Mathematics | Major

PROGRAM HIGHLIGHTS IN BRIEF
Alvernia is a Catholic, Franciscan university dedicated to the ideals of academic achievement, community service, and the personal and professional fulfillment of our students. Mathematics classes are taught by dedicated faculty, committed to the ideal that advanced knowledge and skills in the area of quantitative reasoning is a valuable human endeavor that contributes to our everyday lives and helps to advance the world for a better and more sustainable future.

Mathematics courses are taught in the O’Pake Science Center, a $9.3 million state-of-the-art teaching and research facility, which opened in 2006. The O’Pake Science Center added 31,582 square feet of classroom, laboratory, and faculty office space to Alvernia’s campus. Two floors of laboratory/classroom space, all of which have the latest in educational technology, allow Mathematics students to employ a variety of computational software in evaluating complex mathematical and statistical relationships.

ACADEMIC QUALITY
The Mathematics curriculum provides students with a solid foundation in Math theory and practice permitting students to pursue graduate work in Mathematics or one of the many sub-fields of Statistics, quantitative research in academic, corporate or governmental setting, as well as preparing students to be successful and highly sought after Mathematics teachers.

In addition to gaining expertise in theoretical and applied Mathematics, majors also become proficient in the essential skills of communication, organization, and leadership. This broad-based approach prepares each student to succeed in a professional position and to develop the attributes necessary for career advancement. In addition, Mathematics students enjoy the benefits of contemporary computer technology paired with one-on-one faculty attention that stresses the development of problem-solving skills.

Government agencies and corporations that deal with human behaviors, like traffic analysis, product sales or any type of risk/benefit analysis employ many mathematicians to develop mathematical models to predict human activity. Mathematicians also contribute to quantitative research in areas like environmental analysis and public resource allocation. One of the major areas open to Math students is the area of Biostatistics which is seeing a huge demand for analytical statisticians in optimizing health-care treatments and delivery of care.

INTERNSHIP OPPORTUNITIES
American Association for the Advancement of Science
Capital Semester Internship Program
GPU Energy
Mayo Clinic-Department of Biostatistics
OSHA
National Center for Research Resources – SIBS program
Novartis Inc.
University of Pittsburgh - Department of Biostatistics

CAREER SUCCESS
Graduates of the Mathematics programs at Alvernia have been accepted into respected post-baccalaureate programs; find teaching positions in secondary and college education; and managerial positions in private industry, public utilities, and social agencies including GPU and the Catholic Social Agency.
Mathematics Major Requirements (47 Credits)
MAT 230  Calculus I
MAT 231  Calculus II
MAT 307  Abstract Algebra
MAT 332  Calculus III
MAT 401  Real Analysis
MAT 415  Mathematics Seminar
CIS 151  Intro to Computer Information Systems I
CIS 152  Intro to Computer Information Systems II
PHY 110  General Physics I
PHY 111  General Physics II
12 elective credits in Mathematics

Mathematics Electives
MAT 204  Intro to Math Logic
MAT 209  Probability & Statistics
MAT 210  Inferential Statistics
MAT 225  Business Calculus
MAT 240  Linear Algebra
MAT 304  Numerical Analysis
MAT 308  Modern Geometry
MAT 403  Complex Variables

Mathematics Research/Internship (6 credits)
MAT 480  Mathematics Internship -OR-
MAT 316  Intro to Math/Stats Research
MAT 317  Experimentation in Math/Stats Research
MAT 407  Data Analysis in Math/Stats Research

Mathematics Minor Requirements (17-18 Credits)
MAT 209  Probability and Statistics
MAT 230  Calculus I
MAT 307  Abstract Algebra
Choose two from the following:
MAT 204  Introduction to Mathematical Logic
MAT 231  Calculus II
MAT 240  Linear Algebra
MAT 304  Numerical Analysis
MAT 308  Modern Geometry

CONTACT INFORMATION
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Mathematics Secondary Education Major (35 credits)
MAT 131  Precalculus Mathematics
MAT 204  Introduction to Mathematical Logic
MAT 209  Probability and Statistics
MAT 230  Calculus I
MAT 231  Calculus II
MAT 240  Linear Algebra
MAT 307  Abstract Algebra
MAT 308  Modern Geometry
MAT 332  Calculus III
MAT 415  Mathematics Seminar

Required Liberal Arts Core:
PSY 101 Introductory Psychology

Related Requirements:
CIS 151  Intro to Computer Information Systems I
CIS 152  Intro to Computer Information Systems II
PHY 110  General Physics I
PHY 111  General Physics II
PSY 210  Educational Psychology

Secondary Education Professional Education:
SPE 100  Intro to Exceptionalities in Children and Youth
ED 200  Foundations of Education
ED 206  Field Experience I
ED 306  Field Experience II
ED 313  Classroom Management
ED 330  Curriculum Design and Assessment
ED 333  Literacy Methods for Secondary Inclusive Classroom
ED 416  Field Experience III
ED 433  Methods of Teaching Secondary Mathematics
ED 470  Student Teaching
ED 472  Student Teaching Seminar

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