### Systems Engineer

Most students choose to major in math because they like the subject, find it interesting and challenging, and find they are good at it. These are great reasons to major in math! But now you may be wondering what you can do in your future career. How can math help you? As a math major, you’ll learn the overall skill of problem solving, a skill needed for any job setting. A math degree can make you stand out when applying to a variety of jobs, because your problem solving, analytical thinking, and computational skills can set you apart from other job applicants.

Often students with math majors go on to pursue master’s or PhD degrees after their undergraduate degree. With a master’s degree in math, you can teach at community college, and with a PhD, you’ll do mathematical research and likely teach at a 4-year college or university. If you want to go to a professional graduate program like business, law, or medicine, a degree in math can be beneficial to helping you get there. Professional graduate programs like applicants with math majors because they have developed analytical thinking and problem solving skills. They also tend to do well on admissions exams for the programs.

If you aren’t interested in pursuing a graduate degree, there are plenty of industries in the private and public sector that value a degree in mathematics. Read more for ideas of what to do with a math degree. These are just some of the options, there are many fields you could go into, see Additional Resources to explore others!

#### Salary Information

Starting salaries for systems engineers can range from $50-70,000, with growth possible up to six figures.

---

### Why major in Math?

Most students choose to major in math because they like the subject, find it interesting and challenging, and find they are good at it. These are great reasons to major in math! But now you may be wondering what you can do in your future career. How can math help you? As a math major, you’ll learn the overall skill of problem solving, a skill needed for any job setting. A math degree can make you stand out when applying to a variety of jobs, because your problem solving, analytical thinking, and computational skills can set you apart from other job applicants.

Often students with math majors go on to pursue master’s or PhD degrees after their undergraduate degree. With a master’s degree in math, you can teach at community college, and with a PhD, you’ll do mathematical research and likely teach at a 4-year college or university. If you want to go to a professional graduate program like business, law, or medicine, a degree in math can be beneficial to helping you get there. Professional graduate programs like applicants with math majors because they have developed analytical thinking and problem solving skills. They also tend to do well on admissions exams for the programs.

If you aren’t interested in pursuing a graduate degree, there are plenty of industries in the private and public sector that value a degree in mathematics. Read more for ideas of what to do with a math degree. These are just some of the options, there are many fields you could go into, see Additional Resources to explore others!
Math teachers are an integral part of a student’s secondary education. Finding a good math teacher, of course, can be difficult. Most students find their teacher to be a strong determinant of their mathematical abilities.

Secondary math teachers not only teach students, but they also play an important role in the development of curriculum, and helping their students to choose courses and plan for their futures. In addition to effective teaching skills, teachers need to be able to communicate effectively with parents and school administrators.

Because a good math teacher is hard to find, they are also high in demand. Often, because there is such a high need, students can find programs where they can begin teaching while obtaining their credential. Additionally, there is financial support available for to pay of the cost of loans.

To be a math teacher, students should obtain a bachelor’s degree in math or statistics, and then will need to obtain a credential to teach in the state where they wish to work. Salaries for teachers vary greatly, depending on level and location. They can range from $30,000 to $80,000, with the median salary being $51,000. Because of shortages of math and science teachers, job prospects should be steady for teachers of these subjects.

Additional information:
Lockheed Martin jobs: http://www.lockheedmartinjobs.com/careerpaths_systemseng.asp

Software Engineer / Computer Programmer

Computer programmers and computer programmers develop the software to run programs on computers. Software engineers assess the needs of a business to develop software programs that will be useful for the client. Computer programmers then convert a set of instructions into a computer language.

Because some of the functions of computer programmers have begun to become automated, jobs in computer programming are declining, and many computer programmers are shifting to perform the functions of software engineers.

Degrees in computer programming and software engineering are most applicable to a career in the field; however a degree in mathematics is highly relevant as well. Software engineers and computer programmers should demonstrate strong critical and abstract thinking, inductive and deductive reasoning skills, and be knowledgeable of electronics and technology, which are concepts taught in math curriculum.

In 2008, the median salary for software engineers was $85,000, ranging from $54,000 to $129,000. For computer programmers the median salary in 2008 was $69,000, ranging from $40,000 to $111,000. While careers in computer programming are declining, careers in software engineering are rapidly increasing.

Additional information:
Do Software engineers need mathematics? http://www.maa.org/devlin/devlin_10_00.html
Association for Computer Machinery—Careers: http://computingcareers.acm.org
National Center for Women and Information Technology: http://www.ncwit.org/

Accountant /Auditor

Accountants and auditors ensure that companies and organizations are run efficiently, abide by appropriate policies and laws, and pay taxes on a timely manner. There are different types, including management accountants, public accountants, forensic accountants and external / internal auditors.

Accountants differ from auditors in that generally, accountants prepare financial statements for the business, and auditors verify that all financial transactions comply with tax laws and that all dues were paid appropriately and timely.

Accountants and auditors generally have bachelors degrees in accounting; however, it is also possible to have a degree in mathematics along with coursework in economics and accounting. A masters degree in accounting or a MBA with an emphasis in accounting can also be beneficial. Salaries will be much higher for those who obtain a CPA license.

