-up business is set up, funded, and operated. In short, there is a necessary level of collaboration and coordination between the proposed ITIN degree program and many other units. The degree program outlined here reflects this, with some courses being offered through the College of Communication, Fine Arts, and Media, the College of Business Administration, and the College of Arts & Sciences. Thus, the degree program will necessitate working closely with Entrepreneurship, the School of Art, the School of Music, and others to ensure the most up-to-date information is presented in the course work where it crosses these interdisciplinary boundaries.

Because of the wide variety of subject areas to which ITIN can be applied, the proposed degree has been constructed to have different elements, ranging from strongly technical-focused to others focused on social and entrepreneurial skills. From this perspective, the IT Innovation degree has a distinctly different focus than other related degrees, such as MBA-Entrepreneurship, Management Information Systems (MIS), or Computer Science. For example, the IT Innovation degree is uniquely different from other degrees that have an 'Entrepreneurship-flavor'. A survey of Entrepreneurship degrees across the nation shows that such degrees typically infuse a traditional business curriculum with a limited number of courses that predominantly focus on the business perspective of a start-up company.

IT Innovation takes a more holistic and immersive approach to idea/product development: It focuses on the ideation, design, and development of an IT-based innovation, as well as on the entrepreneurial realization of this innovation as a profitable or sustainable product or service. Compared to a MIS degree, IT Innovation provides a stronger focus on design thinking, idea development, and interdisciplinary collaboration. MIS degrees have a stronger focus on technical foundations, technical development, and business practices. A strong technical focus is what sets Computer Science apart from IT Innovation. This degree would therefore supplement, not replace, the degrees already in place within the university.

	Business Development and Entrepreneurship	Business Practices	Technical Expertise	Idea Development	Design Thinking	Interdisciplinary Collaboration
MBA	●	●		◐		
MIS		◐	◐		◐	◐
CS			●		◐	◐
ITIN	◐		◐	●	●	●

IT Innovation focuses on the application of existing technologies to new problems and opportunities to create new value propositions. The IT Innovation degree combines design, critical thinking, and creativity with leadership, collaboration, and business management. In practice, this translates into a 36 credit hours curriculum, consisting of a set of core courses that encompass the ITIN common Body of Knowledge and non-core courses that are designed to allow students to explore a wide-variety of areas to which the core concepts are applicable. The degree program has a “thesis” option and a “capstone” option. Students who want to actively engage in ITIN research, report the results of the research and potentially contribute to knowledge in the subject area will choose the thesis option. Students who are interested in pursuing a PhD are also thesis-option candidates. Students desiring a more applied culmination of their studies will choose the capstone option. In the capstone class students will develop and implement an actual IT innovation and present their results. Capstone students are not expected to write a full thesis on their work.

The remainder of the proposal details the program of study, the faculty, staff, and other resources, the need and positioning of the proposed program, the unique nature of the proposed program, and the alignment of the degree with the priorities and strategic direction of UNO, University of Nebraska, and the State of Nebraska.

2. Program of Study

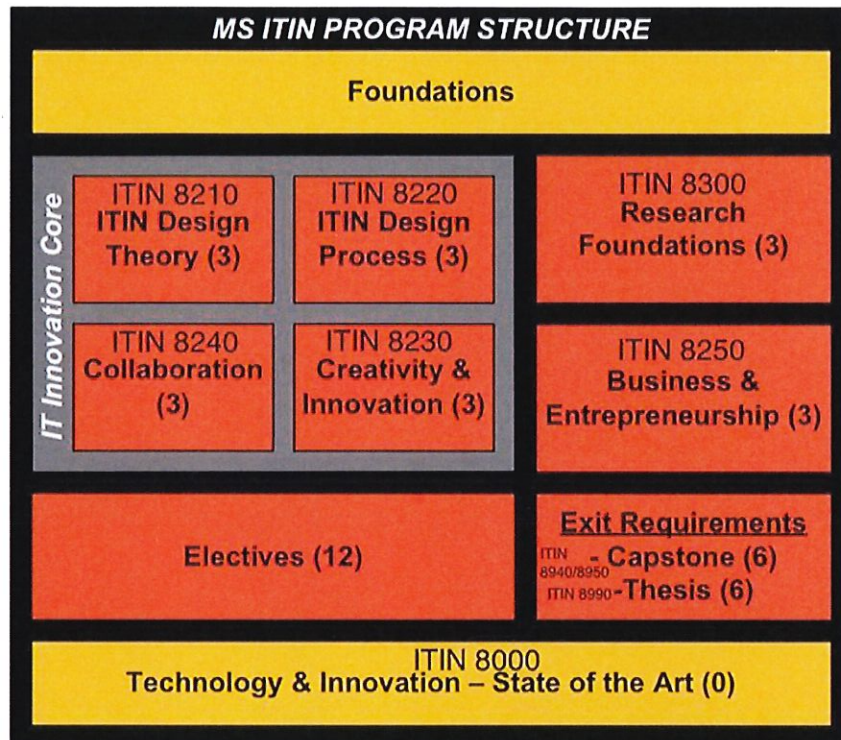
2.1 Program Overview

The proposed Master of Science in ITIN degree consists of 36 hours of course content. If a student elects the thesis option, the student has a requirement of 30 hours of content plus 6 hours of thesis work. Because of the integrated program, there are several ITIN classes that are cross-listed as both undergraduate and graduate.

The program develops innovation knowledge and skills along five broad categories:

1. Design science, design thinking, and design practice (ITIN8210 ITIN Design Theory and ITIN8220 Design Process).

2. Higher order thinking, creative, cognitive, and behavioral skills (ITIN8240 Collaboration and ITIN8230 Creativity & Innovation).
3. ITIN 8250 Business development (Business & Entrepreneurship).
4. Research (ITIN8300 Research Foundations, ITIN8990 Thesis).
5. Application domain specific knowledge and skills (Electives: ITIN8100 Technology & Innovation, ITIN8940 Capstone I, and ITIN8950 Capstone II).



