

Mathematics constitutes an important foundation because it is a subject that provides us with the tools to explore other areas. The basics of mathematics can be used to understand how to play an instrument, design and build a house, design a bicycle, determine the accuracy of data or even balance a checkbook. There are two primary areas of mathematical science, pure (theoretical) and applied. **Pure Mathematics** is concerned principally with the research and development of new mathematical principles, without regard to immediate practical applications. **Applied Mathematics** involves using mathematical principles and theories to solve problems in fields such as business, industry, sociology, and the physical sciences. Mathematics is everywhere in modern business and industry, including: **genetic engineering, designer drugs, diesel engines, digital TV, financial markets, paper mills, electric power, insurance rates, inflation statistics, computer chips, compact disks, credit cards, car doors, circuit boards**, etc.

A Bachelor's degree in mathematics will prepare you for fascinating jobs in **statistics, actuarial sciences, mathematical modeling, cryptography (encryption coding), teaching**; as well as for graduate school leading to a **research career in mathematics** or **statistics**. A strong background in mathematics is also necessary for research in many areas of **computer science, social science, and engineering**.

**Actuaries** assemble and analyze data to estimate probabilities of an event taking place, such as death, sickness, injury, disability, or property loss. **Statisticians** contribute to scientific inquiry by applying their mathematical knowledge to the design of surveys and experiments; collection, processing, and analysis of data; and interpretation of the results. Statisticians often apply their knowledge of statistical methods to a variety of subject areas, such as biology, economics, engineering, medicine, public health, psychology, marketing, education, and sports. **Teachers**, whether at the elementary, middle, secondary school or college level, there is an increasing need for educators with excellent training in mathematics.

### Transfer Information:

- A Bachelor's degree is entry-level into many of these professions and a Master's degree or higher may be required for some. Those who want to teach math at public elementary, middle or secondary schools must have a teaching certificate in addition to a Bachelor's degree.

### Additional Information:

- Mathematical Sciences Career Information: [www.ams.org/careers](http://www.ams.org/careers)
- Careers in Math: [www.coolmath.com/careers.htm](http://www.coolmath.com/careers.htm)

