Department of Mathematics and Statistics, Discovery Hall
University of Nebraska at Kearney

Computer Science Comprehensive plus Math Minor*

Adding a math minor to your CS degree is one of the most beneficial degree combinations for a Computer Science major, especially if you are interested in machine learning or doing research. Your math minor will give you a good foundation in set theory, logic, and discrete probability, as well providing you with a high level of mathematical understanding. The curriculum guide for the American Association of Computing Machinery (ACM) deems this content as essential for a Computer Science education.

By carefully choosing your elective classes for the Computer Science Comprehensive degree, you can earn a minor in mathematics by taking only one three credit mathematics class beyond the mathematics classes required for your major. This guide shows you how to choose the electives in your program to also earn a math minor.

If you would like to discuss the possibility of adding a math minor to your Computer Science Comprehensive degree, please contact Dr. Barton Willis, Department of Mathematics and Statistics, Discovery Hall (DSCH), Room 368, willisb@unk.edu or 308-865-8868.

For your General Studies LOPER 4 requirement take

- **MATH 115** Calculus I with Analytic Geometry (fall and spring) . . . . . 5 credits

For your Computer Science Comprehensive Core Requirements take

- **MATH 202** Calculus II with Analytic Geometry (fall and spring, prerequisite: MATH 115) . . . . . 5 credits
- **MATH 440** Linear Algebra (spring only, prerequisite: MATH 115) . . . . . 3 credits

For your Computer Science electives take

- **MATH 250** Foundations of Math (fall and spring, prerequisite: MATH 115) . . . . . 3 credits
- **MATH 260** Calculus III (fall and spring, prerequisite: MATH 202) . . . . . 5 credits

Select your remaining credits from CYBR, PHYS, and MATH. See the catalog for details.

For your required BS Science-related course requirement take

- **STAT 441** Probability and Statistics (spring only, prerequisite: MATH 260) . . . . . 3 credits

Alternatively, you may take STAT 241, but STAT 441 will give you a better understanding of discrete probability.

To complete the Mathematics Minor take

- **MATH 413** Discrete Mathematics (fall only, prerequisite: MATH 250) . . . . . 3 credits

Alternatively, you make take either MATH 310, 350, 404, or 460, but of these options, MATH 413 is the class that is most relevant to the CS program.

Suggested mathematics course sequence

First Year Fall: MATH 115, Spring: MATH 202
Second Year Fall: MATH 260, Spring: MATH 250 and MATH 440
Third Year Fall: MATH 413, Spring: STAT 441

Once you declare a mathematics minor, your academic advisor will be happy to help you build a four-year plan for earning a minor in mathematics that fits with your other classes. If you start on a path toward earning a math minor, but latter decide to earn a Mathematics Bachelor of Science, all the mathematics and statistics classes listed here will count toward the Bachelor of Science degree.

*This plan is up to date for the 2021–2022 catalog. Also, the designation of a fall or spring class is anticipated, but it is subject to change.

Department of Mathematics and Statistics, Discovery Hall
University of Nebraska at Kearney

Computer Science Comprehensive plus Mathematics Bachelor of Science*

Adding a math major to your CS degree is one of the most beneficial combinations for a Computer Science degree, especially if you are interested in machine learning or doing research. Your math major will give you a solid foundation in set theory, logic, and discrete probability, as well providing you with a high level of mathematical understanding. The curriculum guide for the American Association of Computing Machinery (ACM) deems this content as essential for a Computer Science education.

By carefully choosing your optional classes for the Computer Science Comprehensive degree, you can earn a major in mathematics by taking only five three credit classes beyond the mathematics classes required for your major. This guide shows you how to choose the electives in your program to also earn a math major.

If you would like to discuss the possibility of adding a math major to your Computer Science Comprehensive degree, please contact Dr. Barton Willis, Department of Mathematics and Statistics, Discovery Hall (DSCH), Room 368, willisb@unk.edu or 308-865-8868.

