

# MATHEMATICS

## What is 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.” (from <http://www.bls.gov/oco/ocos043.htm>)

“Mathematics is the study of the measurement, properties and relationships of quantities and sets, using numbers and symbols. It is a body of related courses concerned with knowledge of measurement, properties and relations quantities, which can include theoretical or applied studies of arithmetic, algebra, geometry, trigonometry, statistics and calculus.” (from <http://www.uncwil.edu/stuaff/career/Majors/math.htm>)

## What are the career opportunities for a mathematics concentrator?

**Related Career Titles** (Some may require education beyond bachelor’s degree.)

Actuary	Cost Estimator/Analyst	Inventory Control Spec.
Aerospace Engineer	Cryptographer/Cryptologist	Investment Banker
Air Traffic Controller	Data Control Administrator	ISO 2000 Specialist
Applications Programmer	Data Processing Manager	Market Research Analyst
Applied Science Technologist	Database Manager	Mathematician
Artificial Intelligence	Demographer	Media Buyer
Astronomer	Econometrician	Meteorologist
Banking/Credit/Invest. Mgr.	Economist	Mortgage Researcher
Biometrician/ Biostatistician	EDP Auditor	Network Programmer
Commodity Manager	Employee Relations	Numerical Analyst
Compensation/Benefits Adm.	Engineer	Operations Research Analyst
Computer Consultant	Engineering Lab Technician	Physicist
Computer Engineer	Environmental Technologist	Pollution Meteorologist
Computer Facilities Mgr	Estate Planner	Production Manager
Computer Installation	External Auditor	Production Support
Computer Marketing Rep	Financial Auditor	Psychometrician
Computer Programmer	Financial Consultant	Public Health Statistician
Computer Scientist	Financial Manager	Purchasing/Contract Agent
Computer-Aided Design Tech.	Hydro Geologist	Quality Assurance Analyst

Loan/Credit Officer	Hydrologist	Rate Analyst
Cartographer	Software Engineer	Teacher
Research Analyst	Software Support Specialist	Technical Support Rep.
Risk & Insurance Specialist	Statistician	Technical Writer
Risk Analyst	Systems Analyst	Transportation Planner
Robotics Programmer	Systems Engineer	Treasury Management Spec.
Satellite Communications	Systems Programmer	Underwriter
Software Developer	Urban Planner	Value Engineer
Industrial/Institutional Buyer	Mathematics Editor	Weight Analyst

**How do you get ready?** (from

<http://career.utk.edu/students/majors/pdf/mathematics.pdf>)

- Math majors develop transferable skills, including critical thinking, problem diagnosis and solving, computer skills, and quantitative skills.
- A bachelor’s degree is often sufficient for entry-level positions, but an advanced degree may open the door to more upper-level opportunities. Pair a strong background in mathematics with another technical discipline, such as computer science or engineering.
- Gain experience through volunteering, internships, and part-time or summer jobs.
- Develop competencies in a specific area of interest.
- Supplement curriculum with courses in business, economics, computers or statistics for increased job opportunities.
- Maintain a high grade point average. Demonstrate attention to detail and commitment to accuracy.
- Build relationships with faculty for career information, contacts and letters of recommendation.
- Join related student professional associations and seek leadership positions.
- Develop the ability to work well in teams.
- Conduct informational interviews with professionals in areas of interest to enhance knowledge and make contacts.
- Stay informed of new developments and current trends in the field.

**Related Major Skills**

Problem solving	Organizational skills	Numerical computation
Ability to analyze & interpret data	Critical thinking	Computer literacy
Logical thinking	Team skills	Efficient
Systemizing skills	Advanced quantitative skills	Testing skills

### **What about the future?** (from <http://www.bls.gov/oco>.)

“Employment of mathematicians is expected to increase by 10 percent during the 2006–16 decade, as fast as the 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. Employment of actuaries is expected to increase by about 24 percent over the 2006-16 period, which is much faster than the average for all other occupations. Employment growth in the insurance industry—the largest employer of actuaries—is expected to continue at a stable pace, while more significant job growth is likely in other industries, such as health care and consulting firms.”

