



## APPLIED SCIENCE TEAM

Science Department Chair:  
Dr. Miguel Moreno  
[MorenoMA@lattc.edu](mailto:MorenoMA@lattc.edu)  
213.763.7322

Department Secretary:  
Ms. Mary-Ann Neal-Bernard  
[NealbeMA@lattc.edu](mailto:NealbeMA@lattc.edu)  
213.763.7295

Instructor:  
Dr. Martin Diaz  
[DiazM@lattc.edu](mailto:DiazM@lattc.edu)  
213.763.7302

Instructor:  
Dr. Angela Gee  
[GeeAL@lattc.edu](mailto:GeeAL@lattc.edu)  
213.763.7296

Instructor:  
Professor Renee Madyun  
[MadyunRM@lattc.edu](mailto:MadyunRM@lattc.edu)  
213.763.7325

Pathway Navigator  
& Project Coordinator:  
Christie Dam  
[DamMC@lattc.edu](mailto:DamMC@lattc.edu)  
213.763.7075

Dean of Academic Affairs  
& Workforce Development:  
Vincent Jackson  
[JacksoVC@lattc.edu](mailto:JacksoVC@lattc.edu)  
213.763.7035

Vice President of Academic Affairs  
& Workforce Development:  
Leticia Barajas  
[BarajaLL@lattc.edu](mailto:BarajaLL@lattc.edu)  
213.763.7071



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# Applied Science Pathway



<http://college.lattc.edu/asp/>

400 W. Washington Blvd., Los Angeles, CA 90015

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## BIOTECHNOLOGY (Certificate/A.S. Degree)

The LATTC Biotechnology Certificate/A.S. Degree Program is designed to meet the needs of vocational/technical students who wish to acquire the necessary skills in a biotechnology career with an emphasis in biomanufacturing. This program also suits the needs of transfer students who wish to complete their first part of college education in a community college.

Biotechnology is a changing industry that applies science and technologies to living organisms through the process of discovering, developing, manufacturing, or regulating quality of new products. Biotechnology workers are employed in many industries. Biotechnology includes pharmaceutical and medical manufacturing, instrument, equipment and supplies manufacturing, scientific and technical consulting services, scientific and research development services, education, laboratories and government. In addition, biotechnology applies to agriculture, human health and medicine, energy and environment.

Our Biotechnology A.S. Degree Program focuses on biomanufacturing which directly serves the pharmaceutical and medical manufacturing, but also other sectors such as food and agricultural sciences, green technologies and technicians in various science-related industries.

### PROGRAM LEARNING OUTCOMES

- Perform and analyze procedures with expertise using technology and applying scientific knowledge.
- Evaluate and apply current good manufacturing practices and regulations.
- Demonstrate clear communication, critical thinking skills and professional conduct.

### FACULTY LEADS

- Martin Diaz and Angela Gee

## CHEMICAL TECHNOLOGY (Certificate/A.S. Degree)

The Chemical Technician (CT) or science technician occupations are becoming the fastest growing occupational category in the United States. The chemical technician generally performs laboratory analysis or testing in a wide variety of biological and physical science settings such as; environmental testing, drinking water, wastewater treatment, food and beverage, pharmaceutical, forensics and petroleum refineries; grading studies of materials, and quality control of industrial chemicals. Training is provided in applied chemistry, physics and mathematics as well as instrumentation, biomanufacturing, industrial processes, computerized analysis and quality control including validation. The CT program is also designed to help students prepare for a smooth transition into other science related degree programs at LATTC.

### PROGRAM LEARNING OUTCOMES

- Evaluate and apply knowledge of laboratory testing analysis and chemical processes including analytical instrumentation.
- Demonstrate excellent knowledge of Good Laboratory Practice (GLP) and current Good Manufacturing Practices (cGMP) including environmental health and safety procedures.
- Evaluate and apply knowledge of gov't regulatory policies using good verbal and written communication skills.

### FACULTY LEAD

- Renee Madyun



## PROCESS TECHNOLOGY (Certificate/A.S. Degree)

The Chemical Process Industries (CPI) are a major part of the U.S. manufacturing business and represent diverse industries ranging from pharmaceuticals to large-scale processing of gasoline in refineries, waste water treatment, biomanufacturing, nutraceuticals, food and beverage industries and many more. Working in the CPI represents a particular challenge with regard to handling materials, which range from small quantities of specialized products to large quantities of potentially hazardous materials. Process Technicians (PTs) team with engineers and other technicians using specialties such as instrumentation, electronics, or maintenance in carrying out the operations of the plant. PTs must be knowledgeable in written and verbal communication skills concerned with issues such as regulatory policies, personal and co-worker safety, impact of materials on the environment, and process skills that deal with all aspects of controlling manufacturing and treatment processes and maintaining equipment. They are also employed as safety attendants utilizing their training in the area of environmental health and safety.

### PROGRAM LEARNING OUTCOMES

- Evaluate and apply basic knowledge of operations and industrial manufacturing and treatment processes.
- Demonstrate basic knowledge of current Good Manufacturing Practices computerized equipment to adjust and optimize conditions for the production or treatment of large quantities of products/materials. The quality of the production is dependent on the skill and knowledge of the Process (cGMPs) including environmental health and safety protocols.
- Evaluate and demonstrate knowledge of gov't regulatory policies through good written and verbal communication skills.

### FACULTY LEAD

- Renee Madyun