
MATHEMATICS

What can I do with this degree?

According to the Occupation Outlook Handbook, 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 fall into two broad classes—theoretical (pure) mathematics and applied mathematics.

Skills

Problem solving	Organize, analyze and interpret data
Flexibility	Detail-oriented
Computation	Methodical and practical
Teamwork	Energetic and self-motivated
Statistics	Logical critical thinking
Computer programming	Objective

Licenses

Society of Actuaries (SOA): certifies actuaries in the fields of life insurance, health benefits systems, retirement systems, and finance and investment.

Casualty Actuarial Society (CAS): gives a series of examinations in the property and casualty field, which includes car, homeowners, medical malpractice, workers compensation, and personal injury liability.

American Society of Pension Actuaries: offers credentials to all professionals in the retirement plan industry.

Joint board for the Enrollment of Actuaries: is a U.S. government agency that provides licenses for all professionals in the pension plan industry.

CAREER PATHS

(Some of the occupations outlined in this brochure may require additional education or training)

...in Health

Sample Job Titles

Biomathematician	Ecologist
Biomedical Engineer	Bioinformaticians

Possible Work Settings

Pharmaceutical companies
Engineering research groups

...in Government

Possible Work Settings

U.S. Census Bureau	Defense Logistics Agency
Defense Mapping Agency	Department of Defense
Department of Agriculture	Department of Health and Human Services
Department of Energy	Department of Transportation
Department of Interior	Drug Enforcement Administration
IRS	Employment & Training Admin.
Department of Commerce	National Security Agency
Health Care Financing Administration	National Technical Info. Service
Housing & Mortgage Finance	NOAA
Insurance Department	Research Agencies
Justice Department	Social Security Administration
Library of Congress	U.S. Armed Forces
NASA	U.S. Bureau of Justice
National Highway Traffic Safety Admin.	U.S. Bureau of Labor Statistics
National Institute of Standards & Tech.	U.S. Customs Service
	Weights & Measures

...in Business/Industry

Sample Job Titles

Applied Mathematician	Investment Manager
Business Analyst	Market Researcher
Communications Engineer	Product Developer
Economic Analyst	

Possible Work Settings

Hospitals and clinics	Defense
Criminal justice	Natural resources management
Protective service	Technology
Environment	Communications
Social services	Manufacturing
Transportation	Biological sciences
Energy policy	

...in Operations Research

Sample Job Titles

Operations research analyst
Systems engineer
Operations research specialist

Management analyst
Principal analyst
Strategic financial manager

Possible Work Settings

Telecommunications firms
Air carriers
Computer and data processing firms
Financial institutions
Government agencies
Automobile manufacturers

Private consulting firms
Manufacturers of machinery and transportation equipment
Banks and insurance companies
Research and testing organizations
Market research firms

...in Statistics

Sample Job Titles

Biometrician
Demographer
Econometrician
Psychometrician
Quality control analyst
Statistician
Sports statistician (official scorer)

Statistical clerk
Compilers
Advertising statistical clerks
Medical record clerks and technicians
Chart calculators
Planimeter operators
Chart changers

Possible Work Settings

Professional athletic teams
Television and radio stations and networks
College and university sport programs
Elias Sports Bureau, Stats, & Sports Ticker
Government agencies
Insurance companies

Utility research and testing services
Management and public relations firms
Computer and data processing firms
Manufacturing companies
Financial services firms
Pharmaceutical industry
Automobile industry

...in Actuarial and Insurance

Sample Job Titles

Actuary
Securities
Benefits specialist
Financial analyst
Investment analyst

Casualty actuary
Pension actuary
International actuary
Long-term care actuary
Risk-management actuary

Possible Work Settings

Insurance companies	Health maintenance organizations
Pension plans	Brokerage firms
Consulting firms	Banks
Government agencies	Savings & loans associations
Financial service firms	