2.2 Admission Requirements

The following requirements need to be met for admission into the MS in ITIN program:

1. Completed graduate application form for admission.
2. A detailed résumé indicating work experience and background.
3. A writing sample from work or previous academic experiences. Alternatively, if no writing sample is available, applicants should submit a two-page double-spaced word-processed essay that addresses the following two topics:
 - a. Discussion of two accomplishments that demonstrate potential for success in the graduate program.
 - b. Discussion of unique personal qualities and life experiences that distinguish the applicant from other applicants to the graduate program.
4. Three letters of recommendation from references who can evaluate the applicant's work and/or academic achievements.

5. Official transcripts of all college coursework. The minimum undergraduate grade point average requirement for the MS in ITIN program is 3.00 or equivalent score on a 4.00 scale. All applicants must have the equivalent of a 4-year undergraduate degree.
6. International applicants who do not have a baccalaureate or equivalent degree from an English-speaking institution of higher education are required to submit TOEFL.
 - a. The minimum TOEFL requirement for the MS in ITIN program is 550 (paper-based) / 213 (computer-based) / 79 (Internet-based).

2.3 Admission Criteria & Rationale

All applicants are considered on an individual basis. All applicants for the proposed MS in ITIN program must have earned a bachelor's degree from a regionally-accredited four-year institution of higher learning or the equivalent foreign institution and earned a GPA of 3.00 or higher (on a 4.00 scale). Since many factors influence the success of a graduate student, factors such as an applicant's maturity, motivation, employment history, writing samples, work experience, and other accomplishments will also be considered in making admission decisions. In addition, for international applicants, the TOEFL score will be used along with other factors outlined above.

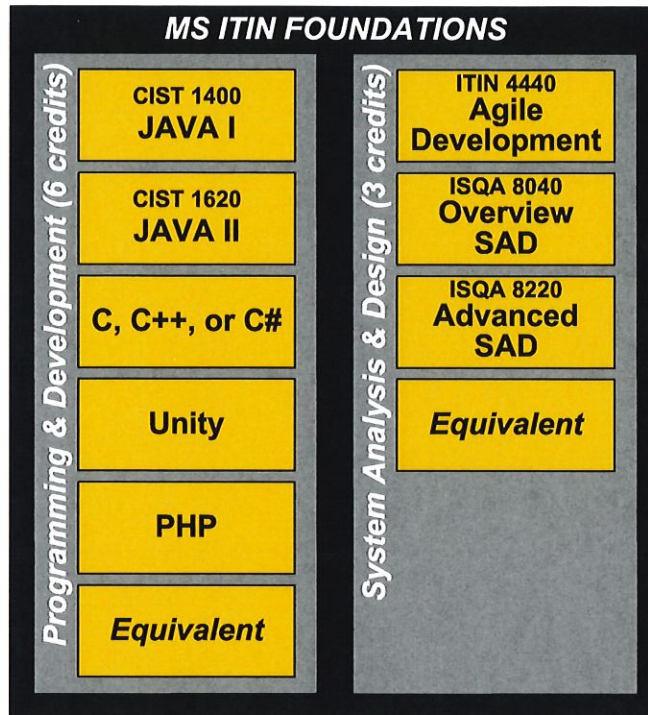
Prerequisite knowledge and courses ensure all students in the MS ITIN program have a solid groundwork upon which to build the rest of the program. These courses not only provide essential skills for other courses in the program, but they also contain a distinct body of knowledge that is an important part of the ITIN professional's education. All prerequisite courses are required for all students. Students who have obtained an undergraduate ITIN degree will typically already have this knowledge. In such cases, most, if not all, prerequisite courses are usually waived. Students with undergraduate degrees in other disciplines, including Computer Science or Management Information Systems, will usually require one or more prerequisite courses.

Occasionally, a student's work experience may be sufficient to waive one or more prerequisite courses. Waivers for prerequisite courses are granted by the chair of the graduate program committee upon the recommendation of the faculty member who is responsible for the respective course. Students requesting a waiver for a course should be prepared to meet with a faculty member and answer questions in the knowledge area of the prerequisite. They should bring any relevant transcripts, course syllabi, course material, or evidence of practical experience to the meeting. Some prerequisite courses may have an option for testing out.

Prerequisite courses cannot be used to satisfy the 36 credit hours required for the proposed MS in ITIN. Students who have not completed all the prerequisite course requirements may be admitted on a provisional status until those requirements have been completed. All prerequisite courses must be completed prior to, or concurrent with, the first six hours of MS in ITIN graduate course

work. Barring prerequisite knowledge on the part of the student, courses necessary for entry into the MS in ITIN include:

- 6 credit hours of Programming & Development courses, for example Java, C, C++, C#, Unity, or PHP.
- 3 credit hours of System Analysis & Design courses, for example Agile Development, Overview Systems Analysis & Design, or Advanced Systems Analysis & Design.



These courses are an illustrative sample, not a prescriptive direction.

2.4 Quality of Work Standards

The Graduate College's Quality of Work standards shall be applied to prerequisite courses as well as courses taken as part of the degree program. In particular, the ITIN Program Committee will recommend to the Graduate College that:

