What to do with a degree in Mathematics

The Curriculum
The Mathematics Department at Oklahoma State University offers an exciting environment for collegiate study with an award-winning, internationally renowned faculty. Over three quarters of our faculty members have obtained recent research grants and awards from the National Science Foundation and other sources. Small class sizes make it easy to interact with the faculty, and innovative courses such as the project-oriented Math Modeling course and a weekly Problem Solving Seminar enhance the curriculum. The flexibility of our degree programs and the breadth of our course offerings enable all our majors to find their best plan of study.

Math Majors develop the following skills:

- **Analytical Skills:** You will be trained to recognize problems, distill and define the pertinent issues, determine under exactly what circumstances a solution exists and to find that solution.

- **Mastering new ideas and skills:** Absorb very complex new concepts quickly and to immediately begin the process of discovering the implications and depth of these new ideas.

- **Innovation:** The ability to distill the common threads of diverse concepts and techniques into their fundamental principles and then apply these principles in new areas.

- **Computer Skills:** Develop a wide range of computer skills from the mundane to cutting edge tools such as symbolic manipulation & computing theory.

- **Probability and Statistics:** Statistical analysis, sampling techniques and data acquisition as well as a fundamental understanding of the underlying principles.

- **Modeling:** Development and use of mathematical models of physical phenomena and understanding the importance and limitations of the predictions based on these models.

- **Research and Presentation Skills:** Ability to make and interpret graphs, tables and charts; Library research techniques; Technical writing skills.

Depending on your desired career path, additional skills may need to be developed to be competitive in the marketplace upon graduation. Make an appointment with a career consultant to design your individual career development plan.

Job & Internship Web Sites

- American Mathematical Society
  http://www.ams.org/early-careers/
- American Mathematical Society Job Bulletin
  http://www.ams.org/
- Be an Actuary
  http://www.beanactuary.org
- Careers in Math
  http://www.math.com/students/advice/careers.html
- Institute of Mathematical Statistics
  http://www.imstat.org/jobs/default.htm
- Society for Industrial and Applied mathematics
  http://jobs.siam.org/home/index.cfm?site_id=686
- Mathematical Association of America
  http://www.maa.org/pubs/employ.html
- Association of Women in Mathematics
  http://www.awm-math.org/career.html
- American Statistical Association
  http://www.amstat.org/careers/career.html
- Sloan Career Cornerstone Center
  http://www.careercornerstone.org/mathematics/mathematics.htm
- Careers in Business
  http://www.careers-in-business.com
- Careers in Finance
- Office of Science
  http://www.scied.science.doe.gov/
- Internships at EDS
  http://www.eds.com/careers/overview/cr_overview.shtml
- NASA Academy Summer program
  http://www.academy.nasa.gov
- AMS Internship & Co-op list for Undergraduates
  http://www.ams.org/employment/internships.html
- United States Office of Personnel Management
  http://www.usajobs.opm.gov/
- Center for Statistics in Education
  http://www.amstat.org/education/index.cfm?fuseaction=main

Come See Us!
College of Arts & Sciences Career Services
Student Success Center, 213 LSE
phone: 405-744-5658
email: ascareers@okstate.edu
website: cascareers.okstate.edu
Appt calendar: ascalendar.okstate.edu
Potential Career Paths Include

Mathematical Modeling
In mathematical modeling, you write down equations to describe how a real world system behaves. The “system” might be drawn from many different fields. For example, most financial companies hire mathematicians to study financial models and make predictions based on statistical evidence.

Finance
Wall Street and banking have become a major employer of math majors. Many investment and financial firms consider mathematicians prized hires.

Statistics
The proliferation of statistics in everything ranging from business to government has induced many organizations to seek math majors. One business with an extreme interest in statistics is insurance. The professionals responsible for computing insurance rates are specialist statisticians called actuaries.

Where Mathematics Meets Computer Science
Beyond mere proficiency in computer programming, math majors are trained to address the more fundamental issues, the creation of computer graphics and the compression of video and audio signals (to name a few examples) involve a great deal of deep mathematics, and as a result, many computer companies specifically hire math majors.

Cryptography
One area that is particularly “hot” these days is cryptography - the making and breaking of secret codes. Number theory is the branch of pure mathematics which provides the theoretical underpinnings for much of the recent progress in cryptography.

Biotech
Many biotech companies hire mathematics majors because of the high mathematical content of the field.

Teaching
Every year, roughly half of the positions advertised for secondary school teachers in math go unfilled. Schools are desperate for qualified math majors.

Sample Related Occupations

<table>
<thead>
<tr>
<th>Field</th>
<th>Sample Occupations</th>
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<tbody>
<tr>
<td>Actuary</td>
<td>Estimator</td>
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<tr>
<td>Mathematician</td>
<td>Appraiser</td>
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<tr>
<td>External Auditor</td>
<td>Numerical Analyst</td>
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<td>Benefits Administrator</td>
<td>Financial Aid Director</td>
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<tr>
<td>Financial Manager</td>
<td>Operations Research Analyst</td>
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<td>Bank Examiner</td>
<td>Payroll Manager</td>
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<tr>
<td>Budget Analyst</td>
<td>Financial Planner</td>
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<td>Production Manager</td>
<td>Claims Adjuster</td>
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<tr>
<td>Foreign-Exchange</td>
<td>Psychometrist</td>
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<td>Commodities</td>
<td>Information Scientist</td>
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<td>Purchasing Agent</td>
<td>Computer Programmer</td>
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<tr>
<td>Insurance Agent/Broker</td>
<td>Quality Control Analyst</td>
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<td>Contract Admin.</td>
<td>Int’l Trade Specialist</td>
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<tr>
<td>Securities Broker</td>
<td>Controller</td>
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<td>Inventory Control</td>
<td>Statistician</td>
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<td>Cost Estimator</td>
<td>Investment Analyst</td>
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<td>Systems Analyst</td>
<td>Loan Officer Investment</td>
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<td>Research</td>
<td>Teacher</td>
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<tr>
<td>Cryptologist</td>
<td>IRS Investigator</td>
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<td>Technical Writer</td>
<td>Data Base Mgr.</td>
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<td>Management Trainee</td>
<td>Treasurer</td>
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<tr>
<td>EDP Auditor</td>
<td>Market Research</td>
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<tr>
<td>Trust Analyst</td>
<td>Engineering Analyst</td>
</tr>
<tr>
<td>Mathematical Technician</td>
<td>Underwriter</td>
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</tbody>
</table>

Types of Employers

Private/Non Profit
Aerospace Companies
Market Research Firms
Banks
Mortgage Companies
Education
Pharmaceuticals
Computer Firms
R & D Firms
Economic/Social Science Pollsters
S & L Associations
Engineering/ Manufacturing
Stock Brokerage Houses
Insurance Companies
Test Devel. Corporations
Investment Firms
Utilities

Government
Bureau of Labor Statistics
State Planning Offices
Capital Budgeting & Planning
NASA
Defense Logistics Agency
Defense Mapping Agency
Institute of Standards & Tech.
Drug Enforcement Administration
National Security Agency
National Technical Info. Service
NOAA
Employment & Training Admin.
Economics Management
Research Agencies
Housing & Mortgage Finance
Transportation Dept.
Insurance Department
U.S. Customs Service
Justice Department
Weights & Measures
Library of Congress
Investment Agencies
Health Care Financing Administration

College of Arts & Sciences Career Success Guide
Provided to all new, incoming students as an introduction to the career planning process. If you don’t have a Guide...Get one!!!