

INDUSTRIAL APPLIED SCIENCES: CORE COMPETENCIES



Pathway: Applied Sciences

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Award Title	Academic Plan	Award Type	GE Units	Required Course Units	Major Elective Units	Major Units
Industrial Applied Sciences: Core Competencies	T038737D	C	-	-	-	20
At least 60 degree applicable units are required to earn an Associate degree. *GE Units requirements may be fulfilled by completing any General Education Pattern; please consult with a counselor for more details. These programs are Financial Aid Eligible.						

PROGRAM OVERVIEW

The Industrial Applied Sciences Core Competencies certificate of achievement is designed to prepare students for employment in the Chemical Technology, Process Technology and Biotechnology Industries. By fulfilling the program requirements, students completing this certificate would have a basic understanding of chemistry and biology and their role in industry, as well as Industrial Safety and Regulatory Concerns. Building upon this certificate, students have the option of continuing their coursework to complete a certificate or Associates Degree in Chemical Technology, Process Technology or Biotechnology (Biomanufacturing).

PROGRAM LEARNING OUTCOMES (PLOs)

- Students will be able to identify and describe industrial hazards, including hazards in the chemical, biomanufacturing and process industries.
- Students will be able to follow and describe cGMP and cGLP requirements.
- Students will be able to identify the main areas affected by the validation process in the biomanufacturing industry and validation regulations that will require internal and external auditing.
- Students will be able to demonstrate mastery of appropriate industrial protocols and documentation.
- Students will be able to demonstrate the ability to calculate solution concentrations, identify chemical compounds, perform unit conversions, apply basic chemistry concepts to solve problems using the scientific method and maintain proper documentation of work activities through the keeping of a lab notebook.
- Students will be able to apply the scientific method to understanding biological principles.
- Students will be able to describe basic principles of human biology, such as biochemistry and the cell.
- Students will be able to describe the different types of bacteria, their staining methods and how they cause disease.
- Students will be able to demonstrate an understanding of the purpose, fundamentals and regulations of biomanufacturing.

USEFUL LATTC LINKS:

College Catalog, Class Schedule & more: <http://www.lattc.edu/academics>

Financial Aid Office: <http://www.lattc.edu/services/financial-aid>

Counseling Services & Support: <http://www.lattc.edu/services/support>

Applied Sciences Pathway: <http://www.lattc.edu/academicpathways/ap>

- Students will be able to demonstrate an understanding of the science underlying biomanufacturing.
- Students will be able to apply techniques and procedures applicable to biomanufacturing:

INDUSTRIAL APPLIED SCIENCES: CORE COMPETENCIES

Certificate of Achievement
Major Units: 20

REQUIRED COURSES

		UNITS
PRPLTEK 104	Introduction to Applied Sciences	4
PRPLTEK 214	Industry Trends: Employment and Regulatory	3
BIOTECH 010	Introduction to Biomanufacturing I	4
CHEM 051	Fundamentals of Chemistry	5
BIOLOGY 003	Introduction to Biology	4
OR		
BIOLOGY 005	Introduction to Human Biology	4

RELATED CERTIFICATES AND DEGREES

BIOTECHNOLOGY (BIOMANUFACTURING)

Certificate of Achievement/Associate of Science
Major Units: 34

CHEMICAL TECHNOLOGY

Certificate of Achievement/Associate of Science
Major Units: 38

PROCESS TECHNOLOGY

Certificate of Achievement/Associate of Science
Major Units: 38