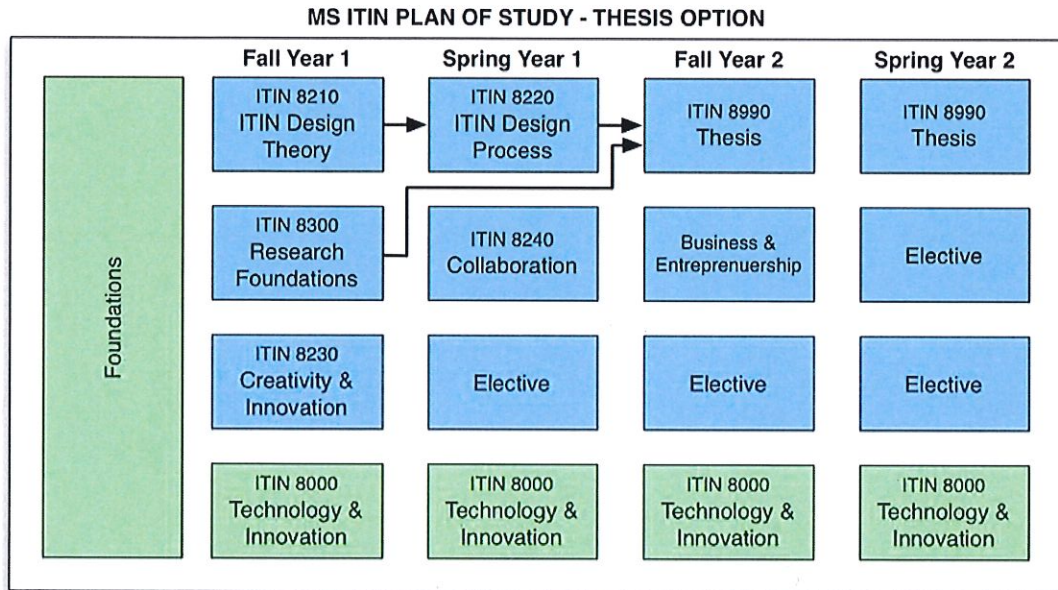
1. Students receiving a grade of "C-" or below on any prerequisite course will be dismissed from the program or, in the case of unclassified or non-degree students, be automatically denied admission.
2. Students receiving a grade of "C+" or "C" in any prerequisite course will be placed on probation or dismissed from the program by recommendation of the program committee.

Non-Degree Students: Students interested in taking courses without admission to the MS in ITIN degree program may do so with permission of the ITIN Program Committee.

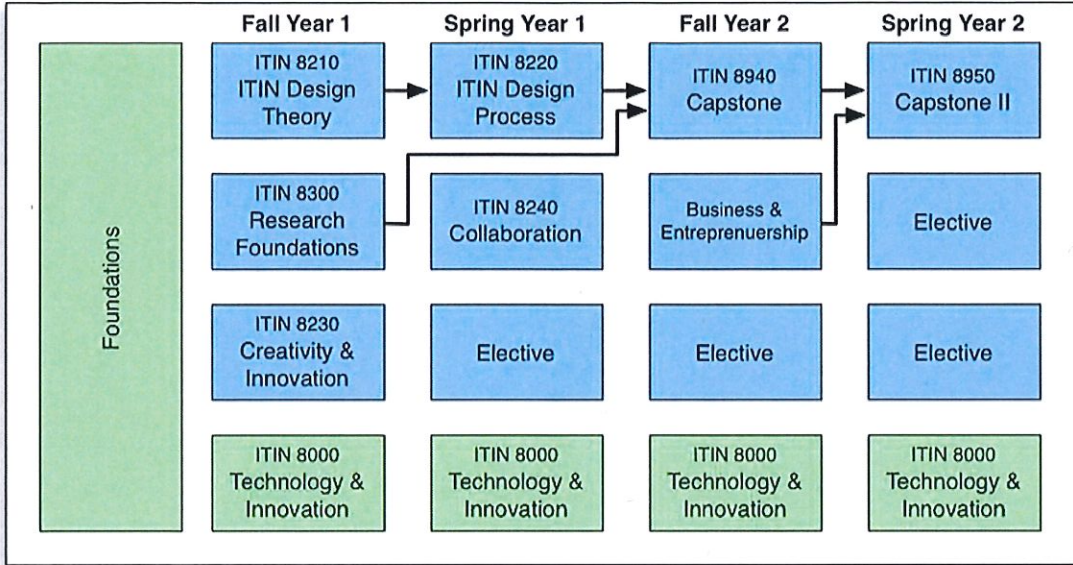
2.5 Plan of Study

Full-time students can complete the program in two years. Part-time students can complete the proposed program in three years. To accommodate course interdependencies and course planning, students are expected to join the program during the Fall semester. Students can start during the Spring semester by taking foundation classes if necessary, or by taking a lighter course load to spread their program over 2.5 years. The standard plans of study for full-time and part-time students are provided below, including both the thesis and capstone options. Arrows between classes designate prerequisites. Please note that the depicted programs of study are subject to change over time as the program develops.

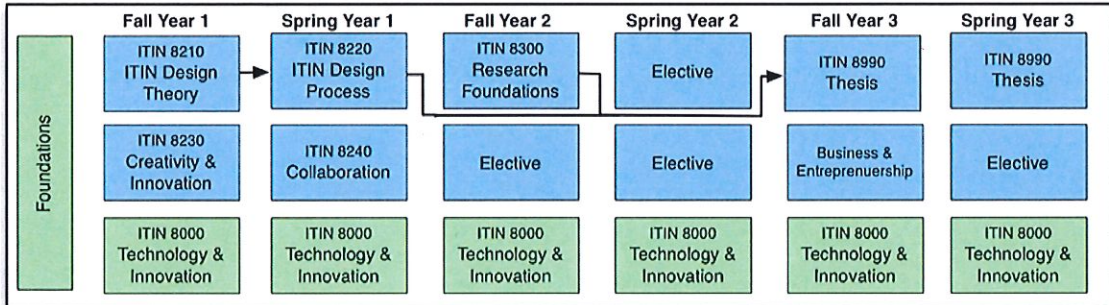
Electives need approval by the graduate program committee to ensure that the chosen elective supports the capstone or thesis topics.



