**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. The Science Center has two floors of laboratory/classroom space, all of which have the latest in educational technology, allow Mathematics students to use 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, public resource allocation and the area of biostatistics.

**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 (53-57 Credits)
MAT 131 Precalculus (recommended)
MAT 230 Calculus I
MAT 231 Calculus II
MAT 307 Abstract Algebra
MAT 332 Calculus III
MAT 401 Real Analysis
MAT 415 Mathematics Seminar
MAT 480 Mathematics Internship - OR -
MAT 316 Intro to Math/Stats Research - AND -
MAT 317 Exper. in Math/Stats Research - AND -
MAT 407 Data Analysis Math/Stats Research

Mathematics Related Requirements (14 credits)
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

Mathematics Electives (12-13 credits)
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 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

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
COM 207 ESL Teachers

Secondary Education Professional Education:
SPE 100 Intro to Exceptionalities in Children and Youth
ED 203 Foundations of Education For the Middle Learner (Grades 4-8)
ED 206 Field Experience I
ED 209 Planning, Instruction & Assessment
ED 306 Field Experience II
ED 313 Classroom Management
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

Program requirements are subject to change. Contact your admissions counselor for the most up to date information.

CONTACT INFORMATION
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