MATHEMATICS
What can I do with this major?

AREAS	EMPLOYERS	STRATEGIES

MATHEMATICS/COMPUTATIONAL SCIENCE

Research:
    Theoretical
    Applied
Mathematical Specialties Include:
    Modeling and Simulation
    Numerical Methods and Analysis
    Statistics and Probability
    Engineering Analysis
    Differential Equations
    Operations Research
    Discrete Mathematics
Functional Areas Include:
    Accounting and Finance
    Computer Programming
    Computer Systems Analysis
    Operations
    Sales and Marketing
    Management
    Actuarial Science
    Engineering
    Analysis and Control of Processes
    Optimization and Scheduling of Resources

State government agencies
Federal government including:
    Department of Defense
    National Aeronautics and Space Administration
    National Oceanic and Atmospheric
        Administration
    Social Security Administration
    Department of Homeland Security
    Department of Energy
    Military
    Government laboratories
Scientific research and development services
Consulting firms
Computer services companies and software
    publishers
Electronics and computer manufacturers
Engineering firms
Insurance companies
Financial services firms
Chemical and pharmaceutical companies
Aerospace and transportation equipment
    manufacturers
Airlines and airports
Communications firms
Energy companies and petroleum producers
International government agencies
Nonprofit organizations, e.g. American Institute of
    Mathematics

Plan to earn a doctoral degree to work as a
    "mathematician."
To work in applied mathematics, consider earning
    a double major in a scientific or technical area.
    Many students with a bachelor's or master's
    degree in math work in related fields such as
    computer science, engineering, science, or eco-
    nomics.
Some entry-level jobs in industry and government
    may be available at the bachelor's level.
Develop substantial knowledge of computer
    programming and software administration. Seek
    experience with relevant software packages.
Learn to work well with a team of people from diverse
    backgrounds and differing technical specialties.
Gain experience in an area of interest through intern-
    ships or research programs such as those spon-
    sored by the National Science Foundation.
Maintain a high grade point average and secure
    strong faculty recommendations to gain graduate
    school admittance.
Research government hiring processes and intern-
    ship opportunities if the public sector appeals to
    you.

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EDUCATION

AREAS	EMPLOYERS	STRATEGIES
Teaching Research Higher Education Administration	Public and private K-12 schools Universities and colleges	Develop excellent communication skills, verbal and written. Gain experience working with age group of interest through volunteering and tutoring. Acquire appropriate state teacher certification for K-12 teaching opportunities. Math majors may be eligible for alternative certification programs in certain public school systems. Some private schools may hire candidates with degrees in mathematics who don't hold certification. Earn a doctoral degree in math to teach at four-year institutions. A master's degree may be sufficient for two-year colleges. Maintain a high grade point average and secure strong faculty recommendations to prepare for graduate school. Assist a professor with research. Seek appropriate graduate degree to enter higher education administration. Gain experience on campus in student leadership roles such as Resident Assistant or Orientation Leader.

COMPUTERS

AREAS	EMPLOYERS	STRATEGIES
Programming Systems Development Systems Analysis Software Development Network Administration Web Administration Technical Support Training	Most areas of business including: Computer services companies Software publishers Internet related companies Financial institutions Insurance companies Consulting firms Manufacturers Telecommunications companies Retailers Healthcare organizations Hotels and restaurants Entertainment companies Environmental management firms	Develop substantial knowledge of computer programming and software administration. Take classes to earn relevant certifications. Gain related experience through internships, part-time positions, or summer jobs. Work in a campus computer lab or volunteer to maintain the website for a student organization. Learn effective listening and verbal communication skills and how to work well with end users. Stay abreast of the latest developments in computer technology through reading journals and partici-pating in professional associations. Consider earning an advanced degree in computer science or management information systems. Research degree requirements.

AREAS	EMPLOYERS	STRATEGIES

COMPUTERS CONTINUED

AREAS	EMPLOYERS	STRATEGIES
	Education institutions City, state, and federal government	Exhibit patience and creativity for designing programs. To advance into management, learn to effectively manage multiple projects and to meet deadlines. Obtain experience with public speaking/teaching and learn to develop curriculums for training positions.