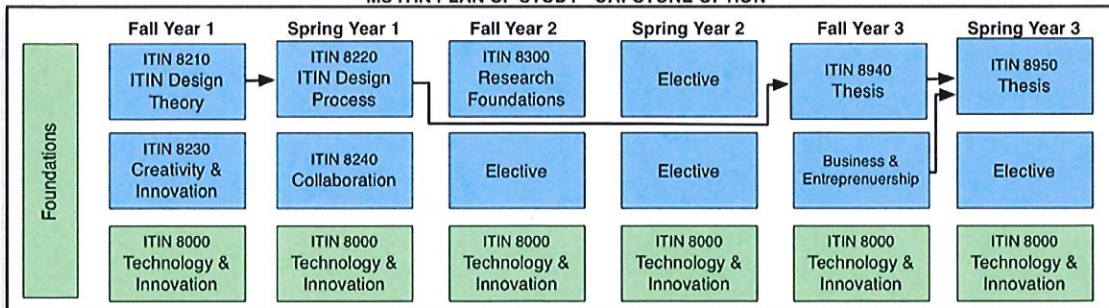
MS ITIN PLAN OF STUDY - CAPSTONE OPTION



MS ITIN PLAN OF STUDY - THESIS OPTION



MS ITIN PLAN OF STUDY - CAPSTONE OPTION



3. Faculty, Staff, and Other Resources

3.1 Faculty Required

Shown below is a list of the current faculty who are involved in teaching courses related to the IT Innovation discipline. This list is sufficient for teaching the coursework within the proposed master's degree. Please note that all current faculty are expected to teach the capstone classes and supervise theses. No further reallocation or hiring of faculty is expected to be required. While additional course materials will need to be developed to support the proposed program, there is no cost associated with the creation of the new courses.

Faculty	Rank	Area of Expertise/Coursework
Ken Dick, PhD	Senior Research Fellow	ITIN8220 – ITIN Design Process ITIN8230 – Creativity & Innovation
Douglas Derrick, PhD	Associate Professor	ITIN8210 – ITIN Design Theory ITIN8990 – ITIN Capstone ITIN8000 – Technology & Innovation ITIN8230 – Creativity & Innovation
Christine Toh, PhD	Assistant Professor	ITIN8210 – ITIN Design Theory ITIN8220 – ITIN Design Process ITIN8300 – Research Foundations
Margaret Hall, PhD	Assistant Professor	ITIN8300 – Research Foundations
Gina Ligon, PhD	Associate Professor	ITIN8240 – Collaboration
Jeremy Baguyos, MM	Professor	ITIN8990 – ITIN Capstone ITIN8000 – Technology & Innovation
Russ Norman, MFA	Associate Professor	ITIN8210 – ITIN Design Theory ITIN8220 – ITIN Design Process
Ann Fruhling, PhD	Professor	ITIN8300 – Research Foundations ITIN8000 – Technology & Innovation
Dale Eesley, PhD	Associate Professor	Business & Entrepreneurship

Summary of faculty qualifications as they pertain to covering the courses that will be offered in the MS in ITIN:

Historically, groups within the Business School and Fine Arts/Music school were split off and formed into this program, and these faculty are the ones currently collaborating within the School of Interdisciplinary Informatics. Later, more faculty were added. Disciplinary strengths of entrepreneurship, graphic arts, and social media were also identified. If you consider Design

Thinking's major components – Usability/Desirability, Feasibility, and Viability -- the faculty have the major bases covered. Dr. Derrick has information systems, business (MBA) entrepreneurship, and information sciences. Dr. Toh has engineering: design and creativity, cognitive psychology and industrial engineering background. Dr. Hall has a policy background, sociology and social computing/research expertise, and Profs. Baguyos and Nordman have art background (music and visual arts respectively). Dr. Ken Dick brings his vast experience with start-ups in addition to his technical core in telecommunications.

3.2 Additional Physical Facilities Needed

IS&T has state-of-the-art laboratories and facilities to fulfill the needs of the proposed graduate program. The facilities include the Applied Innovations Lab and the Music Technology Innovation Lab. The UNO Criss Library has an extensive digital collection that is more than adequate for MS in ITIN graduate students. No additions are required to support the proposed program.

3.3 Budget Projections

The proposed degree will not require any additional faculty. We currently have adequate FTEs in the ITIN program to meet the needs of the proposed program. New faculty lines may be needed if the demand of the program increases drastically. This is not expected to occur within the first five years of operation.

One staff position is currently relying on grant funding, which will run out in Year 4. The expectation is to secure additional grant funding from Year 4 onwards. To assist with curricular support and outreach, two graduate assistants will be required, one starting in Year 1 and the other being added in Year 3. The GAs will rely on grant funding. Based on past successes in acquiring grant funding, the ITIN Program will fund the staff position and two graduate assistantships with \$120,000/year drawn from grants that the ITIN lab is expected to receive.

4. Evidence of Need and Demand

There is a great demand for ITIN entrepreneurs and professionals locally, regionally, and nationally, and their impact on the economy is significant. The United States Department of Labor Bureau of Labor and Statistics Occupational Outlook for all “computer occupations” is an increase in the number of jobs, by 13.1% between 2016 and 2026. Specifically, software development (applications) occupations will see an increase of 30.7%. Web developers will see an increase of 15%.¹

Locally, according to the Omaha Chamber of Commerce, there is still a tremendous demand for technology employees in Nebraska and not enough supply. From their report: “NEBRASKA’S

¹ https://www.bls.gov/emp/ep_table_107.htm

TECHNOLOGY SECTOR IS GROWING AT 9% ANNUALLY, WITH OVER 600 OPEN IT JOBS ON ANY DAY.” Furthermore, there are 43,280 tech positions open in Nebraska, and there is a 18.8% growth rate in the sector overall (nationwide).

Most job growth originates from start-ups². In fact, most net-job creation in the US occurs in firms that are five years old or younger³. Most growth in the US economy, especially growth in per-capita incomes, stems from increases in knowledge and innovation. From this perspective, Nebraska currently is 27th in the nation⁴. Yet, Nebraska is 18th in the nation in terms of state entrepreneurship⁵, demonstrating the potential for growth. In fact, Omaha, NE, is consistently rated as a national leader in cities to launch a start-up⁶.

