Mathematics | Major

PROGRAM HIGHLIGHTS IN BRIEF

Alvernia is a 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.

CURRICULUM OVERVIEW

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 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

Mathematics Secondary Education Major (34 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

CONTACT INFORMATION

Elizabeth Gardner, Ph.D.
Chair of Mathematics and Sciences
1-610-796-8247
elizabeth.gardner@alvernia.edu

Office of Admissions
1-610-796-8269
admissions@alvernia.edu

8/11