INSURANCE

AREAS	EMPLOYERS	STRATEGIES
Actuarial Science Risk Management/Assessment Loss Management/Control Underwriting	Insurance carriers Insurance agents and brokers Professional, scientific, and technical consulting firms Government agencies	Take additional courses in statistics and finance. Complete an internship with an insurance agency to gain relevant experience. Actuarial science is a good career path for those who want to extensively use math on the job. Areas such as claims, underwriting, and risk management are less math-intensive. Talk to professionals in the industry to learn more about various positions. Develop strong communication skills, as many positions require interaction with others and the ability to explain information clearly and concisely. Learn how to use statistical analysis software and various computer programming languages. Plan to take a series of actuarial exams to gain licensure from either the Society of Actuaries or the Casualty Actuarial Society. The type of insurance you deal with will determine which path to pursue. Most actuaries take these exams while working full-time, and the process takes several years. More than half of actuaries work for insurance carriers.

AREAS	EMPLOYERS	STRATEGIES

BANKING AND FINANCE

Corporate and Consumer Credit Analysis	Commercial banks	Double major or minor in business to build a solid background in marketing, finance, and accounting.
Commercial Lending	Credit unions	
Trust Management	Savings and loan associations	
Capital Services and Mergers and Acquisitions	Savings banks	Gain experience through part-time, summer or internship positions in a financial services firm.
Mortgage Loans	Mortgage banks	
Originations and Packaging	Captive finance companies	Develop strong interpersonal and communication skills in order to work well with a diverse clientele.
Branch Management	Regulatory agencies including:	
Operations	Federal Reserve	
Cash Management	Federal Deposit Insurance Corporation (FDIC)	Serve as the financial officer or treasurer of a student organization.
Credit Scoring and Risk Management	Office of the Comptroller of the Currency (OCC)	
Private Banking	Office of Thrift Supervision (OTS)	Plan to earn an MBA to enter investment banking.
Financial Analysis	Brokerage firms	Be geographically flexible when job searching.
Investment Banking		

OTHER BUSINESS AREAS

Buying	Retailers	Obtain experience through internships or summer and part-time jobs.
Purchasing	Wholesalers	
Sales:	Hospitals	Seek leadership positions in campus organizations.
Industrial Sales	Universities and schools	Become highly motivated and well-organized.
Consumer Product Sales	Local, state, and federal government	Develop strong analytical skills and the ability to communicate effectively with a wide range of people. Take additional courses in interpersonal communication and public speaking.
Financial Services Sales	For-profit and nonprofit organizations	
Services Sales	Product and service organizations	
Advertising Sales	Manufacturers	
E-commerce	Financial companies	To prepare for a buying position, work in a retail store to learn about the industry.
Customer Service	Insurance companies	
Sales Management: District, Regional, and Higher	Print and electronic media outlets	Research certification options within the purchasing field.
	Software and technology companies	For Sales:
	Internet companies	Work for the campus newspaper, directory, or radio station selling advertisements.
		Learn to work well under pressure and to be comfortable in a competitive environment.
		Prepare to work independently and to be self-motivated.
		Plan to work irregular and/or long hours.

GENERAL INFORMATION

- Math can be found in almost every sector of the world of work. Students majoring in math should consider if they want to use math skills directly or indirectly in the work place. This may determine the types of experiences and further education necessary to prepare for area of interest.
- People with math backgrounds may work in jobs with titles such as: analyst, research associate, technical consultant, computer scientist, or systems engineer to name a few.
- Math majors develop many transferable skills including critical thinking, problem diagnosis and solving, computer skills, and quantitative skills. Other important skills to develop include good reasoning, persistence, and communication, both verbal and written.
- Seek relevant experiences through internships or part-time jobs.
- Supplement curriculum with courses in business, economics, computers, or statistics for increased opportunities.
- Consider earning a graduate degree in a related area such as statistics, computer science, science, or engineering. Some examples of specialties that utilize a background in math combined with study in another field include: bioinformatics, computer animation and digital imaging, climatology, or financial mathematics.
- Research the Professional Science Master's degree as an option to earn an interdisciplinary graduate degree and prepare for a job in industry.
- Join relevant organizations and seek leadership roles. Learn to work well in a team environment.
- 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.