

# MATHEMATICS



**Mathematics is among the most fascinating of all intellectual disciplines, the purest of all art forms, and the most challenging of games. The study of mathematics is not only exciting, but important: mathematicians have an opportunity to make a lasting contribution to society by helping to solve problems in such diverse fields as medicine, management, economics, government, computer science, physics, psychology, engineering, and social science.**

**Bismarck State College offers courses for students majoring in mathematics, math education, and computer science. Small class size and a caring, dedicated faculty highlight the program that also serves students majoring in engineering, business, the physical and biological sciences.**

BSC offers a complete two-year curriculum for students planning to obtain a bachelor's or advanced degree with a major or minor in mathematics, computer science, or related field. Instruction is delivered in small classroom settings by faculty dedicated to student success. Students focus on analysis, problem solving, and real-life application of mathematical principles. Graphics calculators are used extensively, as well as computer software in the calculus sequence, differential equations, and linear algebra. Other core courses include university physics, and probability/statistics.

The curriculum addresses both theoretical and applied mathematics. Theoretical mathematicians advance math knowledge by developing new principles and recognizing previously unknown relationships between existing principles. They are often university professors and researchers. Applied mathematicians use theories and techniques, such as mathematical modeling and computational methods, to formulate and solve practical problems in business, industry, government, engineering, aerospace, finance, and the natural and social sciences. Learn more at [www.bismarckstate.edu/faculty/math](http://www.bismarckstate.edu/faculty/math).

## APTITUDE/PREPARATION

Mathematicians need good reasoning ability and persistence to identify, analyze, and apply basic principles to technical problems. Communication skills are important, because mathematicians must be able to interact and discuss proposed solutions with people who may not have extensive math knowledge. High school students should study as much math as possible and develop a strong background in science. Foreign language study is also helpful.

## GRADUATION

Students completing the suggested Mathematics curriculum receive an Associate in Science degree and can transfer to ND University System institutions with junior status or to other colleges and universities.

**Four-Year Degree Completion Program** – BSC has cooperative agreements with four-year universities to help students complete a baccalaureate degree on the BSC campus. Dickinson State University offers upper division courses for a Bachelor of Science in computer science, and Bachelor of Science in education with a mathematics major.

## CAREERS

Holders of bachelor's degrees can work as a systems analyst, statistician, computer programmer, computer software engineer, mathematics teacher, market research analyst, financial analyst/advisor, economist, actuary, tax administrator, or researcher in any industry or area of government. Many mathematicians work in communications, technology, data processing, insurance, technical consulting, chemical and pharmaceutical research and manufacturing, physics, aircraft manufacturing/development, engineering, astronomy, and space exploration.

## EMPLOYMENT

A double major in mathematics and another related discipline is desirable to many employers, according to the U.S. Bureau of Labor Statistics. Many colleges and universities urge or require math majors to take courses in a field closely related to mathematics

because of today's specialized occupations and job titles that reflect that occupation. Mathematicians should have substantial knowledge of computer programming, because most complex computation and modeling are done on a computer. The most successful jobseekers will be able to apply mathematical theory to real-world problems and will possess good communication, teamwork, and computer skills. Master's and Ph.D. degree holders with a strong background in mathematics and a related discipline will have the best opportunities.

**FACULTY**

For information about the Mathematics transfer program, contact Dan Leingang, Mathematics and Computer Technologies Department chairperson, at 701-224-5445, Daniel.Leingang@bsc.nodak.edu, or Linda Tonolli, associate professor of mathematics, at 701-224-5644, Linda.Tonolli@bsc.nodak.edu.

**HOW TO REACH US**

**BSC Web site:** [bismarckstate.edu](http://bismarckstate.edu)

**Application information:** 1-800-445-5073 or 1-701-224-5429 or [bismarckstate.edu/prospectivestudents/application.asp](http://bismarckstate.edu/prospectivestudents/application.asp)

**Financial Aid:** 1-701-224-5494 or [bismarckstate.edu/student/financialaid](http://bismarckstate.edu/student/financialaid)

**BSC Foundation Scholarships:** 1-701-224-2486 or [bismarckstate.edu/scholarships](http://bismarckstate.edu/scholarships)

**CURRICULUM**

**SUGGESTED CURRICULUM FOR ASSOCIATE IN SCIENCE:**

<b>FRESHMAN</b>	<b>CREDITS</b>
College Composition I-II (ENGL 110-120).....	6
Calculus I-II (MATH 165-166).....	8
Beginning Visual BASIC (CSCI 122).....	3
Art and Humanities Electives.....	6
*Electives.....	3
Enrichment .....	2
Fundamentals of Public Speaking (COMM 110) .....	3
Total credits .....	31

**SOPHOMORE**

**CREDITS**

Calculus III (MATH 265) .....	4
Introduction to Differential Equations (MATH 266) .....	3
Probability & Statistics (MATH 220).....	3
Social Science Electives.....	6
University Physics I-II (PHYS 251-252).....	8
University Physics I-II Lab (PHYS 251L-252L) .....	2
Applied Linear Algebra (MATH 227) .....	3
Total credits .....	29
*Suggested Electives: Discrete Mathematics (MATH 208), Sociology 110, Psychology 111, Economics 105, Chemistry 121-122, 121L-122L, Computer Science I and II (CSCI 160-161).	