**Los Medanos College**

Phone: (925) 439 - 2181

Catalog: <http://www.losmedanos.edu/catalog/>

Website: http://www.losmedanos.edu/default.aspx

Computer Science – AS (Transfer)

**Program Information**

The Computer Science degree provides a comprehensive exposure to computer science in preparation for upper-division computer science courses. The program also prepares students for entry level employment in the computer and related industries. The Computer Science Associate in Science (A.S.) Degree may be obtained by completion of the required program, plus general education requirements

**Upon completion of this program, the student will be able to:**

• Design, write, test and debug computer programs, using a low-level language, a structured language, and an object-oriented language.

• Evaluate various solutions to a proposed problem in terms of programming languages, software architecture, and other appropriate computer technologies.

• Demonstrate a fundamental knowledge of the basic concepts that define the discipline of computer science such as data structures, discrete mathematics, basic computer architecture, operating system internals, networking fundamentals, and programming languages.

**Career Opportunities**

Programmer, Technician, Software Verification and Testing, Systems Analyst, Systems Designer, Software Engineer, Firmware Engineer, Software Architect, Computer Engineer, Computer Techologist, Technical Manager

Networking and Security – AS, Certification

**Program Information**

This degree is designed to give students currently employed as an Information Technology (IT) Professional the additional skill sets necessary to work in this rapidly growing field. This degree covers some of the critical skill sets for the International Information Systems Security Certification Consortium (ISC)2 Certified Information Systems Security Professional (CISSP) exam, which is recognized as an international standard for an Information Systems Security (ISS) Professional.

This certificate is designed to give students currently employed as an Information Technology (IT) professional or those currently working on their Networking degree the additional skill sets necessary to work in this rapidly growing field. This certificate covers some of the critical skill sets for the International Information Systems Security Certification Consortium (ISC)2’s Certified Information Systems Security Professional (CISSP) certification, which is recognized as an international standard for the Information Systems Security (ISS) professional.

**Upon completion of this program, the student will be able to:**

• define best practices for configuring network operating system services to provide optimum security.

• compare and contrast the benefits of firewalls vs. intrusion detection devices and software.

• explain and configure a network firewall to provide optimum security from external threats and exploits.

• analyze organizational needs and implement internal security policies for the enterprise.

• evaluate and implement the required security programs and policies to protect the enterprise against viruses, Trojans, worms, rootkits, and spyware.

• assess and configure secure data transfer protocols for internal and external needs, including Windows IP Security (IPSec) and the Virtual Private Network (VPN) tunneling protocols.

• apply Windows group policy to secure the internal network and shared resources.

• construct NTFS file system permissions and shares to allow only the minimum levels of access needed by users to use network resources.

• prioritize and establish a disaster recovery plan for the enterprise.

• construct and apply group policies and NTFS file system permissions to secure files and network resources.

**Career Opportunities**

Programmer, Technician, Software Verification and Testing, Systems Analyst, Systems Designer, Software Engineer, Firmware Engineer, Software Architect, Computer Engineer, Computer Techologist, Technical Manager

Electrical/Instrumentation Technology – AS, Certification

**Program Information**

LMC is in a unique position to offer an outstanding, up-to-date curriculum that has been designed by industry for industry. No other college in this area provides similar education and training needed to obtain these high-skilled, high-wage and high-demand jobs.Our ETEC program offers you the opportunity to graduate with a Certificate of Achievement in four semesters (two years). There are two areas of specialization: Electrical Technician or Instrumentation Technician. The Electrical Technician specialization is designed to train electricians to maintain complex electrical automation systems used in the manufacturing and power generation industry. The Instrumentation Technician specialization is designed to train instrument technicians to maintain the process measurement and control systems used in refineries, chemical plants, biotech plants, pharmaceutical plants, water and waste treatment plants.

**Upon completion of this program, the student will be able to:**

• Design and build several of the most common circuits used in electronic communication systems.

• Develop skills in building, testing, analyzing, and troubleshooting electronic communication systems.

• Apply theory and mathematics for evaluating the design, operation, and troubleshooting of integrated amplifier circuits such as comparators and operational amplifiers.

• Interpret data from a variety of test and measurement equipment used in analysis of electronic control systems.

• Identify and diagram schematic symbols used in electric and electrical industrial applications.

• Employ common hand tools in the mechanical installation of a sophisticated communication system.

**Career Opportunities**

This degree or certificate provides students with the knowledge to successfully enter a variety of electronics and telecommunication careers. Working closely with our industry partners and contacts ensures our curriculum is relevant and meets the current and future needs of the Electronics and Telecommunications Industry.

Engineering Engineering Technology – AS (Transfer Preparation)

**Program Information**

Engineers design and oversee the construction of the structures, vehicles, devices, and processes that solve the technological problems facing society. Engineering is a profession with both licensing requirements and a code of ethics. The LMC Engineering Program offers a solid foundation for upper division studies in most engineering fields, including mechanical engineering, civil engineering, electrical engineering, aerospace engineering, industrial engineering, and many other engineering disciplines. Students who complete the program will have finished most or all of the lower division courses required for transfer to four-year engineering programs. Graduates of the Engineering Program at LMC will also be able to: identify and solve engineering problems, perform and interpret experiments, produce designs to meet various needs, demonstrate professional ethics, communicate effectively, judge how engineering projects affect society and the environment, engage in lifelong learning, and use the tools and techniques necessary for modern engineering practice.

**Career Opportunities**

Upon completion of the degree or certificate program the engineering technician will be prepared to go directly into the employment market as a technical assistant to engineers, or other technical employment. For every engineer, several support technicians are required. Engineering technicians are needed in the fields of manufacturing, architecture, construction, materials testing, public utilities, and many other fields.

**Upon completion of this program, the student will be able to:**

• Apply the principles of engineering.

• Identify, analyze, and solve technical problems.

• Plan, conduct, analyze, and interpret experiments.

• Communicate about engineering solutions effectively through speaking, writing, and graphics.