

**COORDINATING COMMISSION
FOR POSTSECONDARY EDUCATION**

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Lincoln, NE 68508

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PROPOSAL FOR NEW INSTRUCTIONAL PROGRAM
Form 92-40

SECTION I

Institution Submitting Proposal: University of Nebraska at Kearney

Title of Program: Software Quality Assurance

CIP Code: 52.0201

Organizational Unit in which program will be located:

Department of Marketing and Management Information Systems
College of Business 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):

Software Quality Assurance Undergraduate Certificate

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

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

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

Date approved by Governing Board: October 9, 2015

(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

Request for a Software Quality Assurance Undergraduate Certificate

University of Nebraska at Kearney

I. Descriptive Information

- **Name of the Institution Proposing the Center:** University of Nebraska at Kearney (UNK)
- **Name of the Program Proposed:** Software Quality Assurance (SQA) Undergraduate Certificate
- **Other Programs in Field Offered:** MIS Quality Assurance Minor
- **CIP Code:** 52.0201
- **Administrative Units for the Program:** MIS Program/College of Business and Technology
- **Proposed Delivery Site(s) and Type(s) of Delivery, if applicable:** All courses required for this certification are in place and offered at the University of Nebraska at Kearney. The certificate will be delivered through a combination of both face-to-face and Web-based courses.
- **Date Approved by Board of Regents:** TBD
- **Date Certificate will be Initiated:** Spring 2016
- **Description, including credit hours and other requirements (program of study), and purpose of the proposed program:**

The Software Quality Assurance certificate will add value to the degree seeking individual's program as it will indicate knowledge in the field of quality assurance and will enhance their career prospects. The certificate will assist non-degree seeking individuals in acquiring knowledge of software quality assurance theory and practice that will help enhance their career opportunities. Software quality assurance employers will benefit from the certificate by being able to demonstrate to clients and potential clients the degree of collaboration in workforce development between the business and the University in developing employee competence.

The topics to be covered are selected to provide a person with some professional experience in software quality assurance a better understanding of the theory behind many of the activities they are already doing. The increased understanding should enhance their depth of knowledge and their advancement opportunities within the industry. For undergraduates with no experience in the SQA field the introduction to key concepts will provide a better knowledge base. This will enable them to more rapidly provide value to an employer.

Required courses (15 Hours):

- MIS 282 Business Intelligence Using Databases
 - Prereq: passing score on Business Computer Proficiency Examination or MIS 182GS
- MIS 302 Principles of Management Information Systems
 - Prereq: passing score on Business Computer Proficiency Examination or MIS 182GS
- MIS 380 Web Software/Network Architecture
 - Prereq: MIS 282GS and MIS 302
- MIS 381 Systems Analysis and Design I
 - Prereq: MIS 380
- MIS 450 Software Quality Assurance
 - Prereq: MIS 381 or CSIT 380

There are no additional admission requirements beyond those specified for non-degree students at UNK; however, participants must earn a grade of B or above in each course to receive this certification.

By the end of the program students will be able to:

- Present a business analysis in a professional manner.
- Describe the basics of an Enterprise Resource Planning (ERP) system.
- Access and process information stored in an ERP system.
- Use appropriate networking configuration, programming tools, and systems analysis and design methodology for major project domains.
- Discuss the concepts of quality assurance and its role in the software development life cycle.
- Recommend methods for determining metrics, costs, and benefits of quality assurance.
- Recommend the appropriate tools for support (including CASE tools).

This course was developed in coordination with the College of Business and Technology's industry stakeholders. One of the courses is offered in collaboration with Xpanxion, a multi-national company with Nebraska roots and locations, to allow students the opportunity to gain some exposure to the actual work environment of a SQA professional. In light of this, assessment will initially be conducted using the following modalities:

- Feedback from employers.
- Results of the International Software Testing Qualifications Board (ISTQB) exam.

This Certificate represents a substantial resource commitment from the MIS Department and Xpanxion in order to prepare recipients of the certification for a career

as a software quality assurance professional. As such, an effective certification assessment is an integral part of the process to assure that all parties are benefiting from the commitment and to identify areas for improvement in this dynamic area. Because SQA is such a rapidly changing and evolving industry we anticipate the certificate program will evolve rapidly initially until the industry matures.

The population to be served by this certificate includes:

- Working professionals with some professional experience in software quality assurance.
- Working professionals in related areas wanting to enter the software quality assurance field.
- Existing students wanting to enter the software quality assurance field.

Individuals hired through the TechHire program, the Phase 1 – Pilot Project Strategic Initiative press conference handout identifies the target population as: “...those who currently attain household incomes under \$24K a year, those with lower education achievement, and minorities.”

