MATHEMATICS: ACTUARIAL SCIENCE AND FINANCIAL MATHEMATICS, BS

Degree Requirements

Requirements for Students Matriculating in or before Academic Year 2024-2025. Learn more about University Academic Regulation 3.1 (http://catalog.okstate.edu/university-academic-regulations/#matriculation).

Minimum Overall Grade Point Average: 2.50
Total Hours: 120

Code	Title	Hours
General Education Requirements		
English Composition		
See Academic Regulation 3.5 (http://catalog.okstate.edu/university-academic-regulations/#english-composition)		
ENGL 1113	Composition I	3
or ENGL 1313	Critical Analysis and Writing I	
Select one of the following:		3
ENGL 1213	Composition II	
ENGL 1413	Critical Analysis and Writing II	
ENGL 3323	Technical Writing	
American History & Government		
HIST 1103	Survey of American History	3
or HIST 1483	American History to 1865 (H)	
or HIST 1493	American History Since 1865 (DH)	
POLS 1113	American Government	3
Analytical & Quantitative Thought (A)		
MATH 2144	Calculus I (A) [1]	4
CS 1103	Computer Programming (A) [1]	3
or CS 1113	Computer Science I (A)	
Humanities (H)		
Courses designated (H)		6
Natural Sciences (N)		
Must include one Laboratory Science (L) course		
PHYS 1114	College Physics I (LN) [1]	4
or PHYS 2014	University Physics I (LN)	
Course designated (N)		2
Social & Behavioral Sciences (S)		
ECON 2103	Introduction to Microeconomics (S) [1,2]	3
Additional General Education		
Courses designated (A), (H), (N), or (S)		6
Hours Subtotal		**40**
Diversity (D) & International Dimension (I)		
May be completed in any part of the degree plan		
Select at least one Diversity (D) course		
Select at least one International Dimension (I) course		
College/Departmental Requirements		
First Year Seminar		
(Transfer students with 15 hours exempt)		1
Arts & Humanities		
See note 2.a.		3
Natural & Mathematical Sciences		
MATH 2153	Calculus II (A)	3
MATH 2163	Calculus III	3
STAT 4013	Statistical Methods I (A)	3
or STAT 4053	Statistical Methods I for the Social Sciences (A)	
Foreign Language		
See note 3		
0-6 hours		
Upper-Division General Education		
Select 6 hours outside major department		
See note 2.c.		
Hours Subtotal		**13**
Major Requirements		
Minimum GPA 2.50 and minimum grade of "C" or "P" in each course in Major Requirements.		
Mathematics Core		
Select 3 hours of the following:		3
CS 1113	Computer Science I (A)	
ENGR 1412	Introductory Engineering Computer Programming	
STAT 4091	Sas Programming	
STAT 4191	R Programming	
STAT 4193	SAS and R Programming	
MATH 2233	Differential Equations	3
MATH 3013	Linear Algebra (A)	3
MATH 3613	Introduction to Abstract Algebra	3
MATH 3583	Introduction to Mathematical Modeling	3
MATH 4453	Mathematical Interest Theory	3
STAT 4203	Mathematical Statistics I	3
Select 9 hours of the following:		9
MATH 4013	Calculus of Several Variables	
MATH 4023	Introduction to Analysis	
MATH 4063	Advanced Linear Algebra	
MATH 4083	Intermediate Analysis	
MATH 4143	Advanced Calculus I	
MATH 4233	Intermediate Differential Equations	
MATH 4263	Introduction to Partial Differential Equations	
MATH 4283	Complex Variables	
MATH 4513	Introduction to Numerical Analysis	
MATH 4553	Introduction to Optimization	
MATH 4663	Combinatorics	
MATH 4753	Introduction to Cryptography	
MATH 5473	Financial Calculus	
STAT 4213	Mathematical Statistics II [2]	
Select 3 hours of the following:		3
ECON 4213	Econometric Methods	
ECON 4223	Business and Economic Forecasting	
STAT 4043	Applied Regression Analysis	
4000-level MATH or STAT		

Professional Requirements

ACCT 2003	Survey of Accounting [2]	3
ECON 2203	Introduction to Macroeconomics [2]	3
FIN 3113	Finance [2]	3
FIN 4223	Investments	3
FIN 4333	Financial Management	3
or FIN 4763	Financial Futures and Options Markets	
or FIN 4843	Risk Management	
Select 3 hours of the following:		3
4000-level course in MATH or STAT		
STAT 5053	Time Series Analysis	
Upper-division AGEC, ECON, or FIN		
MSIS 3103	End User Database Systems Design and Management [3]	
MSIS 3393	Advanced Spreadsheet Modeling and Programming [3]	
Hours Subtotal		**51**
Electives		
Select 16 hours		16
May need to include 6 hours of a foreign language. (see note 3)		
May need to include 6 hours upper-division general education outside major department (see note 2.c.).		
MATH 1513 and MATH 1813 required for students who do not place directly into MATH 2144.		
Recommended:		
FIN 3613	General Insurance	
BCOM 3113	Written Communication	
or BCOM 3223	Oral Communication	
or SPCH 3723	Business and Professional Communication	
MSIS 2103	Business Data Science Technologies [3]	
MKTG 3213	Marketing (S) [4]	
MGMT 3013	Fundamentals of Management (S) [4]	
Hours Subtotal		**16**
Total Hours		**120**

[1]

College and Departmental Requirements that may be used to meet General Education requirements.

