KENT STATE UNIVERSITY
CERTIFICATION OF CURRICULUM PROPOSAL

Preparation Date **6-Oct-17** Curriculum Bulletin _____

Effective Date **Fall 2019** Approved by EPC _____

Department	**Mathematical Sciences**
College	**AS - Arts and Sciences**
Degree	**BS - Bachelor of Science**
Program Name	**Actuarial Mathematics** Program Banner Code
Concentration(s)	Concentration(s) Banner Code(s)
Proposal	**Establish program**

Description of proposal:

The Department of Mathematical Sciences would like establish a Bachelor of Science in Actuarial Mathematics that would replace the current Actuarial Mathematics Concentration in the Mathematics Bachelor of Science Degree.
This is the Initial Inquiry required by the State.

Does proposed revision change program's total credit hours? ☐ Yes ☐ No

Current total credit hours: Proposed total credit hours

Describe impact on other programs, policies or procedures (e.g., duplication issues; enrollment and staffing considerations; need; audience; prerequisites; teacher education licensure):

Initially, the courses for this degree can be taught by existing faculty and supported by existing office staff within Mathematical Sciences.
However, the proposed new program is part of a larger plan to diversify academic opportunities for students and grow enrollment in Mathematical Sciences. Eventually, new faculty and staff will be needed to support these developments.
New courses will serve as electives for the Mathematics and Applied Mathematics majors.

Units consulted (other departments, programs or campuses affected by this proposal):

None

REQUIRED ENDORSEMENTS

ARMTony — 10/9/17
Department Chair / School Director

— ___/___/___
Campus Dean (for Regional Campuses proposals)

Mary Ann Haley — 10/20/17
College Dean (or designee)

___/___/___
Dean of Graduate Studies (for graduate proposals)

___/___/___
Senior Vice President for Academic Affairs and Provost (or designee)

MATH 2

TRANSMITTAL MEMO:

To: Dean Mary Ann Haley, Arts & Sciences

From: Mark L. Lewis, Mathematical Sciences

We have one item:

1. Initial inquiry for BS in Actuarial Mathematics. The Department of Mathematical Sciences would like to offer a BS in Actuarial Mathematics. This is the Initial Inquiry to begin this process.

MATH
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Ohio | Department of Higher Education

John R. Kasich, Governor
John Carey, Chancellor

INITIAL INQUIRY
REQUEST TO OFFER A NEW PROGRAM

Date of submission: *Date to come (sent after EPC)*

Name of institution: Kent State University

Primary institutional contact for this request:

Name: Therese E. Tillett
Title: Executive Director of Curriculum Services
Office of the Provost
Phone: 330-672-8558
E-mail: ttillet1@kent.edu

Name of program: Bachelor of Science degree, Actuarial Mathematics major

Classification of Instructional Program (CIP): **52.1304 Actuarial Science.** A program that focuses on the mathematical and statistical analysis of risk, and their applications to insurance and other business management problems. Includes instruction in forecasting theory, quantitative and non-quantitative risk measurement methodologies, development of risk tables, secondary data analysis, and computer-assisted research methods.

Proposed start date: Fall 2019, pending approval from the Ohio Department of Higher Education and the Higher Learning Commission

For institutions that are already approved/authorized by the chancellor

☐ New degree designation
☒ New program within an existing degree (e.g., major, minor, concentration)

Delivery options (check all that apply):

☒ Campus-based (will be offered at the Kent Campus)
☐ Online/hybrid delivery
☐ Flexible or accelerated delivery
☐ Offering the program at a new offsite location
☐ Offering the program at an existing offsite location
☐ Program contains off-campus experiences (e.g., internship, clinical, practicum, student teaching)

The institution will be seeking specialized accreditation for the program:

☒ No ☐ Yes

Kent State will not seek specialized accreditation for this program. However, the university plans to maintain its designation with the Society of Actuaries as having an actuary program with advanced curriculum to prepare students for actuarial examinations. In addition, Kent State is an academic central member of the Casualty Actuarial Society.

Provide a brief description of the request.

Kent State University proposes establishing a Bachelor of Science degree in Actuarial Mathematics. The program is existing at the bachelor's degree level, albeit as a concentration within the Mathematics major.

Explain the academic unit's rationale for making the request.

Kent State has offered an Actuarial Mathematics concentration in the BS degree in Mathematics since 2009. The program's curriculum is designed to prepare graduates for the actuary profession and to pass industry-standard certification exams. Actuaries deal primarily with risk. They analyze statistical data—such as mortality, accident, sickness, disability and retirement rates—and construct probability tables to forecast risk and advise industry on how to reduce any likely financial impact of adverse events.

Employment opportunities within the actuarial and related professions are growing and are expected to continue to grow. The Bureau of Labor Statistics estimates the job outlook for actuaries across the country to grow 22 percent (much faster than average) between 2016 and 2026.[1] Ohio is ranked seventh in the country with the highest employment levels in this occupation.[2] The Ohio Department of Jobs and Family Services lists actuaries as an in-demand occupation, with a starting wage of $59,460 with a bachelor's degree.[3] The insurance, banking, energy and medical industries in Northeast Ohio provide an important job market for graduates of the program.

As the Actuarial Mathematics concentration has evolved at Kent State, the requirements have diverged from the shared major requirements that all students in the program take. Moreover, additional curricular elements must be introduced into the current program in order to respond to significant changes in the actuarial and related professions. These changes are essential to enhance the academic preparation of students and prime them for success in the workplace, but they will cause further divergence from the core requirements of the Mathematics major.

The Actuarial Mathematics concentration now serves a sufficient number of students for it to be viable as a stand-alone major. Of the 116 students enrolled for fall 2017 in the BS degree in Mathematics, 72 have declared the Actuarial Mathematics concentration (15th day census). Moreover, the creation of a separate degree will increase the visibility of the actuarial mathematics program, promoting further enrollment growth. There is potential for recruitment of international students in support of the university's strategic initiatives.

Indicate whether additional resources (e.g., faculty, staff, facilities, technology) will be needed to support the proposed request.

As the program has been offered for the past eight years, current resources are sufficient. However, the proposed new program is part of a larger plan to diversify academic opportunities for students and grow enrollment in the Department of Mathematical Sciences. Eventually, new faculty and staff will be needed to support these developments.

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[1] Bureau of Labor Statistics, U.S. Department of Labor. Occupational Outlook Handbook. Actuaries. Retrieved from www.bls.gov/ooh/math/actuaries.htm.
[2] Bureau of Labor Statistics, U.S. Department of Labor. Occupational Employment and Wages, May 2016. Actuaries. Retrieved from www.bls.gov/oes/current/oes152011.htm.
[3] Ohio Department of Job and Family Services, Office of Workforce Development. In-Demand Occupations. Retrieved from omj.ohio.gov/OMJResources/All_InDemand_Short.stm.