

Florida Institute of Technology— Career Management Services

Career Profile: Mathematics

Mathematics is one of the oldest and most fundamental sciences. Mathematicians use mathematical theory, computational techniques, algorithms, and the latest computer technology to solve economic, scientific, engineering, physics, and business problems. The work of mathematicians falls into two broad classes—theoretical (pure) mathematics and applied mathematics.

Theoretical mathematicians advance mathematical knowledge by developing new principles and recognizing previously unknown relationships between existing principles of mathematics. Many theoretical mathematicians are employed as university faculty. *Applied mathematicians*, on the other hand, use theories and techniques, such as mathematical modeling and computational methods, to formulate and solve practical problems in business, government, engineering, and the physical, life, and social sciences.



Mathematicians usually work in comfortable offices. They often are part of interdisciplinary teams that may include economists, engineers, computer scientists, physicists, technicians, and others. Deadlines, overtime work, special requests for information or analysis, and prolonged travel to attend seminars or conferences may be part of their jobs. Mathematicians who work in academia usually have a mix of teaching and research responsibilities. These mathematicians may conduct research alone or in close collaboration with other mathematicians.

A Ph.D. degree in mathematics usually is the minimum educational requirement for prospective mathematicians, except in the Federal Government. In the Federal Government, entry-level job candidates usually must have at least a bachelor's degree. Bachelor's degree holders who meet State certification requirements may become primary or secondary school mathematics teachers.

Employment of mathematicians is expected to increase by 22 percent during the 2008–18 decade, which is much faster than average for all occupations. Advancements in technology usually lead to expanding applications of mathematics, and more workers with knowledge of mathematics will be required in the future. However, jobs in industry and government often require advanced knowledge of related scientific disciplines in addition to mathematics. The most common fields in which mathematicians study and find work are computer science and software development, physics, engineering, and operations research. Many mathematicians also are involved in financial analysis and in life sciences research.

The average annual starting salary for mathematics majors with a bachelor's degree is: \$55,000. In March 2009, the average annual salary in the Federal Government was \$107,051 for mathematicians; \$107,015 for mathematical statisticians; and \$101,645 for cryptanalysts.

For more information on a career in Mathematics contact the Career Management Services Office or your academic advisor.

Occupational Outlook Handbook, Bureau of Labor Statistics www.bls.gov/oco
National Association of Colleges and Employers Salary Survey: Winter 2011



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