...in Education & Research

Sample Job Titles

Theoretical mathematician	Community College Instructor
Applied mathematician	Teacher - Primary, Junior High, High School
Research scientist	
College or University Professor	

Possible Work Settings

Colleges and universities	Private and public schools
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...in Computer and Information Sciences

Sample Job Titles

Applications Programmer	Computer Systems Analyst
Computational Scientist	Weight Analyst
Computer Applications Software Engineer	Cryptanalyst
Computer Programmer	Mathematical modeling
	Database Administrator

Possible Work Settings

Government laboratories	Computer and electronics manufacturers
Chemical industry	Energy companies
Biotechnology industry	Defense contractors
Computer service firms	

...in Other Areas

Sample Job Titles

Computational Biology and Genomics	Law
Data Mining	Medicine
Neuroscience	Economist
Materials Science	Computer Animation and Digital Imaging
Engineering	

Possible Work Settings

Hospitals and clinics	Transportation	Technology
Criminal justice	Energy policy	Communications
Protective service	Defense	Manufacturing
Environment	Natural resources	Biological sciences
Social services	management	

RESOURCES

Career Library Resources

Great Jobs for Math Majors by Stephen E. Lambert and Ruth J. DeCotis

Career Opportunities in Science by Susan Echaore-McDavid

Ferguson's Careers in Focus: Mathematics & Physics.

Professional Organizations

Actuarial Foundation	http://www.actuarialfoundation.org/
American Academy of Actuaries	http://www.actuary.org/
American Federation of Teachers	http://www.aft.org/
American Mathematical Society	http://www.ams.org/
American Society of Pension Actuaries	http://www.aspa.org/
American Statistical Association	http://www.amstat.org/
Association for Symbolic Logic	http://www.asonline.org/index.htm
Association for Women in Mathematics	http://www.awm-math.org/
Casualty Actuarial Society	http://www.casact.org/
Caucus for Women in Statistics	http://www.caucusforwomeninstatistics.com/
Conference of Consulting Actuaries	http://www.cactuaries.org/
Consortium for Mathematics and Its Applications	http://www.comap.com/
Econometric Society	http://www.econometricsociety.org/
Institute for Operations Research and the Management Sciences	http://www.informs.org/
Institute of Mathematical Statistics	http://www.imstat.org/
International Association for Mathematical Geosciences	http://www.iamg.org/
Mathematical Association of America Online	http://www.maa.org/
National Association of Mathematicians	http://www.nam-math.org/
National Council of Supervisors of Mathematics	http://www.ncsmonline.org/
National Council of Teacher of Mathematics	http://www.nctm.org/
National Education Association	http://www.nea.org/
Professional Science Masters	http://www.sciencemasters.com/
School Science and Mathematics Association	http://www.ssma.org/
Society for Industrial and Applied Mathematics	http://www.siam.org/
Society of Actuaries	http://www.soa.org/
Women and Mathematics Education	http://wme-usa.org/

Job Search

American Mathematical Society, <http://www.ams.org/employment/>

Be an actuary, <http://www.beanactuary.com/>

National Security Agency, <http://www.nsa.gov/>

Society of Industrial and Applied Mathematics, <http://www.siam.org/careers/>

U.S. Office of Personnel Management, <http://www.usajobs.opm.gov/>

Actuary.com, <http://www.actuary.com/>

Actuary Jobs, <http://www.actuaryjobs.com/>

Consulting Actuary, <http://www.consultingactuary.com/jobs/>

Additional Resources

What you can do with a math degree,

<http://www.math.ucsc.edu/undergraduate/careers/index.html>

Young Mathematicians' Network, <http://concerns.youngmath.net/>

Sloan Career Cornerstone Center, <http://www.careercornerstone.org/index.htm>

Information for this handout compiled from:

Texas State University Career Services, Department of Mathematics at Rice University, Department of Mathematics at University of California Santa Cruz, Career Services at University of Tennessee-Knoxville, Career Services at University of Wisconsin-Eau Claire, Career Service at Oklahoma State University