Accountants and auditors earn comfortable salaries, in 2008 ranging from $36,000 to $102,000, with the median salary being around $60,000. Job prospects are strong, though stronger for those with advanced degrees, and the profession should continue to grow.

Additional information:
Careers in Accounting: www.careers-in-accounting.com
American Institute of Certified Public Accountants: http://www.aicpa.org
The Institute of Internal Auditors: http://www.theiia.org/
**Actuary**

Actuaries help design, plan and implement insurance policies, pension plans, and other financial policies for companies and corporations in order to assist the company in making sound financial decisions.

Most actuaries are employed in the insurance industry, and typically will concentrate in one of two industries: life and health insurance or property and casualty insurance. Using mathematical and probability models, actuaries in insurance assess the likelihood that particular events will occur and generate the amount of claims the company will pay. Based on this, insurance actuaries will determine the amount of a premium, that is both profitable and competitive. Because of this, actuaries need strong mathematics and statistics skills, as well as the ability to think critically and solve complex problems.

In preparing for a career in the actuarial sciences, a bachelor’s degree in math would be nicely complemented by a minor in statistics, finance, or economics. In order for actuaries to become professionally recognized, actuarial exams need to be completed.

Actuaries' salaries are rewarding; with 2008’s median salary at $84,810, with the middle fifty percent ranging from $58,710 and $114,570. The average starting salary for actuaries in 2007 was $53,754. Job opportunities in the profession are good, especially for those who have passed the examinations, and growth is expected through 2016.

*Additional information:*
- Society of Actuaries: http://www.soa.org/
- Casualty Actuarial Society: http://www.casact.org/
- Be an Actuary: www.beanactuary.org

**Cryptanalyst**

Cryptanalysts analyze and interpret codes designed to communicate secure and confidential information for the government, military, and law enforcement, or industries such as financial institutions, and telecommunications. They work to protect these industries from hackers.

Since banks, government, and many other industries have “gone paperless,” with the advent of the internet and technology, cryptanalysts jobs have become more important in ensuring the security of online transactions and communications.

Cryptanalysts must have a strong mathematical knowledge, as well as knowledge of computer science, since most codes they create are embedded in number theory. Most cryptanalysts have degrees in mathematics or computer science, individuals with Master’s level or PhD will be more competitive in the job market. Because of the importance of cryptanalysts, they are compensated well. Average salaries are around $76,000, with a range from $39,000 at the entry level and $112,000 for the experienced professional. There will always be a need for cryptanalysts, since there will always be hackers breaking the codes, so new ones will need to be developed.

*Additional information:*
- When will I use math? http://www.whenwilliusemath.com/careers/cryptanalyst

**Financial Analyst / Planner**

Financial analysts advise and make investment decisions for businesses and individuals. They analyze the success of investments such as of stocks and bonds. Typically, they work in industries such as banks, securities and insurance firms, and other businesses.

Financial planners or advisors work with individuals to assist them in making sound investments, and plan their finances for future education expenses, estate purchasing, or retirement. They may also sell different forms of insurance to their clients.

Financial analysts and planners must have a sound knowledge of math and current market trends. They must also have a knowledge of economics and accounting. Financial analysts should also have a sound knowledge of government & relevant laws. Also, in order to best serve their clients, they must have excellent customer service skills.

Financial analysts and planners need to hold a bachelor's degree in finance, economics, math or statistics. A master’s degree, especially an MBA, will make one more competitive in the job market as well. It is also recommended to be certified through one of the professional organizations.

Financial analysts and planners earn a comfortable salary ranging from $43,000 to $141,000, with a median salary of $73,000. Growth in the profession is strong, though entering the field can be competitive.
Market and Survey Researchers

Market and Survey analysts design effective surveys to gather and measure information about what people think about products and services that companies offer. This information is used by the companies to determine if they need to make any modifications to their products and services in order to earn higher profits and have competitive prices with their competitors.

Market analysts or researchers gather information from consumers about their satisfaction with products and services that their company or client offers. They also gather and interpret information about competitors pricing and sales in order to make predictions on future sales. They assist the company in recommending how to best marketing their products as well as determining where the company stands in the market.

Survey researchers, on the other hand, focus more on the survey design and implementation. Survey researchers gather information from consumers on their opinions of various product and customer satisfaction. Survey researchers use a variety of survey methods including internet or phone surveys, as well as interviews.

Bachelors degrees are required for market and survey researchers, with majors in math, statistics, business or marketing, as well as taking relevant coursework in psychology, sociology, economics and consumer behavior. It may also be beneficial to obtain a masters or PhD degree in marketing. It’s important to have excellent communication skills, be detailed oriented, and willing to put in long hours of independent work as well as working well in teams.

Median annual wages for market and survey researchers in 2008 were $61,000, ranging from $34,000 to $112,000. For survey researchers the median salary was $36,000, ranging from $18,000 to $26,000. Job outlook is good and expected to grow in the coming years. Those with higher degrees and/or strong quantitative skills will have an easier time finding a job placement. Because the survey research profession is smaller, the job opportunities are slightly fewer.

Additional information:
Marketing Research Association: http://www.mra-net.org