

Bachelor of Science: Mathematics

Minor: Mathematics

Mathematics is the study of quantitative relationships expressed in numbers and symbols. Mathematics majors develop the ability to explore, conjecture, reason logically, and use mathematical methods to solve problems.

The Bachelor of Science in Mathematics is ideal for students who wish to pursue graduate study in mathematics or prepare for careers in mathematics or mathematically-related areas such as operations research, statistics, actuarial science, physical sciences, and computer sciences. Employers recommend one or more internships to be successful and competitive when entering this field.

Career types associated with Mathematics

(Is this a good fit for you? Are you a...)

- Investigative - “Thinker”
- Realistic - “Doer”
- Enterprising - “Leader”

Related skills, values, and qualities

- Ability to make appropriate decisions and solve quantitative problems
- Ability to concentrate for long periods of time
- Proficiency in reading, writing, thinking, questioning, analyzing and problem solving
- Ability to understand concrete & abstract mathematical concepts
- Aptitude for accuracy and detail
- Ability to organize, analyze & interpret numerical data
- Proficiency with a scientific calculator and computers
- Aptitude for accuracy and detail
- Ability to conduct and explain scientific research

Courses Mathematics majors typically enjoy

- Accounting
- Computer Programming
- Mathematics (Algebra/Trigonometry/Calculus)
- Physics
- Statistics

Common interests of Mathematics majors

- Completing puzzles or playing games of strategy
- Solving logic problems
- Participating in quiz bowls and other competitions
- Serving as treasurer or statistician for an organization
- Participating in math, science, or investment clubs
- Reading computer publications

For more information about the major

Contact the Mathematics Department,
227 Lytle, 610-683-4410, or visit
www.kutztown.edu/Mathematics

KU Majors related to Mathematics

Accounting, Computer Science, Finance, Physics,
Secondary Education-Mathematics

Investigative students may also be interested in:
Anthropology, Biology, Biochemistry, Chemistry,
Criminal Justice, Economics*, Environmental Science,
Geography, Geology, German Studies, History,
International Studies*, Marine Science, Multicultural
Studies*, PA German Studies*, Political Science,
Psychology, Sociology, and Spanish

* minor only

FOUR STEPS TO SUCCESS

EXPLORE

DISCOVER

EXPERIENCE

IMPLEMENT

1ST YEAR

2ND YEAR

3RD YEAR

4TH YEAR

- Enroll in the Career Exploration Certificate.
- Attend info sessions to learn about career development and personal branding.
- Take a career assessment to identify and confirm interests.
- Get involved in campus clubs and organizations.
- Develop basic workplace skills through jobs or volunteer work.
- Talk with professors, family, and friends about career ideas.
- Conduct informational interviews with professionals working in fields of interest.
- Develop a relationship with your professors and faculty advisor.
- Meet with CDC career coach.
- Attend info sessions to learn about resume writing, and externships.
- Confirm your choice of major and consider options for double major or minor.
- Research careers of interest.
- Complete a job shadowing (externship) experience.
- Seek meaningful employment or volunteer work in a field related to your major.
- Explore options for undergraduate research and study abroad.
- Write a resume and have it reviewed by the CDC.
- Manage your online presence.
- Enroll in the Career Success Certificate.
- Complete an internship and/or undergraduate research.
- Attend info sessions about internships, interviewing, job search strategies, and grad school.
- Build a LinkedIn profile and continue to monitor your online presence.
- Complete a mock interview.
- Build skills through research projects, part-time employment, and volunteer work.
- Participate in employer panels, site visits & networking events.
- Attend internship & job fairs.
- Take on a leadership role in a student organization or work.
- Consider graduate school options and prepare for admissions tests.
- Attend your Senior Kick-off and other info sessions to prepare for job search/grad school.
- Update your resume and LinkedIn profile.
- Create cover letter drafts.
- Gain experience through internships and/or undergraduate research.
- Secure references for job/grad school applications.
- Create your “30 second” commercial/elevator pitch.
- Meet with CDC to develop job search strategies.
- Research employers.
- Network with professionals through events and social media.
- Join a professional organization in your discipline.
- Attend the senior etiquette luncheon or dinner.
- Participate in job fairs and on-campus interviewing.

Sample Career Titles

Mathematics majors can be found working in a wide variety of career fields. Here are just some career titles that may be of interest. Please note that some jobs may require further education and training.

To learn more about these careers, visit <http://online.onetcenter.org> or www.bls.gov/oco.

- Accountant
- Actuary
- Aerospace Engineer
- Air Traffic Controller
- Analyst
- Applications Programmer
- Applied Science Technologist
- Appraiser
- Architect
- Artificial Intelligence Programmer
- Astronomer
- Banking/Credit/Investment Manager
- Biometrician/Biostatistician
- Cartographer
- Commodity Manager
- Compensation/Benefits Administrator
- Computer Engineer
- Computer Facilities Manager
- Computer Marketing/Sales
- Computer Programmer
- Consumer Loan/Credit Officer
- Credit Manager
- Cryptographer/Cryptologist
- Data Control Administrator
- Data Processing Manager
- Database Manager
- Demographer
- Econometrician
- Economist
- Educator
- Engineer
- Engineering Lab Technician
- Environmental Technologist
- Estate Planner
- External Auditor
- Financial Auditor
- Financial Consultant/Manager
- Geologist
- Hydrologist
- Information Scientist
- Inventory Control Specialist
- Investment Banker
- Market Research Analyst
- Mathematician
- Metallurgist
- Meteorologist
- Mortgage Researcher
- Nuclear Scientist
- Operations Research Analyst
- Pharmacologist
- Physicist
- Production Manager
- Psychometrician
- Public Health Statistician
- Purchasing/Contract Agent
- Quality Assurance Analyst
- Rate & Risk Analyst
- Risk & Insurance Specialist
- Satellite Communications Specialist
- Software Development Specialist

Common Internship Sites and Employers

Mathematics majors often find internships and employment in the following fields/industries.