For your General Studies LOPER 4 requirement take

- **MATH 115** Calculus I with Analytic Geometry (fall and spring) . . . . . 5 credits

For your mathematics classes required by the CS Major Option take

- **MATH 202** Calculus II with Analytic Geometry (fall and spring, prerequisite: MATH 115) . . . . . 5 credits
- **MATH 440** Linear Algebra (spring only, prerequisite: MATH 115) . . . . . 3 credits

For your Computer Science electives take

- **MATH 250** Foundations of Math (fall and spring, prerequisite: MATH 115) . . . . . 3 credits
- **MATH 260** Calculus III (fall and spring, prerequisite: MATH 202) . . . . . 5 credits

Select your remaining credits from CYBR, PHYS, and MATH. See the catalog for details.

For your required BS Science-related course requirement take

- **STAT 441** Probability and Statistics (spring only, prerequisite: MATH 260) . . . . . 3 credits

STAT 441 will count for three credits out of six required MATH or STAT electives.

For your Math Core requirements take

- **MATH 305** Differential Equations (spring only, prerequisite: MATH 260) . . . . . 3 credits
- **MATH 350** Abstract Algebra (spring only, prerequisite: MATH 250) . . . . . 3 credits
- **MATH 365** Complex Analysis (spring only, prerequisite: MATH 260) . . . . . 3 credits
- **MATH 460** Advanced Calculus I (fall only, prerequisite: MATH 250) . . . . . 3 credits

For your Math Elective take *one* of

- **MATH 413** Discrete Mathematics (fall only, prerequisite: MATH 250) . . . . . 3 credits
- **MATH 420** Numerical Analysis (spring only, prerequisite: MATH 260) . . . . . 3 credits

There are other course options, but MATH 413 and MATH 420 are recommend by the department for our dual CS and Math majors.

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Suggested course sequence

First Year Fall MATH 115, Spring: MATH 202
Second Year Fall: MATH 250 and MATH 260, Spring: MATH 305 and MATH 440
Third Year Fall: MATH 413 (unless MATH 420 is planned), Spring: MATH 350 and STAT 441
Fourth Year Fall: MATH 460, Spring: MATH 420 (unless have taken MATH 413)

Your mathematics academic advisor will be happy to help you build a four-year plan for earning a Mathematics Bachelor of Science degree.

Department of Mathematics and Statistics, Discovery Hall
University of Nebraska at Kearney

Cyber Security Operations Comprehensive, Bachelor of Science plus Math Minor*

Adding a math minor to your CS degree is one of the most beneficial degree combinations for a Computer Science major, especially if you are interested in machine learning or research. Your math minor will give you a good foundation in set theory, logic, and discrete probability, as well providing you with a high level of mathematical understanding. The curriculum guide for the American Association of Computing Machinery (ACM) deems this content as essential for a Computer Science education. This guide shows you how to choose the electives in your program to also earn a math minor.

If you would like to discuss the possibility of adding a math major to your Cyber Security Operations Comprehensive, please contact Dr. Barton Willis, Department of Mathematics and Statistics, Discovery Hall (DSCH), Room 368, willisb@unk.edu or 308-865-8868.

For your General Studies LOPER 4 requirement take

- **MATH 115** Calculus I with Analytic Geometry (fall and spring) . . . . . 5 credits

To complete the Mathematics Minor take

- **MATH 202** Calculus II with Analytic Geometry (fall and spring, prerequisite: MATH 115) . . . . . 5 credits
- **MATH 250** Foundations of Math (fall and spring, prerequisite: MATH 115) . . . . . 3 credits
- **MATH 260** Calculus III (fall and spring, prerequisite: MATH 202) . . . . . 5 credits
- **MATH 413** Discrete Mathematics (fall only, prerequisite: MATH 250) . . . . . 3 credits
- **MATH 440** Linear Algebra (spring only, prerequisite: MATH 115) . . . . . 3 credits

The classes MATH 413 and MATH 440 are the two that are the most relevant to a CS degree, but for alternatives to these classes, see the catalog.

Suggested mathematics course sequence

First Year Fall: MATH 115, Spring: MATH 202
Second Year Fall: MATH 260, Spring: MATH 250 and MATH 440
Third Year Fall: MATH 413

Once you declare a mathematics minor, your academic advisor will be happy to help you build a four-year plan for earning a minor in mathematics that fits with your other classes. If you start on a path toward earning a math minor, but latter decide to earn a Mathematics Bachelor of Science, all the mathematics and statistics classes listed here will count toward the Bachelor of Science degree.