Furthermore, while innovation and start-ups are often linked to urban areas, the need for innovation extends well beyond the boundaries of major cities. There is a great need and untapped potential for innovation in the rural Great Plains where innovation could and should span the private, public, and nonprofit sectors. The Rural Futures Institute therefore calls for fostering an engaging educational culture focusing on innovation within our universities to prepare students for the rapidly changing world of the future⁷. However, the need for innovation and innovation education goes beyond the local and regional perspective. Increasing the innovative capacity of young Americans is considered to be key for sustained success in a global knowledge economy⁸. Consortia of leading universities have argued that, since innovation is the main driver for long-term economic growth, a key educational challenge is to teach and transfer skills to innovate in all its forms⁹.

In addition to the national interest in IT innovation, local businesses are increasingly reliant on graduates with IT innovation skills. Many high-tech industries including eBay, PayPal, and others in the Fortune 500 have offices in Nebraska. The greater Omaha metropolitan area is also home to numerous other industries where innovation is paramount to create and sustain a competitive advantage, such as the Internet/Social Media industry (Yahoo, Google), IT services (First Data, West, CSG), financial services (First National Bank, Mutual of Omaha, Woodmen of the World), and transportation (Union Pacific Rail Road, Werner). We have had repeated requests for this degree from The Startup Collaborative, First National Bank, Union Pacific,

² http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1759548

³ <http://smallbiztrends.com/2010/03/entrepreneurial-job-creation-statistics-are-an-economic-rorschach-test.html>

⁴ <http://www2.itif.org/2017-state-new-economy-index.pdf>

⁵ http://cba.unl.edu/outreach/bureau-of-business-research/research/documents/BIN_August_2014.pdf

⁶ <http://money.cnn.com/gallery/smallbusiness/2014/07/09/best-cities-to-launch-startup/3.html>;
<https://livability.com/topics/business/5-cities-with-enticing-startup-incentives>; <https://www.inc.com/john-brandon/the-top-city-to-start-a-tech-company-is-nowhere-near-silicon-valley.html>

⁷ <http://ruralfutures.nebraska.edu/wp-content/uploads/2012/09/AboutRuralFutures.pdf>

⁸ <https://www.whitehouse.gov/issues/education/k-12/educate-innovate>

⁹ Scott, R., & Vincent-Lancrin, S. (2014), Educating Innovators and Entrepreneurs. In: Cornell University, INSEAD, and WIPO (2014): The Global Innovation Index 2014: The Human Factor In innovation, Fontainebleau, Ithaca, and Geneva. (http://www.wipo.int/export/sites/www/econ_stat/en/economics/gii/pdf/2014/gii_2014_chapter_3.pdf)

Omaha Steaks, Werner Trucking, First Data and US Strategic Command. Similarly, our external curriculum advisory board has urgently recommended its creation. The startup community in Omaha has also pushed for the creation of this degree from companies like JB Gaming, Appsky Labs, GuidedMedia, InifinityKick, and Mauve (all of these companies were started by IT Innovation graduates).

The above clearly shows a growing need for highly educated IT Innovation experts. Currently, the School for Interdisciplinary Informatics (Si2) offers a unique undergraduate degree in IT Innovation. Si2's ITIN staff consist of terminal-degreed IT Innovation experts and professionals with industry background. Additionally, existing current teaching and research facilities such as the IT Innovation Studio, the Applied Innovation Lab, and the Intermedia/Multimedia Classroom are state-of-the-art and can be used for the majority of new courses in the new degree program. UNO possesses both the existing expertise and infrastructure to offer the Master of Science Degree in IT Innovation.

The College of Information Science & Technology currently has an undergraduate degree in ITIN with an enrollment of 57 students. This enrollment has shown an increasing trend during the past couple of years. For the period of 2010 to 2015, enrollment numbered 18, 23, 29, 41, 57, and 80 respectively. Undergraduate ITIN enrollment is steadily increasing, but the demand is outpacing the supply at this time. Upon graduation these students will fill key positions within local and national business or start their own business. For example, companies like ConAgra were featured on NPR as an employer that looks for graduates with skills that represent an amalgamation of computer science, information systems, and skills provided by the liberal arts¹⁰. Other companies that have hired ITIN graduates include Mutual of Omaha, Union Pacific, Werner Trucking, Omaha Steaks, Appsky Labs, CRI, and Racenote.

While ITIN alumni and current upper-level majors have expressed a strong interest in a MS in IT Innovation degree, they currently have no means to pursue graduate ITIN education within the University of Nebraska system. Adding the proposed master's degree in addition to the existing ITIN undergraduate program will allow these students to continue their education and prepare to be highly skilled IT innovators that can fuel the local, national, and global economy. Within the first five years of the program, we expect to graduate 60 students. The first cohort of students would most likely consist of recent local graduates who have been in the workforce for two to three years and have expressed interest in returning for a graduate degree in a technology-based creative field.

Cohorts for subsequent years will be recruited regionally and nationally. The program will be at capacity with a maximum of 50 students enrolled.

¹⁰ <http://netnebraska.org/article/news/liberal-arts-degrees-grow-jobs-conagra>

5. Partnerships with Businesses

The existing undergraduate program enjoys important partnerships with organizations external to the University. These partnerships are critical to keeping students abreast of the latest IT Innovation issues and will benefit future master's students in the same way. Si2 fosters excellent working relationships with many local organizations, including but not limited to First Data, Union Pacific, ConAgra, USSTRATCOM, CRI, SkyVu, Dundee Venture Capital, Scott Technology Capital, Vetter Health Sciences, ACI Worldwide, ISC2, Omaha Chamber of Commerce, and the Nebraska Arts Council. Si2 also has conducted innovation-related research in partnership with local, regional, and national organizations such as USSTRATCOM, DHS, First Data, NSF, MindMixer, IBM, Woodmen of the World, American Telemedicine Association, Five Nines Tech Group, and the Nebraska Arts Council. Ongoing relationships with such entities are crucial to the success of the ITIN program, and will also be leveraged for the proposed MS in IT Technology.