For additional job outlook information, refer to [www.bls.gov/oco](http://www.bls.gov/oco).

### **Available at Albright College Career Development Center’s Resource Library**

- [Great Jobs for Math Majors](#), by Stephen Lambert and Ruth J. DeCotis
- [Career Opportunities in Banking, Finance and Insurance](#), by Thomas Fitch
- [Career Opportunities in Science](#), by Susan Echaore-McDavid
- [Careers for Born Leaders and Other Decisive Types](#), by Blythe Camenson
- [Careers for Computer Buffs and Other Technological Types](#), by Marjorie Eberts and Margaret Gisler
- [Careers for Financial Mavens and Other Money Movers](#), by Marjorie Eberts and Margaret Gisler
- [Careers for Number Crunchers and Other Quantitative Types](#), by Rebecca Burnett
- [Careers for Perfectionists and Other Meticulous Types](#), Blythe Camenson
- [Careers for Puzzle Solvers and Other Methodical Thinkers](#), by Jan Goldberg
- [Careers for Scientific Types and Others with Inquiring Minds](#), by Jan Goldberg
- [Opportunities in Aerospace Careers](#), by Wallace Maples
- [Opportunities in Banking Careers](#), by Adrian A. Paradis
- [Opportunities in Engineering Careers](#), by Nicholas Basta
- [Opportunities in Financial Careers](#), by Michael Sumichrast
- [Opportunities in Information System Careers](#), by Douglas B. Hoyt
- [Opportunities in Insurance Careers](#), by Robert M. Schrayner
- [Opportunities in Purchasing Careers](#), by Kent Banning
- [Opportunities in Teaching Careers](#), by Janet Fine

### **Disclaimer**

Links to Internet sites are provided for your convenience and do not constitute an endorsement by Albright College or the Career Development Center.

Links found at <http://www.uncwil.edu/stuaff/career/Majors/index.htm>

## **Job and Internship Search Links**

- American Mathematical Society undergraduate resources <http://www.ams.org/employment>
- Math Jobs <http://math-jobs.com/us>
- Internships and Co-ops <http://www.ams.org/employment/internships.html>
- National Security Agency Careers <http://www.nsa.gov/careers/>
- Society for Industrial and Applied Mathematics <http://www.siam.org/careers/>
- Actuary.com <http://www.actuary.com>
- Be An Actuary <http://www.beanactuary.com>
- Actuarial Grads <http://www.actuarialgrads.com>
- Jobs4Actuary <http://www.jobs4actuary.com>
- Insurance/Actuarial Jobs <http://www.insurance-jobs-center.com/>

## **Career Planning Links**

- Mathematical Association of America <http://www.maa.org/careers>
- Cool Math: careers in math <http://www.coolmath.com/careers.htm>
- Careers in math [http://www.cln.org/themes/careers\\_math.html](http://www.cln.org/themes/careers_math.html)
- Occupational Outlook Handbook <http://stats.bls.gov/oco/ocos043.htm>
- NASA <http://www.nasa.gov>
- Be An Actuary <http://www.beanactuary.com>
- Mathematics of Cartography <http://math.rice.edu/~lanius/pres/map/mapcar.html>
- PLUS Magazine (math journal) - great descriptions of job options <http://www.pass.maths.org>

## **Professional Associations**

- American Mathematical Society <http://www.ams.org>
- National Council of Teachers of Mathematics <http://www.nctm.org>
- American Statistical Association <http://www.amstat.org>
- Mathematical Association of America <http://www.maa.org>
- Society for Industrial and Applied Mathematics <http://www.siam.org>
- Society of Actuaries <http://11www.soa.org/>
- U.S. Census Bureau <http://www.census.gov/hrd/www.index.html>