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Physics Comprehensive plus Math Minor*

Success in Physics classes, especially Analytic Mechanics (PHYS 402), Electricity & Magnetism (PHYS 407), and Quantum Mechanics (PHYS 419) require a firm understanding of mathematics. That might help explain why nationwide about one-third of undergraduate physics majors also earn a degree in mathematics. If you choose to attend a graduate program in physics, earning a math minor will help you be successful with the math intense first year core graduate classes.

If you would like to discuss the possibility of adding a math minor to your Physics Comprehensive, please contact Dr. Barton Willis, Department of Mathematics and Statistics, Discovery Hall (DSCH), Room 368, willisb@unk.edu or 308-865-8868.

For your General Studies LOPER 4 requirement take

- **MATH 115** Calculus I with Analytic Geometry (fall and spring) . . . . . 5 credits

Physics Comprehensive Math Requirements take

- **MATH 202** Calculus II with Analytic Geometry (fall and spring, prerequisite: MATH 115) . . . . . 5 credits
- **MATH 260** Calculus III (fall and spring, prerequisite: MATH 202) . . . . . 5 credits
- **MATH 305** Differential Equations (spring only, prerequisite: MATH 260) . . . . . 3 credits

For your Math minor, take

- **MATH 250** Foundations of Math (fall and spring, prerequisite: MATH 115) . . . . . 3 credits
- **MATH 440** Linear Algebra (spring only, prerequisite: MATH 115) . . . . . 3 credits
- **MATH 350** Abstract Algebra (spring only, prerequisite: MATH 250) . . . . . 3 credits
- **MATH 460** Advanced Calculus I (fall only, prerequisite: MATH 250) . . . . . 3 credits

There are some options to these classes, but these classes are the most relevant to the physics major. Consult the catalog or your academic advisor for details.

Suggested mathematics course sequence

First Year Fall: MATH 115, Spring: MATH 202, MATH 440
Second Year Fall: MATH 260, Spring: MATH 305
Third Year Fall: MATH 250, Spring: MATH 350
Fourth Year Fall: MATH 460

Once you declare a mathematics minor, your academic advisor will be happy to help you build a four-year plan. If you start on a path toward earning a math minor, but latter decide to earn a Mathematics Bachelor of Science, all the math classes listed here will count toward the Bachelor of Science degree.

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Department of Mathematics and Statistics, Discovery Hall
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Adding a Math Minor to your Major*

As you may know, at UNK every Bachelor of Science program of study requires a second major or minor. So supplementing your major with a math minor is not only a great way to build your resumé, but it also fulfills a degree requirement.

By choosing to take Calculus I with Analytic Geometry (five credits) to satisfy your LOPER 4 General Studies requirement, you will gain five credits out of a rquired twenty-four for a mathematics minor. That leaves only nineteen credits to complete a math minor. Of these remaining credits, six are electives, allowing you to choose from classes ranging from History of Mathematics to Statistics.

If you would like to discuss the possibility of adding a math minor to your program of study, please contact Dr. Barton Willis, Department of Mathematics and Statistics, Discovery Hall (DSCH), Room 368, willisb@unk.edu or 308-865-8868.

For your General Studies LOPER 4 requirement take

- **MATH 115** Calculus I with Analytic Geometry (fall and spring) . . . . . 5 credits

For your Math minor, take

- **MATH 202** Calculus II with Analytic Geometry (fall and spring, prerequisite: MATH 115) . . . . . 5 credits
- **MATH 260** Calculus III (fall and spring, prerequisite: MATH 202) . . . . . 5 credits
- **MATH 250** Foundations of Math (fall and spring, prerequisite: MATH 115) . . . . . 3 credits