- Aerospace Development
- Banks & Investment Firms
- Business & Industry
- Colleges/Universities
- Engineering Firms
- Insurance Agencies
- Medical Field
- Public & Private Schools
- Research & Development Firms
- State/Federal Government
- Technical Publication Companies
- Utility Companies

Handshake

Handshake is the primary online resource for preparing and connecting students and alumni with employers.
www.kutztown.edu/handshake

Useful Websites for Mathematics Majors

Whether you are researching related career fields, applying for internships or jobs, or planning to join a professional association, these websites are for you!

Industry/Employment Information

Be an Actuary
www.beanactuary.org

Careers in Federal Government
www.makingthedifference.org

Careers in Math
www.coolmath.com/careers.htm

Careers in Applied Mathematics
www.siam.org/careers/thinking.php

DICE
www.dice.com

Math Jobs
www.math-jobs.com

Sloan Career Cornerstone Center
www.careercornerstone.org

TechnoCentral
www.technocentral.com

We Use Math in Careers www.weusemath.org

Professional Associations

American Mathematical Society
www.ams.org

American Statistical Association
www.amstat.org

Association for Women in Mathematics www.awm-math.org

Mathematical Association of America www.maa.org

Society of Actuaries
www.soa.org

Society for Industrial & Applied Mathematics www.siam.org

Society of Mathematical Biology
www.smb.org

Related Area Employers

Chatham Financial
Clark Associates, Inc.
NFI Industries
Northwestern Mutual - Eastern PA
PLS Logistics Services
PPL Electric Utilities
State Farm-Shawn Leh Agency
TD Bank
Vanguard

Building Your Resume for a Career in Mathematics

Building a strong resume for your career field starts long before you ever start your job search. Employers want to hire graduates who not only have the necessary educational background but also have experience applying that knowledge.

Melina Mathematics

mmath000@live.kutztown.edu, www.linkedin.com/in/melina, 555-555-5555

PROFILE

Interested in becoming an actuary associate to review losses and expenses.

QUALIFICATIONS

- Strong analytical and problem solving skills
- Experience working with rate reviews and assessing premiums, losses and expenses
- Excellent oral and written communication skills
- Proficient in ~~Matlab~~ Matlab, SPSS, JavaScript & Microsoft Office

EDUCATION

B.S. Kutztown University of Pennsylvania Kutztown, PA
Major: **Mathematics** May 20xx
Minor: **Economics**
GPA: 3.58
Dean's List Fall 20xx-Spring 20xx

Related Courses: Probability & Statistics I & II, Combinatorics, Numerical Analysis, Real Analysis I & II, Theory of Numbers, Mathematics of Finance I & II, Microeconomics, Macroeconomics

INTERNSHIP & EXTERNSHIP EXPERIENCE

Allstate Allentown, PA
Actuary Intern Fall 20xx-Present

- Assist actuary associates in reviewing premiums, losses and expenses
- Perform rate review activities including implementation of new rating plans
- Analyze adequacy of current rates

Extern Sept. 20xx

- Observed process of assessing losses and expenses
- Discussed rates regarding property and casualty assessment

RELATED WORK EXPERIENCE

Kutztown University Tutoring Center Kutztown, PA
Statistics Tutor Fall 20xx-Present

- Assist students one-on-one in Probability & Statistics I & II
- Create individualized study guides and practice quizzes
- Answer inquiries regarding material comprehension and problem solving

CAMPUS INVOLVEMENT

Kutztown University Math Club Fall 20xx-Present
President

- Organize and facilitate monthly club meetings
- Coordinate professional speaker events focusing on mathematical research and careers
- Oversee new member induction and event promotion

Member Spring 20xx-Present

KuBOK, Kutztown Neighborhood Watch Program Fall 20xx-Present
Volunteer

- Patrol campus and community to ensure safety of students and individuals, escort students home safely

PROFESSIONAL DEVELOPMENT

Member, Kappa Mu Epsilon National Honorary Mathematics Society Spring 20xx-Present
Member, Association for Women in Mathematics Fall 20xx-Present
Recipient, Career Success Certificate, Kutztown University Career Development Center Spring 20xx
Recipient, Career Exploration Certificate, Kutztown University Career Development Center Fall 20xx

Learn more about your field and develop the necessary skills for employment by gaining hands-on experience through clinical practice.

Utilize summer breaks to acquire valuable experience via volunteer or employment opportunities related to your major.

Develop professionally through campus involvement and professional memberships. This illustrates responsibility, leadership abilities and time management skills.