The proposed program provides continued opportunities for business collaboration. The School of Interdisciplinary Informatics (Si2) has provided interns and employees to SkyVu. Conversely, SkyVu has provided industry advisers to Si2 and UNO students in the capstone courses. On a national level, Si2 has partnered with Smule from Palo Alto, California. Smule employees have visited our campus to beta test their new products and they have served as advisers to Si2 students. In addition, the First Data Innovation Lab from Atlanta, Georgia continues to mentor IT Innovation students including those students who wish to apply their artistic sensibilities to design principles. Locally, through a collaborative curriculum in the undergraduate program, students have been able to secure positions with TPG Telemedia and Straight Shot. The United States Strategic Command, Union Pacific, and Omaha Steaks have funded research projects for students. These organizations look to UNO for unique employees that are innovative, creative, and versed in technology. Recent graduates have also created start-ups, such as:

- iTrapp / Appskey - Taylor Korensky
- Guilded Media - Mike Santos
- Cuso Sports Network - Callen Hedgren
- JB Gaming - Jeff Brooks
- InfinityKick - Danny Pachman
- Proof Audits Incorporated - Spencer Robinson
- Hookline – Zane Jones

6. Collaborations within the University

The ITIN discipline is many-faceted by definition. There is a necessary level of collaboration and coordination between the ITIN degree program and many other units at UNO. The degree program outlined reflects this, with courses being offered through the College of Communication, Fine Arts, and Media, the College of Business Administration, and the College

of Arts and Sciences. Thus, the degree program will necessitate working closely with Entrepreneurship, the School of Art, the School of Music, and others to ensure the most up-to-date information is presented in the course work where it crosses these interdisciplinary boundaries. In addition, ITIN faculty collaborate with UNMC on research relating to health care, and this collaboration is expected to increase with the creation of the proposed program. Numerous ITIN faculty members regularly collaborate with colleagues at UNL, UNMC, and UNK.

7. Collaborations with Higher Education Institutions and Agencies External to the University

There have been several collaborations with external organizations and higher education institutions. In the past, there have been collaborations with the Stanford's Center for Computer Research in Music and Acoustics with networked telematics performances with the Stanford Laptop Orchestra. Currently, Stanford faculty are advising our students.

The School of Interdisciplinary Informatics fosters excellent working relationships with many local organizations, including but not limited to FUSSTRATCOM, SkyVu, Dundee Venture Capital, Scott Technology Capital, Vetter Health Sciences, ACI Worldwide, ISC2, Omaha Chamber of Commerce, and the Nebraska Arts Council. These collaborations also function as networking opportunities for students in the proposed MS program.

8. Centrality to Role and Mission of the Institution

The proposed degree program addresses the mission of the university in many ways. The proposed program will be academically excellent through its rigorous and interdisciplinary curriculum. The proposed program is designed to align with workforce development needs. In addition, as students are prepared for the global community, a degree plan that offers a more broad-based curriculum is desirable. The proposed program is student-centered, and has the potential to attract a different population of student to UNO. Finally, the students' activities within the degree particularly lend themselves to community engagement -- not only through internships and business partnerships, but also through ethnographic and empathy-based research, including design-thinking and in-depth interviews with stakeholders.

9. Consistency with the University of Nebraska Strategic Framework

The proposed program is consistent to the University of Nebraska Strategic Framework, specifically:

1. The University of Nebraska will provide the opportunity for Nebraskans to enjoy a better life

through access to high quality, affordable undergraduate, graduate and professional education.

The MSITIN program recognizes the centrality of the integration of technology, creativity, interdisciplinary collaboration, innovation, and the arts in the 21st century workforce. Students will have access to unique and high-level training that can prepare them for flexible career options upon graduation.

2. The University of Nebraska will play a critical role in building a talented, competitive workforce and knowledge-based economy in Nebraska in partnership with the state, private sector and other educational institutions.

The IT Innovation area has collaborated with a wide-range of institutions ranging from area K-12 schools, non-profit organizations, government agencies like the Nebraska Arts Council, and corporations like First Data. The proposed MS program will strengthen those collaborations. Students will have access to unique and high-level training that can prepare them for flexible career options upon graduation.

3. The University of Nebraska will pursue excellence and regional, national and international competitiveness in research and scholarly activity, as well as their application, focusing on areas of strategic importance and opportunity.

The MSITIN program mirrors efforts that have been practiced for decades by the MIT Media Lab. It will provide students the opportunity to do important research in collaboration with partnering businesses.

10. Avoidance of Unnecessary Duplication

Nationally, there is a growing demand for innovation and innovative thinking. Many universities are recognizing the need to combine innovation / design thinking and computational sciences into graduate level programs, but few of them are able to do so the way UNO is set up to execute the curriculum. The reason that UNO is unique is due to the establishment of the School of Interdisciplinary Informatics (Si2). Rather than forcing together different disciplines and their individual departments, the Si2 program itself consists of faculty of different disciplines within the same unit. UNO, in general, has been successful in eschewing the academic silos that often separate disciplines in other universities. The proposed program would be the only one in Nebraska and surrounding states.

There are different flavors of graduate level technology innovation degrees, organized by what kind of college (and their core skill set) is offering the program: STEM disciplines, business schools, human-computer interaction programs, and creativity studies. Since it is a STEM degree coming out of a STEM college, with a focus on technology innovation, there are few programs

that bear similarity to UNO's proposed MS in IT Innovation program. A survey of North American schools yields six prominent examples, none of whom overlap with UNO's market because of geography and cost (the similar programs are much more expensive than UNO). Therefore, UNO's unique value proposition among the current players in this emerging STEM field is cost savings for the student and proximity.

Current similar programs (STEM programs offering an innovation degree with tech as the core skill set) include the following:

Rochester Institute of Technology

- <https://www.rit.edu/programs/entrepreneurship-and-innovative-ventures-ms>
- MS in Entrepreneurship and Innovative Ventures
- Difference from UNO's MS in IT Innovation: The program at R.I.T. is similar to the UNO MS in ITIN, however, there are three main differences: geographically, it is located very far away from UNO, yearly tuition is \$42,000 (vs. UNO's \$6,592 in-state/\$15,664 out-of-state), and UNO's focus is on design. R.I.T.'s program leans towards business.

