This major serves as an alternative to the Actuarial Science (ACS) Major. Students selecting the Business Actuarial Science (BACS) major will complete all of the Actuarial Science major-specific requirements. Some of these requirements overlap with the requirements of the business major. Students must complete all additional requirements for the business degree. Upon graduation, students will receive the BS in Business Administration with a major in Business Actuarial Science (BACS) degree. Whenever there are changes to the ACS major, they will also be made to the BACS major.

Though this is submitted as a modification of the Actuarial Science major, it is intended as an additional major residing in the School of Business Administration. The Actuarial Science major should remain as well, residing in the Department of Mathematics and Statistics.

New requirements for the degree are in items 13 and 14.

The proposed new Business Actuarial Science major has been approved by both the Department of Mathematics and Statistics and the Department of Economics.
Business Actuarial Science, B.S.

Requirements for the major in actuarial science, B.S. program

Because an actuary needs a blend of mathematics, economics, statistics and finance, this major is offered jointly by the Department of Mathematics and Statistics and the Department of Economics. However, the major in actuarial science differs significantly from the other majors offered by these two departments because it (1) prepares students for jobs in actuarial science and provides them with the educational background necessary to pursue an advanced degree in economics, mathematics, statistics, or business administration, (2) integrates two distinctly different disciplines, thereby providing students with a breadth of knowledge that is needed in a fast-changing world, and (3) provides students with the analytical and reasoning skills to successfully complete the first two exams in actuarial science offered by the Society of Actuaries.

To earn the Bachelor of Science degree with a major in business actuarial science, students must

1. Complete Basic Mathematics Requirements

   MTH 1554 Calculus I  (4)
   MTH 1555 Calculus II  (4)
   MTH 2554 Multivariable Calculus  (4)
   MTH 2775 Linear Algebra  (4)

2. Complete Probability Requirements

   ACS 3000 Foundations of Probability and Calculus  (1)
   [Right] unless the student has earned a grade of at least B+ in MTH 2554 - Multivariable Calculus (4) or permission of the chief undergraduate adviser)
   STA 2226 Applied Probability and Statistics  (4)
   STA 4227 Introduction to Mathematical Statistics I  (4)
3. Complete Economics Requirements

ECN 2100 Principles of Economics
[Right] or both ECN 2010 - Principles of Microeconomics (4) and ECN 2020 - Principles of Global Macroeconomics (4) (or ECN 2000 Principles of Macroeconomics (4))

ECN 3020 Intermediate Macroeconomics
[Right] or ECN 3210 - Financial Markets and Economy (3)

ECN 3030 Managerial Economics
[Right] or ECN 3810 - Mathematical Analysis for Economists (3)

4. Complete Statistics Requirement

QMM 2410 Statistical Methods for Business II
[Right] or STA 4330 - Time Series I (4) or STA 4228 - Introduction to Mathematical Statistics II (4)

5. Complete Accounting and Finance Requirements

ACC 2000 Introductory Financial Accounting
FIN 3550 Finance for Actuarial Science
[Right] or (FIN 3220 - Managerial Finance I (3) and FIN 3720 - Managerial Finance II (3))

6. Complete Regression Requirement

ECN 4050 Econometrics
[Right] or STA 4002 - Applied Linear Models I (4)
7. Complete Database and Programming Requirements

EGR 1400 Computer Problem Solving in Engineering and Computer Science (4)
MIS 3130 Information and Data Management (3)
[Right] or MIS 3140 - Business Database Systems (3)

MIS 4460 Business Analytics (3)

8. Complete Additional Mathematics-Statistics Requirement

APM 2559 Introduction to Differential Equations (4)
[Right] or STA 4225 - Elements of Stochastic Processes (4) or APM 4334 - Applied Numerical Methods: Matrix Methods (4)


ACS 4550 Financial Mathematics (3)

10. Complete Financial Derivatives Requirement

ACS 4660 Financial Economics (3)
[Right] or FIN 4250 - Financial Derivatives (3)

11. Complete cognate courses

WRT 3082 Business Writing (4)
COM 2000 Public Speaking (4)
[Right] or COM 2403 - Group Dynamics and Communication (4)
12. Complete ACHIEVE courses

SBC 1990 ACHIEVE I
[Right] (to be taken during the freshman year or first year as an actuarial science major)

SBC 2990 ACHIEVE II
[Right] (to be taken during the fall semester of the sophomore year or the second semester as an actuarial science major)

ACS 3990 ACHIEVE 3 Actuarial Sciences
[Right] (to be taken during the second semester of the sophomore year or the third semester as an actuarial science major)

13. Complete additional SBA Pre-Core Requirements

ACC 2100 Managerial and Cost Accounting I

MIS 1000 Business Problem Solving with Information Technology

14. Complete additional SBA Core Requirements

MKT 3020 Marketing

ORG 3300 Introduction to Organizational Behavior

ORG 3310 Introduction to the Management of Human Resources

POM 3430 Operations Management

MGT 3500 Legal Environment of Business

MGT 4350 Management Strategies and Policies

MIS 3000 Management Information Systems

15. Earn a minimum grade of C in all courses applied to the major including cognate courses for the major.
Additional Information

In addition to these major requirements, students must complete the Oakland University General Education Requirements, the College of Arts and Sciences College Exploratory Requirement, and an appropriate number of free elective classes to meet the overall credit requirement for the degree (in most cases 124; some degrees may require a greater number).

As a general rule, no more than eight credits of course work used to satisfy one major, minor or concentration may be applied toward another, but exceptions to this rule may be allowed with the written approval of the program coordinators.