The Marketing and MIS Department has fostered relationships with two firms that have substantial software quality assurance departments, Principal Financial Group and Xpanxion. Partnering with these firms the department developed and offered one of the first software quality assurance classes in the United States in the spring 2010 semester. Both firms have been supportive of efforts to develop a software quality assurance certificate to help address the growing local and national need for quality assurance experts. This certificate is directed toward both non-degree seeking individuals and students who are pursuing a degree. The program will be promoted via the existing relationships with industry, on the MIS website, in College of Business and Technology recruitment efforts at career fairs, in high schools, and via other avenues as appropriate.

The MIS program also has an “MIS Quality Assurance Minor.” The minor is designed for undergraduate students with no full time professional experience. The minor requires 24 hours of coursework, at least 18 of which has to be unduplicated from the student’s major.

II. Review Criteria

A. Centrality to Role and Mission

“The College of Business and Technology serves Nebraska and the surrounding region by preparing students to compete in dynamic professional environments...” The SQA field is a very dynamic and professional field with tremendous growth opportunity. Providing the SQA certificate benefits both those businesses with dedicated quality assurance departments and other businesses that develop software internally but do not have a dedicated quality assurance department. The management of the development

process will necessarily include quality assurance activities even in the absence of a separate department to conduct the activities.

B. Evidence of Need and Demand

1. Need for the Program

As technology, and the software that enables much of technology, becomes more pervasive globally, so does the importance of Software Quality Assurance (SQA). This has created an increasing need for individuals with knowledge of SQA. One local example is Xpanxion, a global software services company with professional services organizations in Atlanta, GA, and Pune, India, as well as rural technology centers in Kearney, NE; Loup City, NE; Ames, IA; and Manhattan, KS. Xpanxion is now a subsidiary UST Global company but retains the Xpanxion name.

2. Demand for the Program

Based upon the past enrollment from Xpanxion, MIS emphasis classes, and Computer Science classes, it is estimated that the enrollment will initially be approximately 10 students per year. The growth of the program will likely be highly dependent upon the continued growth of Xpanxion and the success of the TechHire initiative¹ put forward with the assistance of area businesses and the government at local, county, state, and federal levels.

C. Adequacy of Resources

1. Faculty and Staff Resources

Current faculty and staff resources are adequate.

2. Physical Facilities

No additional physical facilities are required.

3. Instructional Equipment and Information Resources

MIS program partner Xpanxion helps guide selection of needed software, much of which is now open source, and will continue to provide guidance in the future. Current instructional equipment is adequate for both face-to-face and online class delivery.

4. Budget Projects

All courses needed for this certificate are already in place, and there is sufficient capacity within these courses to accommodate the projected enrollment for the certificate. No additional resources will be required.

D. Avoidance of Unnecessary Duplication

We are unaware of any comparable software quality assurance certificate program offered by any four year institution in Nebraska.

¹ The stated goal of the TechHire project is to train, hire, and place 500 entry-level professionals into the IT industry by 2020 (<http://techhirenebraska.com/>).

All resources are in place. No unnecessary duplication will be created because the certificate will allow students to bundle closely related courses together in order to find employment within a narrow domain.

E. Consistency with the Comprehensive Statewide Plan for Postsecondary Education

This certificate will help support initiatives to develop opportunities for rural Nebraskans to work in the technology industry which was identified as a key growth area in the Battelle Study. Buffalo County was one of 21 communities selected as part of the Obama Administration's TechHire Initiative. The target group for TechHire to fill these jobs consists of people who have a household income under \$25,000 per year, people with low education, and minorities. Since this population will be working full time as part of the TechHire Initiative, it is likely that a certificate program would help them to become more valuable employees for the businesses that employ them. The employees will also directly benefit as students by earning improved credentials to demonstrate that they understand SQA at a more in-depth level acquired from studying the underlying theory and best practices. The combination of their employment record and demonstrated educational attainment should enhance their career advancement within the SQA sector. For some students additional education is a potential goal to transition into the larger technology industry. SQA Certification has the potential to play a part in the bold TechHire initiative's effort to help Nebraska grow a technology savvy workforce. Consistent with the Comprehensive Statewide Plan for Postsecondary Education, this certificate program was developed in consultation with industry partners and will help develop a technology-adept workforce for Nebraska. As stated above, students who earn this certificate will have increased opportunities for employment.