University of Rochester

- <http://www.rochester.edu/team/>
- Master of Science in Technical Entrepreneurship and Management
- Difference from UNO's MS in IT Innovation: The program at University of Rochester is similar to the UNO MS in ITIN, however, there are two main differences: geographically, it is located very far away from UNO, and yearly tuition is \$61,600 (vs. UNO's \$6,592 in-state/\$15,664 out-of-state).

Carnegie Mellon

- <https://www.cmu.edu/iii/degrees/>
- Master of Integrated Innovation for Products & Services
- Difference from UNO's MS in IT Innovation: The program at Carnegie Mellon is similar to the UNO MS in ITIN, however, there are two main differences: geographically, it is located very far away from UNO, and yearly tuition is \$47,600 (vs. UNO's \$6,592 in-state/\$15,664 out-of-state).

University of Washington, Seattle

- <https://www.techinnovationdegree.uw.edu/>
- Master of Science in Technology Innovation
- Difference from UNO's MS in IT Innovation: The program at University of Washington is similar to the UNO MS in ITIN, however, there are two main differences: geographically, it is located very far away from UNO and yearly tuition is \$28,320 (vs. UNO's \$6,592 in-state/\$15,664 out-of-state).

University of South Carolina

- https://sc.edu/study/colleges_schools/engineering_and_computing/study/entrepreneurialengineering/index.php
- M.S. in Technology Innovation and Entrepreneurial Engineering
- The program at University of South Carolina is similar to the UNO MS in ITIN, however, there are three main differences: geographically, it is located very far away from UNO, yearly tuition is \$28,400 (vs. UNO's \$6,592 in-state/\$15,664 out-of-state), and the SC program draws its students from the ranks of engineering.

Purdue University

- <https://polytechnic.purdue.edu/degrees/ms-technology-leadership-and-innovation>
- MS in Technology Leadership and Innovation, Open Digital Innovation specialization
- The program at Purdue University is similar to the UNO MS in ITIN, however, there are three main differences: geographically, it is located far enough away from UNO that UNO will not be competing for the same students, yearly tuition is \$28,800 out-of-state (vs. UNO's \$6,592 in-state/\$15,664 out-of-state), and the Purdue program, at its heart, is a leadership studies program.

Other similar programs that were left off of this list include Yale's CITY program. Yale's CITY program does not directly offer degree programs, and that's why they and other similar programs that were more "centers" rather than degree programs were not included in our list of competing programs. A more venerable and established program than Yale, Georgia Tech's Design Bloc has many traits that UNO aspires to, however, like Yale CITY, they do not appear to directly offer a masters program. Similarly, as prestigious and as important as Stanford's d-school is, they also do not directly offer a Masters program in ITIN. And for this reason, they were all left off of our list. Northwestern's Segal Design Institute is another admirable program, but they are housed in an engineering school. The MS in ITIN is housed in a school where CS is the technical core.

11. Consistency with the Comprehensive Statewide Plan for Postsecondary Education

One of the predominant goals of the Nebraska Statewide Plan for Postsecondary Education is to make certain that postsecondary education develops graduates who can both contribute and succeed in a highly technological global community. The proposed program strengthens that goal by producing not only highly-skilled and creative graduates, but also graduates who have the ability and proven record of working collaboratively, creative problem solving, and assuming responsibility for their own decisions. Each graduate will have applied significant thought to the program's artistic decision-making process and will complete their study with an accurate idea of what it takes to achieve success, as a technology-mediated artist that is part of a global community.

Empowering the students with multiple creative and technological skills informed by both the scientific, artistic, innovative, and creative sensibilities in this formalized interdisciplinary process will yield graduates who are more fully prepared to enter the workforce, no matter whether they choose private industry, non-profit, creative arts, higher education, government, social services, or medical or scientific endeavor and research. These graduates are prepared for exponential change.

James R. Young
6825 Pine St
Omaha, NE 68106
jryoung35@gmail.com
402 306 1557

December 4, 2015

University of Nebraska
Varner Hall
3835 Holdrege
Lincoln, NE 68583

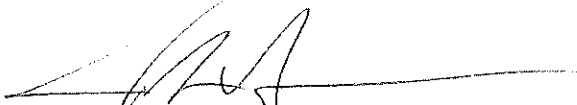
Dear University of Nebraska:

I am writing to you in the hopes that this letter will support the University of Nebraska at Omaha School of Interdisciplinary Informatics Information Technology Innovation program's efforts to start a Masters Degree in IT Innovation at University of Nebraska at Omaha.

In the Omaha area and the region, I am actively involved in supporting and mentoring business startups and other entrepreneurial projects. I have noticed gaps in educational training for current and future members of the workforce who are involved in IT innovation and business startups. In my opinion, the proposed Masters of Science in IT Innovation would not only help fill some of those gaps but would make University of Nebraska graduates more competitive in the marketplace. I like how the IT Innovation students are and would be learning how to do things in a different way. It puts them in a lucrative position because they are learning to do things differently.

It would be great if these degree programs become an approved graduate degree program, but also, it would be a plus for Omaha and the state of Nebraska, with opportunities for national and international recognition. Please contact me, if you have any questions or concerns. Thank you.

Sincerely,



James R. Young
Co-Founder, Aksarben Innovation Initiative
Co-Founder and Co-Managing Partner, Aksarben Discovery Fund

Dusty Reynolds
Racenote
13502 S 33Rd St
Bellevue, NE 68123
(402) 536-0366
d@racenote.com

March 15, 2016

University of Nebraska at Omaha
6001 Dodge St.
Omaha, NE 68182

Dear University of Nebraska at Omaha,

It is with great pleasure that I am writing this letter of support for the Master of Science in IT Innovation graduate degree program that is being proposed by the Information Technology Innovation program in the College of Information Science and Technology from the University of Nebraska at Omaha.

