

Mathematics Core and Major Requirements (Bachelor of Science) – Catalog Year 2009

Course prerequisites in parentheses

**See Catalog of Studies and/or advisor for prerequisite information.

Hrs	Course Requirements	Hrs	Course Requirements	Hrs	Course Requirements
6	Freshmen Composition: <input type="checkbox"/> ENGL 1013 and <input type="checkbox"/> ENGL 1023	3	U.S. History/American Government: <input type="checkbox"/> HIST 2003 or <input type="checkbox"/> HIST 2013 or <input type="checkbox"/> PLSC 2003	9	Fine Arts/World Literature/Philosophy: <i>To be selected from at least two departments</i> Fine Arts: <input type="checkbox"/> ARCH 1003 or LARC 1003 <input type="checkbox"/> ARHS 1003 or ARTS 1003 <input type="checkbox"/> COMM 1003 <input type="checkbox"/> DANC 1003 <input type="checkbox"/> DRAM 1003 <input type="checkbox"/> HUMN 1003 <input type="checkbox"/> MLIT 1003 World Literature: <input type="checkbox"/> WLIT 1113 <input type="checkbox"/> WLIT 1123 (<i>WLIT 1113</i>), a foreign language literature course, any other WLIT course. Philosophy: <input type="checkbox"/> PHIL 2003 <input type="checkbox"/> PHIL 2103 <input type="checkbox"/> PHIL 2203
0-3	Advanced Composition: <input type="checkbox"/> ENGL 2003 or <input type="checkbox"/> ENGL 2013 <i>Exemption may be granted by:</i> 1) grade of at least "B" in ENGL 1013 and "A" in ENGL 1023 taken at the U of A, or 2) passing exemption exam	3	Social Science: <input type="checkbox"/> ANTH 1023 <input type="checkbox"/> ECON 2013 (<i>Math 1203</i>) or ECON 2143 <input type="checkbox"/> GEOG 2003 <input type="checkbox"/> PSYC 2003 <input type="checkbox"/> SOCI 2013 or SOCI 2033		
0-9	Foreign Language ¹ : See advisor for placement <input type="checkbox"/> Completion of the Intermediate I level (2003) in a single language.	18	Science and Mathematics: To be determined by the department of major and to be selected from at least two departments other than the department of the major.		
6	Western or World Civilization: <input type="checkbox"/> HIST 1003 or HIST 1113 <input type="checkbox"/> HIST 1013 or HIST 1123				

Major Requirements for a Bachelor of Science Degree in Mathematics:

❖ Science Requirements:

1. Select two of the following sequences:

- A. BIOL 1543/1541L Principles of Biology AND one of the following:
 BIOL 2533/2531L Cell Biology (*BIOL 1543/1541L, Pre/Co-req: CHEM 1123/1121L or CHEM 1223/1221L*) OR BIOL 1613/1611L Plant Biology (*BIOL 1543/1541L*)
 BIOL 1603/1601L Principles of Zoology (*BIOL 1543/1541L*) OR BIOL 2013/2011L General Microbiology (*BIOL 1543/1541L & 2 semesters of general chemistry*)
- B. CSCE 2014 Programming Foundations II and Lab (*CSCE 2004*) AND CSCE 3143 Data Structures (*MATH 2103 and [CSCE 2014]*)
- C. CHEM 1103/1101L University Chemistry (*MATH 1203*) AND CHEM 1123/1121L University Chemistry II (*MATH 1203, CHEM 1103*)
- D. GEOL 1113/1111L General Geology AND GEOL 1133/1131L Environmental Geology (*GEOL 1113*)
- E. PHYS 2054/2050L University Physics I (*Pre or Co-req: MATH 2554*) AND PHYS 2074/2070L University Physics II (*PHYS 2054, Pre/Co-req: MATH 2564*)

2. Select one advanced course from one of the chosen sequences above. Course must be approved by the department.

❖ Requirements for all Mathematics Majors:

- MATH 2103 Discrete Mathematics (*MATH 1203*)
- MATH 2574 Calculus III (*MATH 2564*)
- MATH 3083 Linear Algebra (*MATH 2554 or MATH 2043*)
- OR
- MATH 3093 Abstract Linear Algebra (*MATH 2564*)
- MATH 3404 Differential Equations and Laplace Transform (*MATH 2574*)
- MATH 4513 Advanced Calculus I (*MATH 2574, MATH 3083*)
- MATH 4932 Mathematics Major Seminar
- MATH 3113 Introduction to Abstract Algebra I (*MATH 3083*)
- CSCE 2004 Programming Foundations I and Lab

❖ In addition to the requirements above, all mathematics majors must complete one of the following options:

OPTION 1: For students pursuing careers in industrial work or graduate work in a field other than math or statistics

- MATH 3423 Advanced Applied Mathematics (*MATH 3404*)
- MATH 4353 Numerical Linear Algebra (*MATH 3083 and programming experience*) AND MATH 4363 Numerical Analysis (*MATH 4513 and programming experience*)
- OR STAT 3013 Introduction to Probability and Statistics (*MATH 2564*) AND STAT 4003 Statistical Methods (*MATH 2554*)
- An additional 3 hours of mathematics electives in courses numbered above 3000

Strongly recommended electives in this program are *MATH 4523 Advanced Calculus II (MATH 4513)* and *MATH 4443 Complex Variable for Application (MATH 3404)*

OPTION 2: For students seeking a broad background in mathematics or preparation for graduate study in mathematics

- MATH 4523 Advanced Calculus II (*MATH 4513*)
- MATH 4443 Complex Variable for Application (*MATH 3404*)
- MATH 4113 Introduction to Abstract Algebra II (*MATH 3113*)
- 3 hours of Mathematics electives in courses numbered 3000 or above

OPTION 3: For students seeking to emphasize statistics or who wish to pursue graduate studies in statistics

- MATH 3353 Numerical Methods (*MATH 2574 and knowledge in high-level computer language*)
- STAT 3013 Introduction to Probability and Statistics (*MATH 2564*)
- STAT 4003/4001L Statistical Methods (*MATH 2554*)
- *STAT 4033 Nonparametric Statistical Methods (*MATH 1203/jr. standing*)
- *STAT 4043 Sampling Techniques (*STAT 4003*)

Strongly recommended electives in this program are *STAT 5103 Theory of Statistics (MATH 2574)* and *STAT 5113 Statistical Inference (STAT 5103)*

¹Prerequisite determined by number of high school language units completed and placement score. Fulbright College students receive no credit for 1003 unless they have satisfied the College entrance requirement (2 years of a high school foreign language with another foreign language).

Electives		

Progress Check (Graduation Credit Hours Only)												
Sem	Hrs	Sem	Hrs	Rule	Cum Hrs	Cum Hrs	Cum Hrs	Cum Hrs	Cum Hrs	Cum Hrs		
Sem 1		Sem 9		8 hr								
Sem 2		Sem 10		24 hr								
Sem 3		Sem 11		(24 cont)								
Sem 4		Sem 12		40 hr								
Sem 5		Sem 13		(40 cont)								
Sem 6		Sem 14		(40 cont)								
Sem 7		Sem 15		68 hr								
Sem 8		Sem 16		124 minimum hrs required for graduation								

❖ For more information on Mathematics, contact the Mathematical Sciences Department: Science & Engineering Hall 301 / 479-575-3351 / www.uark.edu/depts/mathinfo/

**This form is NOT a substitute for the Catalog of Studies. Students should verify this information with their advisor, their degree audit, and the Catalog of Studies. **

† See Graduation Checklist at <http://fcac.uark.edu/degreeplanning/checksheets.php> for more information on degree requirements.