



Occupations Utilizing Strong Mathematical Backgrounds

Actuarial Sciences: Actuaries are experts in: evaluating the likelihood of future events—using numbers, not crystal balls, designing creative ways to reduce the likelihood of undesirable events, and decreasing the impact of undesirable events that do occur. We are the leading professionals in finding ways to manage risk. It takes a combination of strong analytical skills, business knowledge, and understanding of human behavior to manage today's complex risks facing our society.

Related employment areas: risk management, insurance policy setting, pooling risks

Degree Recommended: Bachelor degree in actuarial science or backgrounds in math, statistics, finance, economics

Starting Salary Range: \$46,000-75,000

www.beanactuary.org

Investment Sciences: Investment science personal use spreadsheet and statistical software packages to analyze financial data, spot trends, and develop forecasts. On the basis of their results, they write reports and make presentations, usually making recommendations to buy or sell a particular investment or security.



Related employment areas: math finance, portfolio management, financial analyst

Degree Recommended: Bachelor degree in business, accounting, statistics or finance

Average Salary Range: \$85,000

www.bls.gov/k12/money02.htm

Management Sciences: Management sciences personal use advanced methods of analysis to help organizations solve problems and make better decisions.

Related employment areas: operations research, supply chain management, military logistics

Degree Recommended: Masters in computer science or mathematics

Median Salary Range: \$65,000

www.bls.gov/ooh/Math/Operations-research-analysts.htm

Information Technology: Information technology personnel have many options for employment. They need to creatively create or utilize programs to meet the needs of the organization they serve.

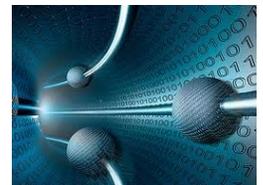
Related employment areas: information security, software engineering, database administration, system and network analysis.

Degree Recommended: Bachelor degree in computer science

Median Salary Range: \$73,000 – 115,000

www.bls.gov/k12/computers01.htm

www.bls.gov/ooh/Computer-and-Information-Technology/Software-developers.htm



Biology Modeling: A person working employed in the biology field will require mathematical and computer science skills to forecasting of biological research, disease control, and creating technology for biological applications.

Related employment areas: epidemiology, population dynamics, neuroscience, biological networks

Degree Recommended: Master degree in public health, PhD in medical biology with computer science course work

Median Salary Range: \$63,000 to 77,000

www.bls.gov/ooh/life-physical-and-social-science/medical-scientists.htm

www.bls.gov/ooh/Life-Physical-and-Social-Science/Epidemiologists.htm

Earth Science Modeling: Earth science modelers are part of a fast moving, interdisciplinary, field of knowledge. The research responsibility is very broad: to gain a better understanding of how the natural earth systems function, and to work with others to apply this knowledge to develop sustainable relationships. Current challenges call upon us to help society meet its many needs.

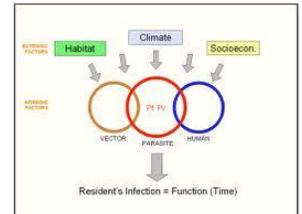
Related employment areas: climatology, geophysics

Degree Recommended: Bachelor degree in earth sciences or related degree

Median Salary Range: \$83,000 - 88,000

www.bls.gov/ooh/Life-Physical-and-Social-Science/Atmospheric-scientists-including-meteorologists.htm

<http://www.bls.gov/ooh/Life-Physical-and-Social-Science/Geoscientists.htm>



Engineering: The field of engineering has become so diverse in recent years that a definition is not easy to come by. Yes, engineers still build skyscrapers, design machinery, and oversee public works. But that's only the beginning. They also address society's needs and problems on a number of other scales with a unique blend of technology and science. At the atomic level, materials engineers are developing data storage techniques focusing on the spin of electrons in atoms. At the molecular level, chemical and bioengineers are working on drug delivery systems that work inside cells. At the macro level, environmental engineers are quantifying the particle flow of pollutants through soil to better understand how to clean up abandoned industrial sites, oil spills, and other biohazards. And at the galactic level, astronautical engineers are designing spacecraft for other-world exploration.

Related employment areas: fluid dynamics, materials science, acoustics, combustion, optics and lasers, controls systems, communication theory, autonomous systems, signal processing, robotics

Degree Recommended: Bachelor degree in engineering or related degree

Median Salary Range: 78,000 – 101,000

www.bls.gov/ooh/architecture-and-engineering/aerospace-engineers.htm

www.bls.gov/oes/current/oes172131.htm

www.bls.gov/ooh/architecture-and-engineering/mechanical-engineers.htm

Imaging Sciences: Imaging science personnel create two or three-dimensional images that depict objects in motion on video, film, computers, or another form of electronic media.

Related employment areas: image processing, graphics, animation

Degree Recommended: Recommend bachelor degree in graphic design with computer science coursework, minimum requirement high school diploma

Median Salary Range: \$29,000 to 63,000

www.allsalarydata.com/ animator/



Computer and Informational Research Science: Computer and Information Research Science personnel have a variety of fields in which to specialize. Some are responsible for operating cryptographic equipment that is used to code, decode, and transmit secret information. Such equipment is used in law enforcement agencies, armed forces, and business organizations. Others work in cognitive simulation, in which computers are used to test hypotheses about how the human mind works. All require mathematics, statistics and computer science.

Related employment areas: cryptography, steganography, digital signatures, information retrieval, machine learning, artificial intelligence

Degree Recommended: Master or PhD in mathematics, statistics or computer science recommended. Bachelor degree with many upper division math and computer science courses may be possible for certain jobs.

Median Salary Range: \$83,000 to 101,000

careers.stateuniversity.com/pages/385/Artificial-Intelligence-Specialist.html

careers.stateuniversity.com/pages/7758/Cryptographic-Technician.html

en.wikipedia.org/wiki/Steganography