

ENGINEERING TECHNOLOGY - ASSOCIATE IN SCIENCE

¹ Units for the major may be double-counted for LBCC GE, CSU GE, or IGETC; see counselor for limitations.

² Elective units from course(s) numbered 1-599, if needed, to reach 60 degree-applicable units.

Plan Code: 2521

This program provides students with a fundamental knowledge of the, engineering technology field, engineering design and principles of engineering technology. This degree program develops students' critical thinking skills through application of principles of engineering to solve design, manufacturing and automation problems in the field. Students will be able to design and create products by selecting appropriate materials and tools while applying tolerancing standards for quality products. This program prepares students for transfer to a California State University.

Program Student Learning Outcomes

- Demonstrate the ability to attain the Institutional Student Learning Outcomes (ISLOs).
- Apply principles of engineering technology to design problems and constraints.

Program Requirements

This degree requires the completion of General Education coursework plus the following:

Code Number	Course Title	Units
REQUIRED COURSES		
ETEC 10	Introduction to Engineering Technology	2
PHYS 2A	General Physics	4.5
PHYS 2B	General Physics	4.5
MATH 60/60H	First Calculus Course	5
ETEC 60	Material Science for Engineering Tech	3
CAD 4	Geometric Dimensioning and Tolerancing	3
Subtotal Units		22
IN ADDITION, complete THREE (3) units from the following:		
CAD 1	Intro Computer Aided Design SolidWorks (3)	
CAD 2	Intro to Computer Aided Design AutoCAD (3)	
CAD 3	Intro to Computer Aided Design CATIA (3)	
Subtotal Units		3
Required Subtotal		25
Complete one of the following: ¹		19-39
LBCC General Education (Plan A) (https://lbcc-public.courseleaf.com/academic-requirements/general-education-transfer-degree-certificate-requirements/general-education-plans/plan-a/)		
CSU GE Breadth (Plan B) (https://lbcc-public.courseleaf.com/academic-requirements/general-education-transfer-degree-certificate-requirements/general-education-plans/plan-b/)		
IGETC Pattern (Plan C) (https://lbcc-public.courseleaf.com/academic-requirements/general-education-transfer-degree-certificate-requirements/general-education-plans/plan-c/)		
Electives (as needed to reach 60 degree-applicable units) ²		
Minimum Degree Total		60

ENGINEERING TECHNOLOGY - CERTIFICATE OF ACHIEVEMENT

Plan Code: 3521

This program provides students with a fundamental knowledge of the, engineering technology field, engineering design, and principles of engineering technology. This certificate program develops students' critical thinking skills through applying the principles of engineering to solve design, manufacturing and automation problems in the field. Students will be able to create and innovate on products and manufacturing processes by, recognizing, analyzing real world processes to improve process to eliminate waste in lean manufacturing settings.

Program Student Learning Outcomes

- Apply principles of engineering technology to design problems and constraints.

Program Requirements

Code Number	Course Title	Units
REQUIRED COURSES		
ETEC 10	Introduction to Engineering Technology	2
PHYS 2A	General Physics	4.5
PHYS 2B	General Physics	4.5
MATH 60/60H	First Calculus Course	5
ETEC 60	Material Science for Engineering Tech	3
CAD 4	Geometric Dimensioning and Tolerancing	3
Subtotal Units		22
IN ADDITION, complete THREE (3) units from the following:		
CAD 1	Intro Computer Aided Design SolidWorks (3)	
CAD 2	Intro to Computer Aided Design AutoCAD (3)	
CAD 3	Intro to Computer Aided Design CATIA (3)	
Subtotal Units		3
Total Units		25

ENGINEERING TECHNOLOGY ADVANCED - CERTIFICATE OF ACHIEVEMENT

Plan Code: 3523

This program provides students with a fundamental knowledge of the engineering technology field, engineering design, principles of engineering technology and digital electronics. This program develops students' critical thinking skills through application of principles of engineering technology to solve design, manufacturing and automation problems in the field. Students will be able to design, create and innovate products by selecting appropriate materials and tools while applying engineering technology principles for quality products.

Program Student Learning Outcomes

- Apply advanced principles of engineering technology to design problems and constraints.
- Create and design robotic tools using automated equipment.

Program Requirements

Code Number	Course Title	Units
REQUIRED COURSES		
ETEC 10	Introduction to Engineering Technology	2
ETEC 20	Introduction to Engineering and Design	3
ETEC 30	Principles of Engineering Technology	3
ETEC 40	Electronics for Engineering Technology	3
ETEC 60	Material Science for Engineering Tech	3
PHYS 2A	General Physics	4.5
PHYS 2B	General Physics	4.5
MATH 60/60H	First Calculus Course	5
CAD 4	Geometric Dimensioning and Tolerancing	3
CAD 6	Computer Aided Design Advanced	3
Subtotal Units		34
IN ADDITION, complete THREE (3) units from the following:		
CAD 1	Intro Computer Aided Design SolidWorks	3
or CAD 2	Intro to Computer Aided Design AutoCAD	
or CAD 3	Intro to Computer Aided Design CATIA	
Total Units		37

ENGINEERING AUTOMATION TECHNOLOGY - CERTIFICATE OF ACHIEVEMENT

Plan Code: 3522

This program provides students the knowledge and training they need to enter a specialized career or enhance their skills for advancement in their job. Coursework completed while earning a Certificate can also be applied to an Associate Degree. The Engineering Automation Certificate provides a student the necessary skills for an entry level/internship opportunity in the automation field with a focus design, production and control of automation tools and equipment.

Program Student Learning Outcomes

- Create and design robotic tools using automated equipment.

Program Requirements

Code Number	Course Title	Units
REQUIRED COURSES		
ADMT 50	Advanced Manufacturing, Introduction	3
CAD 6	Computer Aided Design Advanced	3
ELECT 230A	Robotics Technology - Design	2
ELECT 230B	Robotics Technology - Integration	2
ELECT 231	Electro-Hydraulics and Pneumatic Systems	2
ETEC 60	Material Science for Engineering Tech	3
MTFAB 280	Introduction to Robotic Welding	2.5
Total Units		17.5