



Advanced STEM Applications

STEM

JOB OUTLOOK

The STEM group that is projected to grow fastest from 2014 to 2024 is the mathematical science occupations group at 28.2 percent, compared with the average projected growth for all occupations of 6.5 percent. This group includes occupations such as statisticians and mathematicians. Since this group has the lowest employment among the STEM groups in 2014, this growth will result in only about 42,900 new jobs over the period. The only STEM group that is projected to show little or no change is drafters, engineering technicians, and mapping technicians, with a slight projected decline of 1.4 percent, a decline of about 9,600 jobs.



OCCUPATION PROFILE

According to U.S. Bureau of Labor Statistics, most of the largest STEM occupations were related to computers and information systems. With employment of nearly 750,000, applications software developers were the largest STEM occupation. Computer user support specialists and computer systems analysts each accounted for over a half a million jobs.

Wholesale and manufacturing sales representatives of technical and scientific products (334,010) was the largest STEM occupation not related to computers. Mechanical engineers and civil engineers, also non-computer-related STEM occupations, each accounted for over a quarter of a million jobs.

But not all STEM occupations were large. Some were among the smallest occupations in the country, including mathematical technicians, with only 820 jobs. Astronomers, postsecondary teachers of forestry and conservation science, and mathematical science occupations, all other, each had employment of less than 2,000.

Mechanical Engineer	Computer User Support Specialist	Civil Engineer	Computer/Information Systems Manager	Applications Software Developer	Computer Systems Analyst
Median Salary: \$95,880	Median Salary: \$47,040	Median Salary: \$79,380	Median Salary: \$124,530	Median Salary: \$98,180	Median Salary: \$83,690

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Memphis-Shelby County Schools



ROAD MAP TO SUCCESS

PROGRAM OF STUDY PROFILE

The Advanced STEM Applications program of study designed for students interested in the exciting careers available in the high-demand fields of science, technology, engineering, and mathematics. This program of study is uniquely structured to offer students an overview of STEM fields, occupations, and applications in the first year, followed by more specialized study of the scientific inquiry or engineering design process in subsequent years, culminating in a portfolio and internship experience. Upon completion of these POS, students will be prepared to pursue engineering studies or an advanced study in the STEM field of their choice at a variety of postsecondary institutions.

CAREER PATHWAY

EARLY POSTSECONDARY

- * STEM I: Foundations
- * STEM II: Applications
- * AP Computer Science
- * STEM III: STEM in Context
- * AP Computer Science Principles
- * STEM IV: STEM Practicum

CERTIFICATIONS

- * COMPUTER SOFTWARE SPECIALIST
- * SOFTWARE TESTING
- * GEOGRAPHICAL INFORMATION SYSTEMS
- * APPLIED GEOSPATIAL INFORMATION SYSTEMS

ASSOCIATES

- * A.S. Computer Engineering Technology
- * A.S. Electrical Engineering Technology
- * A.S. Mechanical Engineering Technology
- * A.S. Geographic Information Systems

BACHELORS

- * B.S. Mechanical/Electrical Engineering
- * B.S. Civil Engineering
- * B.S. Computer Engineering

MSCS PARTICIPATING SCHOOLS: Cordova HS, Craigmont HS, Douglas HS, East HS, Hamilton HS, Manassas HS, Oakhaven HS, Southwind HS, Whitehaven HS, Wooddale HS

LOCAL EMPLOYERS: Elos, Greater Memphis Chamber, Greater Memphis Medical Device Council, Hyosung HICO, Memphis, Light, Gas & Water, Olympus, Shelby County Government, St. Jude Children’s Research Hospital, TechEd2Go, University of Tennessee