TABLE 1: PROJECTED EXPENSES - NEW INSTRUCTIONAL PROGRAM
Software Quality Assurance Undergraduate Certificate

	FY2016 Year 1		FY2017 Year 2		FY2018 Year 3		FY2019 Year 4		FY2020 Year 5		Total	
	FTE	Cost	FTE	Cost								
Personnel												
Faculty											0	\$0
Non-teaching staff:												
Professional											0	\$0
Graduate assistants											0	\$0
Non-teaching staff:												
support											0	\$0
Subtotal	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
Operating												
General Operating												\$0
Equipment												\$0
New or renovated space												\$0
Library/information												\$0
Resources												\$0
Other												\$0
Subtotal		\$0		\$0		\$0		\$0		\$0		\$0
Total Expenses	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00

NOTE: This certificate is built on curriculum that already exists. There is sufficient capacity to offer the certificate without requiring additional resources.

TABLE 2: REVENUE SOURCES FOR PROJECTED EXPENSES - NEW INSTRUCTIONAL PROGRAM
Software Quality Assurance Undergraduate Certificate

	FY2016 Year 1	FY2017 Year 2	FY2018 Year 3	FY2019 Year 4	FY2020 Year 5	Total
Reallocation of Existing Funds						\$0
Required New Public Funds						\$0
1. State Funds						\$0
2. Local Funds						\$0
Tuition and Fees ¹	\$38,850	\$39,900	\$40,950	\$42,000	\$43,200	\$204,900
Other Funding						\$0
1						\$0
2						\$0
3						\$0
Total Revenue	\$38,850	\$39,900	\$40,950	\$42,000	\$43,200	\$204,900

¹ Tuition/fee calculations for FY16 are based upon 10 students completing 15 student credit hours per year at \$234 per credit hour of distance tuition plus \$25 per credit hour in distance education fees (\$259 per credit hour total). The budget presumes that 10 students will be enrolled yearly. For the purposes of estimates after FY16, distance education tuition amounts were increased by 3% from the previous fiscal year and rounded to the nearest integer; the \$25 fee was not incremented.

October 12, 2015

Dr. Michael Baumgartner
Executive Director
Coordinating Commission for
Postsecondary Education
140 N. 8th Street, Suite 300
Lincoln, NE 68509

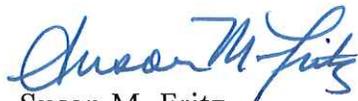
RECEIVED
OCT 15 2015
Coordinating Commission
for Postsecondary Ed.

Dear Michael:

Enclosed is a copy of the proposal to create a Software Quality Assurance undergraduate certificate in the Department of Marketing and Management Information Systems in the College of Business and Technology at UNK. The proposal was approved by the Board of Regents at the October 9, 2015 meeting. Also enclosed is the Proposal for New Instructional Program Form 92-40.

Please do not hesitate to contact me if you have any questions.

Sincerely,



Susan M. Fritz
Executive Vice President and Provost

Enclosure

c: Chancellor Douglas Kristensen
Senior Vice Chancellor Charles Bicak
Dean Timothy Burkink, College of Business and Technology

TO: The Board of Regents
Academic Affairs

MEETING DATE: October 9, 2015

SUBJECT: Creation of a Software Quality Assurance (SQA) undergraduate certificate in the Department of Marketing and Management Information Systems in the College of Business and Technology at the University of Nebraska at Kearney (UNK)

RECOMMENDED ACTION: Approval is requested to create a Software Quality Assurance undergraduate certificate in the Department of Marketing and Management Information Systems in the UNK College of Business and Technology

PREVIOUS ACTION: The Bachelor of Science degree in Business Administration Comprehensive was established prior to modern records of Board approvals.

EXPLANATION: This proposed certificate draws upon courses offered in the BS in the Business Administration Comprehensive: Management Information Systems Emphasis. A total of 15 credit hours will be required. This certificate program is a collaboration with an area technology company, Xpanxion, with a major location in Kearney. One of the courses in the certificate program is jointly offered with the company, ensuring the opportunity for exposure to the actual work environment of a Software Quality Assurance (SQA) professional.

The SQA certificate will add value to the program of an undergraduate degree seeking student, as it will affirm competency in the field of quality assurance and will enhance career prospects. The certificate will assist non-degree seeking individuals in acquiring knowledge about SQA theory and practice that will afford career advancement.

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

PROGRAM COST: This certificate is built on existing approved curriculum and will require no additional program costs (see page 6).

SOURCE OF FUNDS: Not applicable.

SPONSORS: Charles J. Bicak
Senior Vice Chancellor for Academic and Student Affairs

Douglas A. Kristensen, Chancellor
University of Nebraska at Kearney

RECOMMENDED: 
Susan M. Fritz
Executive Vice President and Provost

DATE: September 16, 2015