

Mathematics

Mathematics Classes

MATH 101: Statistics

This course, which requires no specific mathematical background, is an introduction to statistical methods. Students will learn widely-used concepts, terminology, and methods of descriptive and inferential statistics. Methods of statistical inference include hypothesis testing and confidence intervals for means, proportions, and regression parameters, as well as chi-square and ANOVA methods.

Units: 3

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MATH 111: Symbolic Logic

This course, which requires no specific mathematical background, introduces valid deductive reasoning in a precise mathematical context. Students will learn formal languages encompassing elementary propositional and predicate logic, and techniques for assessing the validity of arguments expressible in those languages. Logic is foundational to mathematics, philosophy, and computer science, and indispensable in any reasonable debate.

Units: 3

Program: [Mathematics](#)

MATH 121: Introduction to Computer Science

This course is an introduction to the basic principles and great ideas of computer science. Computer science essentially deals with a particular class of problem-solving strategies called algorithms and the relative speed in which different algorithms reach similar solutions. Students will learn some of the essential topics of contemporary computer science through a mathematical perspective, and will use the Python programming language to implement their own algorithmic solutions to various problems. This course has no prerequisites.

Units: 3

Program: [Mathematics](#)

MATH 131: Network Science

This course is an introduction to the field of network science with an emphasis on the mathematical aspects and properties of networks. A network is an accessible yet powerful structure used to represent and study relationships. In practice, networks model different phenomena arising in fields such as biology, economics, sociology, computer science, and physics. In this class, we'll look rigorously at the mathematical structure of networks (this field is often referred to as graph theory), while also considering real world models, such as spread of disease, web link analysis, and financial networks. This course has no prerequisites.

Units: 3

Program: [Mathematics](#)

MATH 160: Liberal Arts Mathematics

This course helps develop quantitative, statistical, and financial literacy, indispensable for an educated, socially engaged person in today's society. Quantitative literacy involves developing confidence and competence with numbers and measures, and requires understanding of the number system, a repertoire of mathematical techniques, and an inclination and ability to solve quantitative or spatial problems in a range of contexts. Statistical literacy requires understanding of the ways in which data are gathered and represented. Financial literacy requires, besides an understanding of basic personal finance tools like savings and loans, some knowledge of today's financial and economic realities and a willingness to consider their possible impact on personal finances.

Units: 3

Program: [Mathematics](#)

MATH 170: Calculus I

This course, suitable for students with a strong pre-calculus level background, focuses on Differential Calculus. Students will review properties of functions, learn the concept of mathematical limit, and study the properties and interpretations of the derivative, using some of the more common applications. Time permitting, students will be introduced to integrals and the Fundamental Theorem of Calculus. Calculus is widely used in the sciences, economics, and statistics for modeling and computations.

Units: 4

Prerequisites:

Strong pre-calculus background, including trigonometry, exponentials, and logarithms.

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MATH 171: Calculus II

This course, suitable for students with a good background in Differential Calculus, focuses on Integral Calculus and Infinite Series. Students will review limits and derivatives, and study the properties and interpretations of the integral, using some of the more common applications. Students will also be introduced to infinite series, and their connection to Differential Calculus. Calculus is widely used in the sciences, economics, and statistics for modeling and computations.

Units: 4

Prerequisites:

A semester of university-level Calculus, or a year of high-school-level Calculus.

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MATH 290: Topics in Mathematics

This course provides students opportunities to explore topics in mathematics, such as vector calculus, number theory, symbolic logic, differential equations, and linear algebra.

Units: 4

Prerequisites:

Instructor consent required.

Program: [Mathematics](#)

MATH 390: Advanced Topics in Mathematics

This course provides students opportunities to explore advanced topics in mathematics, such as advanced calculus, complex analysis, abstract algebra, non-Euclidean geometry, and topology.

Units: 4

Prerequisites:

Instructor consent required.

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