For your Math minor electives take

From the following, take *at least three* credits from

- **MATH 310** College Geometry (fall only, prerequisite: MATH 250) . . . . . 3 credits
- **MATH 350** Abstract Algebra (spring only, prerequisite: MATH 250) . . . . . 3 credits
- **MATH 404** Theory of Numbers (spring only, prerequisite: MATH 250) . . . . . 3 credits
- **MATH 413** Discrete Mathematics (fall only, prerequisite: MATH 250) . . . . . 3 credits
- **MATH 460** Advanced Calculus I (fall only, prerequisite: MATH 250) . . . . . 3 credits

And take *at most three* credits from

- **MATH 305** Differential Equations (spring only, prerequisite: MATH 260) . . . . . 3 credits
- **MATH 365** Complex Analysis (spring only, prerequisite: MATH 260) . . . . . 3 credits
- **MATH 400** History of Mathematics (fall only, prerequisite: MATH 115) . . . . . 3 credits
- **MATH 440** Linear Algebra (spring only, prerequisite: MATH 115) . . . . . 3 credits
- **STAT 441** Probability and Statistics (spring only, prerequisite: MATH 260) . . . . . 3 credits

Suggested mathematics course sequence

First Year Fall: MATH 115, Spring: MATH 202
Second Year Fall: MATH 260, Spring: MATH 250
Third Year Fall: math elective, Spring: math elective

Once you declare a mathematics minor, your academic advisor will be happy to help you build a four-year plan for earning a minor in mathematics. If you start on a path toward earning a math minor, but latter decide to earn a Mathematics Bachelor of Science, all the math classes listed here will count toward the Bachelor of Science degree.

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Department of Mathematics and Statistics, Discovery Hall
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Adding a Math Major to your Major*

As you may know, at UNK every Bachelor of Science program of study requires a second major or minor. So supplementing your program of study with a math major is not only a great way to build your resumé, but it also fulfills a degree requirement.

If you would like to discuss the possibility of adding a math major to your program of study, please contact Dr. Barton Willis, Department of Mathematics and Statistics, Discovery Hall (DSCH), Room 368, willisb@unk.edu or 308-865-8868.

For your General Studies LOPER 4 requirement take

- **MATH 115** Calculus I with Analytic Geometry (fall and spring) . . . . . 5 credits

For your Math major requirements take

- **MATH 202** Calculus II with Analytic Geometry (fall and spring, prerequisite: MATH 115) . . . . . 5 credits
- **MATH 260** Calculus III (fall and spring, prerequisite: MATH 202) . . . . . 5 credits
- **MATH 250** Foundations of Math (fall and spring, prerequisite: MATH 115) . . . . . 3 credits
- **MATH 305** Differential Equations (spring only, prerequisite: MATH 260) . . . . . 3 credits
- **MATH 350** Abstract Algebra (spring only, prerequisite: MATH 250) . . . . . 3 credits
- **MATH 365** Complex Analysis (spring only, prerequisite: MATH 260) . . . . . 3 credits
- **MATH 440** Linear Algebra (spring only, prerequisite: MATH 115) . . . . . 3 credits
- **MATH 460** Advanced Calculus I (fall only, prerequisite: MATH 250) . . . . . 3 credits

For your Math major electives take

From the following, take *at least six* credits from

- **MATH 310** College Geometry (fall only, prerequisite: MATH 250) . . . . . 3 credits
- **MATH 400** History of Mathematics (fall only, prerequisite: MATH 115) . . . . . 3 credits
- **MATH 404** Theory of Numbers (spring only, prerequisite: MATH 250) . . . . . 3 credits
- **MATH 413** Discrete Mathematics (fall only, prerequisite: MATH 250) . . . . . 3 credits
- **MATH 420** Numerical Analysis (spring only, prerequisite: MATH 260) . . . . . 3 credits
- **STAT 441** Probability and Statistics (spring only, prerequisite: MATH 260) . . . . . 3 credits

Suggested mathematics course sequence

First Year Fall: MATH 115, Spring: MATH 202, MATH 250
Second Year Fall: MATH 260, Spring: MATH 350, math elective
Third Year Fall: MATH 460, Spring: MATH 365, MATH 440
Fourth Year Fall: math elective, Spring: MATH 365, MATH 305

Once you declare a mathematics major, your academic advisor will be happy to help you build a four-year plan for earning a major in mathematics.

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