[2]

Minimum grade of B required for the Society of Actuaries' Validation by Educational Experience (VEE) certification.

[3]

MSIS 2103 is required when MSIS 3103 or 3393 are selected.

[4]

These courses should be selected when including pre-MBA preparation.

Other Requirements

- See the College of Arts and Sciences Requirements.
- Minimum grade of "C" or "P" in all MATH courses.
- **Upper-Division Credit:** Total hours must include at least 40 hours in courses numbered 3000 or above.

College of Arts and Sciences Requirements

1. **Hours in One Department:** For B.A. and B.S. degrees, no more than 54 hours in one department may be required to meet degree requirements. Courses used to satisfy the General Education English Composition, U.S. History, American Government, and Mathematics or Statistics requirements will not count toward the 54-hour maximum required from one department.

2. **A&S College/Departmental Requirements**
   a. Arts and Humanities are defined as any course carrying an (H) designation or courses from AMST, ART, DANC, ENGL (except ENGL 3323 Technical Writing) HIST, MUSI, PHIL (except PHIL 1313 Logic and Critical Thinking (A), PHIL 3003 Symbolic Logic (A) and PHIL 4003 Mathematical Logic and Computability), REL, TH, and foreign languages.
   b. Natural and Mathematical Sciences are defined as any course from the following prefixes: ASTR, BIOC, BIOL, CHEM, CS (except CS 4883 Social Issues in Computing), GEOL, MATH, MICR, PBIO, PHYS, and STAT; or courses from other departments that carry an (A) or (N) general education designation.
   c. Six upper-division hours are required from General Education or any CAS courses outside the student's major department (http://catalog.okstate.edu/college-arts-sciences-major-departments/). This requirement may be satisfied by courses also used to satisfy any part of a student's degree program (i.e., in General Education, College Departmental Requirements, Major Requirements or Electives).
   d. Non-Western Studies Requirement for B.A. and B.F.A.; One course in Non-Western Studies (N.W.). This requirement may be satisfied by courses also used to satisfy any part of a student's degree program (i.e., in General Education, College Departmental Requirements, Major Requirements or Electives).
   e. The College of Arts & Sciences requires a minimum 2.0 GPA in all major requirements and a minimum 2.0 GPA in all major-prefix courses applied to the degree.

3. **Foreign Language Proficiency**
   a. The foreign language requirement for the B.A. may be satisfied by 9 hours college credit in the same language, which must include 3 hours at the 2000-level, or equivalent proficiency (e.g., passing an advanced standing examination; TOEFL exam; presenting a high school transcript which demonstrates the high school was primarily conducted in a language other than English; etc.). Computer Science courses may not be used to satisfy this requirement. Currently Arabic and Mvskoke are not offered at the 2000-level at OSU.
   b. The foreign language requirement for the B.S., B.M. and B.F.A. may be satisfied by presenting a high school transcript which demonstrates two years of study of a single foreign language (passing grades at second-year level of study). It may also be satisfied by 6 hours college credit in the same language, which must include language courses 1713 and 1813, or equivalent proficiency (e.g., passing an advanced standing examination; TOEFL exam; presenting a high school transcript which demonstrates the high school was primarily conducted in a language other than English; etc.). Computer Science courses may not be used to satisfy this requirement.
   c. In addition to a. and b., students pursuing teacher certification must meet novice-high foreign language proficiency by presenting a high school transcript which demonstrates two

years of study of a single foreign language with no grade below B. Or, students may complete 3 hours college credit in a single language with no grade below C (or pass an advanced standing examination, College Level Examination Program (CLEP) exam, or Oral Proficiency Interview developed by the American Council on the Teaching of Foreign Languages, equivalent to 3 hours of college credit.) Or, students may meet the requirement by transfer of documentation of meeting the foreign language competency from one of the teacher education programs in the State of Oklahoma approved by the Oklahoma State Regents for Higher Education.

4. **Exclusions**. Courses with ATHL or LEIS prefixes and leisure activity courses may not be used for degree credit.

Additional State/OSU Requirements

- At least: 60 hours at a four-year institution; 30 hours completed at OSU; 15 of the final 30 or 50% of the upper-division hours in the major field completed at OSU.
- Limit of: one-half of major course requirements as transfer work; one-fourth of hours earned by correspondence; 8 transfer correspondence hours.
- Students will be held responsible for degree requirements in effect at the time of matriculation and any changes that are made, so long as these changes do not result in semester credit hours being added or do not delay graduation.
- Degrees that follow this plan must be completed by the end of Summer 2030.