Program Coordinator: W. Linderman

The B.S. in Mathematics covers a wide variety of concepts and theories in mathematics; it develops the ability to think critically, analytically, and logically; and it examines applications of mathematics across the disciplines. The mission of the Mathematics program is to produce graduates with outstanding problem-solving skills and the ability to reason and communicate mathematical ideas in order to build meaningful lives of achievement for careers in business, education, engineering, statistics, actuarial science, and many other areas. The student learning outcomes for the Mathematics major are that students will be able to utilize the techniques of undergraduate mathematics to solve problems, construct proofs from a given set of mathematical hypotheses, and share their mathematical insights effectively with others in an academic setting. The Mathematics major at King requires fewer semester hours than most other majors, which makes it an ideal choice to combine with and enhance another major. Recent double majors, in addition to majoring in Mathematics, have also majored in Business, Biology, Chemistry, Physics, History, Security and Intelligence Studies, and Political Science.

Computer resources are available through campus computer labs. King has a site license for the computer algebra system Mathematica, giving students the opportunity to implement a wide variety of algorithms studied in their coursework.

All candidates for a B.S. in Mathematics are required to demonstrate competency in mathematics by either earning a passing grade on the Major Field Achievement Test in mathematics or on the PRAXIS, if they are pursuing secondary education licensure. MATH 4930: Mathematics Capstone is an optional 1 credit hour course designed specifically to help students prepare for these tests.

Core Curriculum Requirements
Mathematics majors should fulfill specified categories of the King Core Curriculum by taking the courses indicated below. See the “The Core Curriculum” section of the catalog for additional details.

**Quantitative Literacy**
MATH 2350
Calculus I .................................................................................. 4 s.h.

**Mathematics Major Requirements**
MATH 2360
Calculus II .................................................................................. 4 s.h.
MATH 2370
Vector Calculus ........................................................................... 4 s.h.
MATH 2410
Discrete Mathematics .................................................................. 4 s.h.
MATH 2450
Linear Algebra.................................................................4 s.h.
MATH 2480 ........................................................................2 s.h.

History of Mathematics
MATH 3510
Abstract Algebra...............................................................4 s.h.
MATH 3520
Further Studies in Abstract Algebra ..............................2 s.h.
MATH 3610
Analysis .........................................................................4 s.h.
MATH 3620
Further Studies in Analysis ...............................................2 s.h.
Math or Natural Science Electives at or above 2100 level ......6 s.h.
MATH 4930
Mathematics Capstone (optional)
MATH 4990
Comprehensive Assessment .............................................0 s.h.

Summary of Total Credits
Core Curriculum ..................................................................42 s.h.
Major Requirements ..........................................................36 s.h.
Electives/Minor/Second Major: .........................................46 s.h.
Minimum to Earn Bachelor of Science ................................124 s.h.

Teacher Education - MATHEMATICS
The B.S. in Mathematics with Tennessee teaching licensure (Grades 6-12) is available with modifications to the Mathematics track and the King Core, and successful completion of the Secondary Education minor. Licensed teachers in secondary education are in great demand in all fifty states, and the areas of science, mathematics, English as a second language, and foreign languages are considered critical need areas in K-12 public education by all states.

Declaration of the minor and early and frequent advisement is essential to timely completion of degree and licensure requirements. Students seeking teacher licensure will be assigned a secondary education advisor in the Department of Teacher Education, in addition to their major advisor. See the “Admission to the Teacher Education Program” section of this catalog or contact the Certification Advisor in the School of Education for eligibility criteria, admissions procedures, and timeliness.

Core Curriculum Requirements
Mathematics majors seeking teaching licensure should fulfill specified categories of the King Core Curriculum by taking the courses indicated below. See the “The Core Curriculum” section of the catalog for additional details on fulfillment of other categories of the Core.

Quantitative Literacy
MATH 2350
Calculus I ...........................................................................4 s.h.

Literature/History
HUMN 2171
The Quest for a Meaningful Life I ......................................4 s.h.
HUMAN 2172
The Quest for a Meaningful Life .............................................. 4 s.h.

Human Culture
If language requirement is not met by proficiency, then a student must choose FREN/SPAN/GREK 2000 to satisfy requirement.

FREN 2000, SPAN 2000, GREK 2000
Intermediate Foreign Language .................................................. 4 s.h.

BS in Mathematics Major Requirements for Teaching Licensure
MATH 2100
Programming with Graphics, Symbols, and Text ............................ 2 s.h.
MATH 2360
Calculus II .............................................................................. 4 s.h.
MATH 2410
Discrete Mathematics ................................................................ 4 s.h.
MATH 2450
Linear Algebra ......................................................................... 4 s.h.
MATH 3120
Number Theory ......................................................................... 2 s.h.
MATH 3150
Mathematical Statistics .............................................................. 4 s.h.
MATH 3250
Geometry .................................................................................. 4 s.h.

Choose from the following courses ............................................. 4 s.h.
MATH 2370
Vector Calculus (4 s.h.)
MATH 3430
Differential Equations (4 s.h.)
MATH 3470
Applied Mathematics (4 s.h.)
MATH 3510
Abstract Algebra (4 s.h.)
MATH 3610
Analysis (4 s.h.)
Math or Natural Science Elective at or above 2100 level ............... 4 s.h.

Secondary Education Minor
EDUC 2030
Introduction to Teaching, Grades K-12 ....................................... 2 s.h.
EDUC 2031
Introduction to Teaching Practicum, Grades PreK-12 ................. 1 s.h.
EDUC 2100
Survey of Exceptional Children .................................................. 4 s.h.
EDUC 2370
Reflective Teaching: Planning for Classroom Instruction ............ 3 s.h.
EDUC 2900
Foundations of Education ......................................................... 3 s.h.
EDUC 2950
Technology for Teachers ............................................................ 2 s.h.
EDUC 3390*
Secondary Curriculum and Methods ........................................... 3 s.h.
EDUC 3590*
Content Area Reading .......................................................... 3 s.h.
EDUC 3600*
Assessment and Evaluation ..................................................... 3 s.h.
EDUC 4490*
Student Teaching, Grades 6-10................................................. 5 s.h.
EDUC 4500*
Student Teaching, Grades 9-12................................................. 5 s.h.
EDUC 4950*
Capstone Seminar, Grades K-12.............................................. 2 s.h.
PSCI 2120
Cultural Diversity in America.................................................. 4 s.h.
PSYC 3320
Adolescent Development......................................................... 4 s.h.
EDUC 4990*
Comprehensive Assessment (passing state-required
Praxis II, successful portfolio completion,
successful portfolio defense) .................................................. 0 s.h.

*Requires admittance to the Teacher Education Program

Summary of Total Credits
Core Curriculum ........................................................................ 42 s.h.
Major Requirements ................................................................. 32 s.h.
Secondary Education Minor ...................................................... 44 s.h.
Electives .................................................................................... 6 s.h.
Minimum to Complete Licensure Program ................................ 124 s.h.