I currently run a successful startup with wonderful employees, but I have noticed that curiosity and creativity are in limited quantity in the general labor pool in the region. My company, and I'm sure many other companies also, prefer to hire people that have learning, curiosity, and creativity as part of their core values.

The Masters of Science that is currently being proposed would advance and accelerate the technology business ventures in the region.

Please do not hesitate to contact me if you would like further elaboration. Thank you.

Sincerely,



Dusty Reynolds
Racenote, Team Manager



Interpublic Group

August 25, 2018

University of Nebraska
3835 Holdrege Street
Lincoln, Nebraska 68583

To Whom it May Concern

Interpublic Group (IPG) is a global provider of marketing solutions. Through our 50,600 employees in all major world markets, our companies specialize in consumer advertising, digital marketing, communications planning and media buying, public relations and specialty marketing.

I am excited to support the unique MS in IT Innovation degree program proposed by UNO's college of IS&T. As a senior executive at IPG, I believe that it is very important for future employees to both understand information technology and think creatively. That combination is not plentiful in the labor pool, although that combination is becoming more and more important. It appears to me that graduates of the program will offer potential employers a diverse and important skill set that will advance a company's mission with entrepreneurial and creative thinking, in addition to IT skills. The Design Thinking component is also a plus. I think any large company would benefit from having an employee that can not only "follow a script," but also create a new and better script.

I endorse the proposal for the MS in IT Innovation program, and I am looking forward to its graduates entering the IT workforce.

Sincerely,

A handwritten signature in black ink, appearing to read 'Bob Merkley', with a long horizontal flourish extending to the right.

Bob Merkley, Director of Global Operations
Interpublic Group of Companies

MUTUAL of OMAHA INSURANCE COMPANY
UNITED of OMAHA LIFE INSURANCE COMPANY
3300 Mutual of Omaha Plaza
Omaha, NE 68175
402 351 8345

MIKE LECHTENBERGER
Executive Vice President
Information Services Operation



August 24, 2018

Dr. Susan Fritz
Executive Vice President and Provost
University of Nebraska
3835 Holdrege Street
Lincoln, Nebraska 68583

Dear Provost Fritz:

I have been informed about a new Master of Science in IT Innovation program being proposed by the University of Nebraska in Omaha's College of Information Science & Technology (IS&T). As a long-term partner of the college and the University of Nebraska system, I am pleased to write this letter in strong support of this program. We currently employ many IS&T students as interns and have many alumni as employees. Some of these students are from the undergraduate IT Innovation program, and we are excited about the prospects of possibly hiring more students, who have earned their master's degree from this proposed program.

The MS in ITIN program puts together in one IT professional, a diverse skill set that would potentially be beneficial to our company. An IT professional with design, technical, and creativity skills would be highly sought after, not just by Mutual of Omaha, but by other companies, as well. I hope that this program is approved soon, so that we can benefit from the expertise of its students.

Sincerely,

Mike Lechtenberger, CIO
Mutual of Omaha

**TABLE 1: PROJECTED EXPENSES - NEW INSTRUCTIONAL PROGRAM
MS in IT Innovation at UNO**

Personnel	(FY 2018-19) Year 1		(FY 2019-20) Year 2		(FY 2020-21) Year 3		(FY 2021-22) Year 4		(FY 2022-23) Year 5		Total	
	FTE	Cost	FTE	Cost	FTE	Cost	FTE	Cost	FTE	Cost	FTE	Cost
Faculty ¹												\$0
Professional												\$0
Graduate assistants ²	0.5	\$24,000	0.5	\$24,000	1.0	\$48,000	1.0	\$48,000	1.0	\$48,000	1.0	\$48,000
Support Staff ³							1.0	\$43,800	1.0	\$45,000		\$88,800
Subtotal	0.5	\$24,000	0.5	\$24,000	1.0	\$48,000	2.0	\$91,800	2.0	\$93,000		\$280,800
Operating												
General Operating												\$0
Equipment												\$0
New or renovated space												\$0
Library/Information Resources												\$0
Other												\$0
Subtotal		\$0		\$0		\$0		\$0		\$0		\$0
Total Expenses		\$24,000		\$24,000		\$48,000		\$91,800		\$93,000		\$280,800

¹ No new faculty are needed; however, new faculty lines may be needed pending program growth beyond projections.

² One graduate assistant will be required for curricular support and outreach. In year three, a second graduate assistant will be required. Both graduate assistants will be grant-funded.

³ Currently, one staff member is grant-funded. Funding will run out in year four. The expectation is that new grant funding will be secured.

**TABLE 2: REVENUE SOURCES FOR PROJECTED EXPENSES - NEW INSTRUCTIONAL PROGRAM
MS in IT Innovation at UNO**

	(FY 2018-19) Year 1	(FY 2019-20) Year 2	(FY 2020-21) Year 3	(FY 2021-22) Year 4	(FY 2022-23) Year 5	Total
Reallocation of Existing Funds						\$0
Required New Public Funds						\$0
1. State Funds						\$0
2. Local Tax Funds (community colleges)						\$0
Tuition and Fees ¹	\$26,910	\$123,750	\$193,680	\$193,680	\$193,680	\$731,700
Other Funding ²	\$120,000	\$120,000	\$120,000	\$120,000	\$120,000	\$600,000
1						\$0
2						\$0
3						\$0
Total Revenue	\$146,910	\$243,750	\$313,680	\$313,680	\$313,680	\$1,331,700

¹ Calculations for tuition are based on the below table of projected enrollments. Each student is anticipated to enroll in 18 credit hours per year. The calculation is based on the tuition rate for 2018-19 which is \$299.00 for resident and \$777.00 for non-resident students.

² ITIN faculty estimated to secure at least \$120,000 in grant funding annually to support the proposed program.

	(FY 2018-19) Year 1	(FY 2019-20) Year 2	(FY 2020-21) Year 3	(FY 2021-22) Year 4	(FY 2022-23) Year 5
Anticipated New Enrollment					
Resident	5	5	5	5	5
Non-Resident	0	5	5	5	5
Total Active Enrollment	5	15	20	20	20