Program Description

The Mathematical Sciences program is designed to meet the ever-increasing demands for diverse quantitative skills. The curriculum provides an opportunity to obtain the Bachelor of Arts degree in Mathematical Sciences, designed to prepare students for careers using mathematics, operations research, and statistics in the fields of teaching, research, industry, insurance, and management or for graduate study in Mathematical Sciences or related areas. By making different choices from technical electives, students can prepare for a wide variety of careers. Those who plan to teach mathematics or work in engineering or the physical sciences should choose mathematics courses. Those who wish to apply mathematical methods to life sciences, social sciences, or business fields should choose operations research or statistics courses. Any of these choices provide excellent preparation for graduate work in fields that need quantitative skills.

Admission Requirements

To apply, students must meet the following criteria for transferring to UIS or entering a major program as a Capital Scholar

- Minimum of 30 credit hours at the lower-division level
- Grade point average of 2.00 or higher on a 4.00 scale from an accredited college or university
- Three semester hours of English composition (as the minimum requirement for university admission) with the grade of "C" or better

Students must also meet entrance requirements specific to the UIS Math program

- Three semesters of Calculus - admission may be granted without these being completed as long as they are done before any class that requires them as a prerequisite.
- Complete MAT 330 (Entrance Assessment) during the first semester of coursework at UIS

Courses taken to satisfy matriculation requirements are not counted as part of the 48 credit hours of upper-division work needed for graduation. Students may begin work toward a degree before matriculation into the program, but matriculation should be completed before the last 16 semester hours of MAT courses needed for graduation.
To earn a bachelor’s degree in mathematical sciences, students must complete the following mathematics courses:

- MAT 330 Entrance Assessment (0 hours)
- MAT 332 Linear Algebra (4 hours)
- MAT 415 Advanced Calculus (4 hours)
- MAT 431 Mathematical Statistics (4 hours)
- MAT 444 Operations Research Methods (4 hours)
- MAT 491 Exit Assessment (0 hours)
- 2 Math electives (course number must be over 330) (8 hours)

Subtotal 24 hours

Students must select an additional area of concentration (cluster A or B, below). If you select cluster A, one or both of the courses in cluster B may be used to fill the 8 hours of math electives, and vice versa. Besides the courses from the other cluster, elective courses also available online include: Introduction to Differential Equations, Introduction to Topology, and History of Math.

Cluster A

- MAT 403 Abstract Algebra (4 hours)
- MAT 404 Geometry (4 hours)

Subtotal 8 hours

Cluster B

- MAT 421 Statistical Methods (4 hours)
- MAT 432 Mathematical Statistics II (4 hours)

Subtotal 8 hours

ALL students:

- ECCE (Engaged Citizenship) Requirements (10 hours)
- Upper Division General Electives (18 hours)

Subtotal 28 hours

Total For Major 60 hours