

# MATHEMATICS COMPREHENSIVE, BACHELOR OF SCIENCE

Offered by Department of Mathematics and Statistics (<http://catalog.unk.edu/undergraduate/departments-programs/mathematics-statistics/>)

## Applied Mathematics, Computer Science, General Emphases

Code	Title	Credit Hours
<b>General Studies</b>		
<i>Foundational Requirements (LOPERs 1-4)</i>		14
LOPER 2: Writing Skills		
ENG 101	Introduction to Academic Writing	
LOPER 4: Mathematics, Statistics and Quantitative Reasoning		
MATH 115	Calculus I with Analytic Geometry <sup>1</sup>	
<i>Broad Knowledge Requirements (LOPERs 5-8)</i>		9
Take any one course in LOPER 5, LOPER 6, LOPER 7, or LOPER 8 that satisfies a Dispositional Requirement (LOPER 9 or LOPER 10) and a Broad Knowledge Requirement. The courses that meet these criteria are listed at <a href="https://catalog.unk.edu/undergraduate/general-studies/courses-satisfy-broad-knowledge-dispositional">https://catalog.unk.edu/undergraduate/general-studies/courses-satisfy-broad-knowledge-dispositional</a> ( <a href="https://catalog.unk.edu/undergraduate/general-studies/courses-satisfy-broad-knowledge-dispositional/">https://catalog.unk.edu/undergraduate/general-studies/courses-satisfy-broad-knowledge-dispositional/</a> ). See advisor for assistance.		
<i>Dispositional Requirements (LOPERs 9-10)</i> <sup>2</sup>		6
<i>Wellness (LOPER 11) Optional</i>		0
<b>BS Science-related course requirements</b>		
Complete all required courses		5
PHYS 275 & 275L	General Physics I (Calculus) and General Physics I (Calculus) Laboratory	
<b>Program-Specific Requirements</b> <sup>3</sup>		6-7
ENG 102	Special Topics in Academic Writing and Research	
CYBR 101	Computer Science I: Python for Analytics or CYBR 102 Computer Science I: C for Security or CYBR 103 Computer Science I: Java for Software Development	
<b>Major Option</b>		
Complete all required courses		52-59
<b>Unrestricted electives</b>		
Needed to reach 120 credit hour minimum		28-20
Total Credit Hours		120

Must be completed with no grade below a "C".

## Major Option

Code	Title	Credit Hours
<b>Math Comprehensive Core Requirements</b>		
MATH 202	Calculus II with Analytic Geometry	5
MATH 250	Foundations of Math	3
MATH 260	Calculus III	5
MATH 280	Linear Algebra	3
MATH 305	Differential Equations	3
MATH 350	Abstract Algebra	3
MATH 365	Complex Analysis	3
MATH 404	Theory of Numbers	3
MATH 413	Discrete Mathematics	3
MATH 420	Numerical Analysis <sup>4</sup>	3
MATH 460	Advanced Calculus I	3
STAT 441	Probability and Statistics	3
<b>Emphasis area</b>		
Select one of the following:		12-19
Applied Mathematics Emphasis (p. 1)		
Computer Science Emphasis (p. 1)		
Actuarial Science Emphasis (p. 2)		
General Emphasis (p. 2)		
Total Credit Hours		52-59

## Applied Mathematics Emphasis

Code	Title	Credit Hours
Select at least 12 credit hours of the following:		
CYBR 150	Computer Science II: Object Oriented Programming	12
CYBR 180	Discrete Structures	
PHYS 276	General Physics II (Calculus)	
PHYS 276L	General Physics II (Calculus) Laboratory	
PHYS 410	Mathematical Techniques in Physics I	
PHYS 411	Mathematical Techniques in Physics II	
STAT 345	Applied Statistics I	
STAT 442	Mathematical Statistics	
Total Credit Hours		12

## Computer Science Emphasis

Code	Title	Credit Hours
CYBR 150	Computer Science II: Object Oriented Programming	3
CYBR 180	Discrete Structures	3
CYBR 301	Computer Organization	3
CYBR 330	Algorithms and Data Structures	3
CYBR 407	Introduction to Automata, Formal Languages, and Computability	3
CYBR 408	Principles of Programming Languages	3
Total Credit Hours		18

**Actuarial Science Emphasis**

<b>Code</b>	<b>Title</b>	<b>Credit Hours</b>
ACCT 250	Principles of Accounting I	3
ACCT 251	Principles of Accounting II	3
ECON 270	Principles of Economics, Macroeconomics	3
ECON 271	Principles of Economics, Microeconomics	3
FIN 308	Principles of Finance	3
BSAD 295	Business Communications	3
MATH 445	Actuarial Science Seminar	1
Total Credit Hours		19

**General Emphasis**

<b>Code</b>	<b>Title</b>	<b>Credit Hours</b>
Select a combination of 12 credit hours of CYBR, MATH, PHYS, STAT		12
Total Credit Hours		12

1

Students without sufficient preparation will also need to take the following courses, increasing the total credit hours needed:

- MATH 102
- MATH 103

2

Designated courses with the appropriate content may be approved to satisfy one of the Broad Knowledge requirements plus LOPER 9 or Broad Knowledge plus LOPER 10. Courses may be approved to satisfy LOPER 9 or LOPER 10 alone. (Courses satisfying LOPER 9 or LOPER 10 alone must be 3 credit hours.) Students applying this option will need to take additional hours in other categories to meet the required GS hours.

3

Students who plan a Computer Science Emphasis are advised to take CYBR 103.

4

Students may substitute any 300+ level MATH or STAT course except MATH 430 or MATH 470