



SCIENCE AND MATH

Computer Science and Engineering

Careers

The rapid spread of computers and computer-based technologies over the past two decades has generated a need for skilled, highly trained workers to design and develop hardware and software systems and to incorporate these advances into new or existing systems. This professional specialty group is widely referred to as computer scientists and systems analysts.

Computer scientists generally design computers and conduct research to improve their design or use, and develop and adapt principles for applying computers to new uses. Computer scientists perform many of the same duties as other computer professionals throughout a normal workday, but their jobs are distinguished by the higher level of theoretical expertise and innovation they apply to complex problems and the creation or application of new technology. Computer

scientists include computer engineers, database administrators, computer support analysts and a variety of other specialized workers. They may work in areas ranging from theory to hardware to language design or they may develop advances for virtual reality. Some design programming tools, knowledge-based systems or even computer games.

Systems analysts use their knowledge and skills in a problem-solving capacity, implementing the means for computer technology to meet the individual needs of an organization. They study business, scientific or engineering data processing problems and design new solutions using computers. This process may include planning and developing new computer systems or devising ways to apply existing systems to operations still completed manually or by some less efficient method.

Job Outlook

Computer scientists is projected to be one of the fastest growing occupations over the next decade. Strong employment growth combined with a limited supply of qualified workers will result in excellent employment prospects for this occupation and a high demand for their skills. The computer scientists occupation is expected to grow 37 percent from 2006 to 2016. Employment of these computer specialists is expected to grow as organizations continue to adopt and integrate increasingly sophisticated technologies. Job increases will be driven by very rapid growth in computer systems design and related services, which is projected to be one of the fastest growing industries in the U.S. economy.

Firms will continue to seek out computer specialists who are able to implement the latest technologies and are able to apply them to meet the needs of businesses as they struggle to maintain a competitive advantage. Expansion of electronic commerce—doing business on the Internet—and the continuing need to build and maintain databases that store critical information on customers, inventory, and projects are fueling demand for database administrators familiar with the latest technology.

Earnings

Median annual earnings of computer and information scientists, research, were \$93,950 in May 2006. The middle 50 percent earned between \$71,930 and \$118,100. The lowest 10 percent earned less than \$53,590, and the highest 10 percent earned more than \$144,880. Median annual earnings of computer and information scientists employed in computer systems design and related services in May 2006 were \$95,340.

Related Careers

- Actuaries
- Computer and Information Systems Managers
- Computer Programmers
- Computer Software Engineers
- Engineers
- Financial Analysts
- Management Analysts
- Mathematicians
- Operations Research Analysts
- Personal Financial Advisors
- Statisticians
- Urban and Regional Planners



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Educational Opportunities in Computer Science at LCCC

Associate of Science

The associate of science is intended for students who wish to complete the first two or more years of a bachelor's degree program at LCCC in such program fields as biology, chemistry, computer science and engineering, general science and physics. Students completing the associate of science degree may transfer with junior (or higher) standing to the four-year university or college of their choice.

There are virtually no limitations to the programs than can be pursued as LCCC can customize associate of science programs to meet the transfer college/university's requirements. The associate of science may be completed in two years, if taken on a full-time basis. Many LCCC students choose to study on a part-time basis.

Related Educational Opportunities through LCCC's University Partnership

University of Toledo

Bachelor of Computer Science and Engineering

A bachelor's degree program in computer science and engineering is being introduced to the University Partnership at LCCC. This program, offered by the University of Toledo, covers an interdisciplinary field which deals with the design, construction, operation and maintenance of computing hardware and software. In this program, students explore the interaction between modern computer science and related technologies that have evolved the mathematical and design principles of engineering into the development of modern computer systems.

Bachelor of Science in Computer Science and Engineering Technology

The program in Computer Science and Engineering Technology (CSET) includes hardware and software aspects of both computer design and computer applications. Computer design emphasizes the structure of computers and requires expertise in computational applications, digital design, microcomputer systems and computer architectures. Computer applications emphasizes the use of computer software in engineering technology and requires both low-level and high-level programming techniques, the use of mathematical algorithms, and a general knowledge of computer operating systems. The CSET program provides students with an in-depth understanding of computer hardware and software at the machine and system level. Graduates of the CSET program are considered engineering technologists and are valuable additions to high-tech corporations throughout the country who are developing, maintaining, and marketing computer systems. Baccalaureate graduates are typically employed as network technologists, telecommunications specialists, network support specialists, LAN administrators, web programmers/designers, web server administrators, network administrators, network engineers, and LAN managers.

Ohio University

Master of Science in Engineering-Engineering Management

The Russ College of Engineering offers a graduate program of study with an emphasis in engineering management. The degree conferred is a master of science in engineering. This program is designed for, but not limited to, individuals holding undergraduate degrees in engineering, chemistry, physics, or other technical degrees.

You will develop the appropriate skills for the management of technology-based companies. The program includes courses emphasizing the skills required of technology managers including coursework in information technology, supply chain management, finance, and statistics.

About Lorain County Community College

Lorain County Community College is one of Ohio's leading colleges delivering distance learning education via the Internet. The College has expanded its delivery of its programs and services through the opening of the Learning Center at St. Joseph Community Center in Lorain, the LCCC Wellington Center, Lorain County Growth Partnership in downtown Elyria and the Midpoint Campus Center in Brunswick. Partnerships with Lorain County's K-12 school districts have also led to important developments for the community. More than 1300 high school students participate in the Post Secondary Enrollment Options program by enrolling in LCCC classes, making LCCC the state's largest community college provider of PSEO. More than 35 percent of Lorain County's top high school graduates choose to attend LCCC.

LCCC is one of Ohio's fastest growing colleges because of the variety of learning opportunities it provides. Students can choose from more than 80 educational programs. Students can complete the first half — and sometimes more — of a bachelor's degree. The University Partnership brings eight universities to the LCCC campus offering 37 bachelor's and master's degree programs. With the University Partnership at LCCC, the College partners with the state's finest universities to bring the best in bachelor's and master's degree programs right to the LCCC campus. Students can earn degrees that get them jobs immediately. Students can upgrade, retrain and improve current life skills. Students can learn in the classroom, at home and over the Internet.

LCCC offers a complete college experience. We understand that there's more to college life than attending classes. We offer many of the programs, sports, and activities available at large four-year universities and colleges. But, students will not have to stand in line behind juniors and seniors in the classroom, on the playing field, or in leadership positions. Students can immediately act in a play, sing in a musical group, serve as editor for the college newspaper, plan social activities, compete on the playing field, or set policy as a student government member.

In addition to providing a great education for those who enter college with aspirations of a degree, LCCC helps those who have changed their career goals, who want to broaden their horizons, and who want to return to work. LCCC provides learning and training for those who want to move up but find they need new or improved skills for the kind of professional opportunities they seek.

LCCC faculty is recognized locally and nationally for their work as professors and in other areas. They all have advanced degrees and real-world experience and understand their primary responsibility at LCCC is to teach classes. Classes are small. Individual attention is plentiful.

An LCCC education, prepares students for real jobs and real futures. To find out more, call (800) 995-LCCC or visit LCCC's Connections Center, the Learning Center at St. Joseph Community Center in Lorain, the LCCC Learning Center in Wellington, the Lorain County Growth Partnership in downtown Elyria or the Midpoint Campus Center in Brunswick for all of your enrollment service needs, including admissions, registration, advising and counseling.



**Lorain County
Community College**



**The University
Partnership**

of Lorain County Community College

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