Submitted by: Keith E. Whitfield, Provost

ESTABLISHMENT OF A NEW PROGRAM FOR
THE BACHELOR OF ARTS WITH A MAJOR IN ACTUARIAL MATHEMATICS

Recommendation
It is recommended that the Board of Governors establish a new degree program, the Bachelor of Arts with a major in Actuarial Mathematics in the Department of Mathematics and the College of Liberal Arts and Sciences, effective fall term, 2018.

Background
The purpose of this proposal is to replace the Mathematics major existing concentration in Actuarial Science with a full-fledged undergraduate degree program for students who want to pursue an actuarial career. The new Bachelor of Arts in Actuarial Mathematics is designed to solidify and expand students training in actuarial science and is motivated by the specific career needs of professional actuaries.

Actuaries apply mathematical and statistical methodologies to measure risk in insurance, pensions, and other areas in finance, and ensure that financial institutions remain solvent in the face of such risk. Actuaries apply these methodologies to ensure that financial institutions remain solvent in the face of such risk. Since tasks of actuaries are highly professionalized, the occupation is well respected. Actuary was selected as the best job in 2010 by the Wall Street Journal. Graduates in mathematics and related fields are dominant in the occupation due to the high-level skills required for the job.

No actuarial programs are currently recognized by the Society of Actuaries in the Detroit Tri-County Area despite a high demand from industry as well as prospective students both locally and globally. Academic advisors in Mathematics have heard from a large number of continuing and prospective students who are interested in actuarial careers. Actuarial programs at Central Michigan University, Ferris State University, Kettering University, Michigan State University, Spring Arbor University, University of Michigan Ann Arbor, and University of Michigan Flint are already recognized by the Society of Actuaries in the State of Michigan.

Program Description
Compared to the current Actuarial Science concentration, students will receive (i) more interdisciplinary training including computer science, economics and finance as well as in mathematics, (ii) a more organized and specified curriculum in mathematics, and (iii) an official degree title of Actuarial Mathematics. To facilitate student success in actuarial careers, the program will also ensure that students have:
- sufficient data management skills in the form of computer languages and statistical software such as SAS, R and SQL;
- Adequate background knowledge in mathematical and statistical content areas such as financial economics, loss models, life contingencies, and statistics and probability models;
- Working knowledge in economics (macroeconomics and microeconomics), corporate finance, and applied statistics (regression and time series); and
- Working knowledge and interest in finance, accounting and economics.

Admission Requirements
Admission requirements for the Bachelor of Arts in Actuarial Mathematics are satisfied by the general requirements for undergraduate admission to the university.

Curriculum Requirements
The undergraduate program will be a 120-hour Bachelor of Arts degree. Students will complete 52-54 credits of required courses within the major. Of these credits, students will complete at least 38-39 credits in mathematics and an additional 14-15 credits in related fields such as finance, economics and computer science.

Graduation Requirements
Students must have a minimum GPA of 2.0 and a cumulative GPA of 2.0 or higher in all courses within the major. This program will adhere to all WSU and College of Liberal Arts and Sciences regulations governing undergraduate degrees.

Program Administration
The faculty and administrators within the Department of Mathematics will oversee the program. The program will be supported by the current administrative and advising staff of the Department of Mathematics.

Budget and Resource Requirements
No new positions have been allocated for this program effort. The program is expected to increase student retention and enrollment in a highly cost-effective manner.

Accreditation
No accreditation review is required to start the program. The proposed program will target the Universities & Colleges with Actuarial Programs - Introductory Curriculum (UCAP-IC) recognition by the Society of Actuaries. Our proposed program will have sufficient number of courses at an appropriate level to qualify for the UCAP-IC.

Approvals
The proposal was approved by the Chair and the faculty in the Department of Mathematics, the Faculty Council and Faculty Assembly of the College of Liberal Arts and Sciences, the Dean of the College of Liberal Arts and Sciences, and the Provost.