

## Certificate of Achievement in Electronic Technology

Major Code: 093400

The certificate of achievement in Electronic Technology provides the student with the minimum training required for entry-level positions in the electronics field. See the program learning outcomes listed under the associate's degree in this subject.

<b>Major (Core and Electives)</b>	<b>29</b>
<b>Additional Requirements</b>	<b>8</b>
<b>Total</b>	<b>37</b>

### Core (19 units)

CO TECH 35	Introduction to Linux + (3)
ELECTRN 4	Fundamentals of Electronics (4)
ELECTRN 6	Fundamentals of Electronics II (4)

ELECTRN 22	Electronics Circuits II (4)
ELECTRN 54	Computer Logic and Arithmetic (4)

### Electives (choose 5 units minimum)

DRAFT 1	General Drafting (3)
ELECTRN 5	Fundamentals of Electronics I Lab (1)

ELECTRN 7	Fundamentals of Electronics II Lab (1)
-----------	--

ELECTRN 16	Selected Elements of Electronics Mathematics (5)
------------	--

ELECTRN 20	Electronics Circuits I (4)
ENG TEK 81	Fabrications Techniques (1)

### Additional Requirements (8 units)

ENGLISH 28	Intermediate Reading and Composition (3)
or ENGLISH 100	Accelerated Prep: College Writing (3)
or ENGLISH 101	College Reading and Composition I (3)
Eng Tek 49	Technical Mathematics II (5)

*Effective Fall 2017*

## Engineering

### Associate in Science Degree in Engineering

Major Code: 090100

This program provides the student with the opportunity to experience a broad introduction into the field of engineering and aid in his or her selection of a specific area of specialization within the broad spectrum of engineering. This degree requires greater than 60 units and therefore may take more time to complete than other degrees.

**Program Learning Outcomes:** Upon successful completion of the program, students will be able to articulate and justify technical problems through oral, written, and graphical communication; troubleshoot a variety of electronic and/or computer-based components and systems including signal processing, communications, computer networks, and controls; employ mathematics, science, and computing techniques in a systematic, comprehensive manner to support the study and solution of engineering problems; demonstrate industry-standards when interpreting and creating engineering drawings; and describe professional and ethical responsibilities in engineering.

<b>Major Requirements</b>	<b>53*62</b>
(Not including 6 double-countable major units and 3 Area E units that may be waived for this degree via graduation petition. Students wishing to transfer are advised to use either the CSU GE or IGETC plan instead.)	
<b>Additional LACCD GE Plan Requirements</b>	<b>9</b>
<b>Total</b>	<b>65*-74</b>

### Major (53\*-62 units)

CHEM 65	Introductory General Chemistry (4) or high school chemistry (approved by petition)
CHEM 101	General Chemistry (5)
<del>CHEM 102</del>	<del>General Chemistry II (5)</del>
CO SCI 340	Programming in C++ (3)
or CO SCI 344	Programming in Java (3)

DRAFT 16	Blueprint Reading I (2)
DRAFT 51	Tooling Drafting (4)
or ENG GEN 112	Elementary Engineering Drafting (3)
DRAFT 55	Computer-Aided Drafting (3)
or ENG GEN 111	Engineering Drafting (3)
<del>ENG GEN 112</del>	<del>Descriptive Geometry (3)</del>
ENG GEN 243	Statics and Strength of Materials (4)
<del>ENG GEN 912</del>	<del>Elementary Engineering Drafting (3)</del>
MATH 240	Trigonometry (3)*
MATH 260	Precalculus (5)*
MATH 265	Calculus with Analytic Geometry I (5)
MATH 266	Calculus with Analytic Geometry II (5)
MATH 267	Calculus with Analytic Geometry III (5)
MATH 275	Ordinary Differential Equations (3)

*Program listings do not include basic skills prerequisites for college-level courses or prerequisites for GE courses. Numbers appearing in parentheses beside each course title represent course units. Courses may not be offered every term. Students are strongly advised to see a counselor prior to enrolling in any program.*

PHYSICS 37 (5)	Physics for Engineers & Scientists I
PHYSICS 38 (5)	Physics for Engineers & Scientists II
PHYSICS 39 (5)	Physics for Engineers & Scientists III

\*May be waived by petition for students who successfully complete high school calculus and achieve a satisfactory score on the math placement exam

**Students intending to transfer:** some CSU campuses require MATH 270 in addition to the above; and most UC campuses require CHEM 102 and PHYSICS 39 in addition to the above. (See a counselor to determine if these requirements apply.)

*Effective Fall 2017*

## Engineering Technology

### Associate in Science Degree in Engineering Technology: Electronics

Major Code: 093410

Two-year graduates in Electronics Engineering Technology will enter a rapidly growing career field tremendously important in modern engineering. They work in research and development, prototype construction, circuit design layout, and quality control. They apply scientific and engineering knowledge and methods combined with technical skills in support of engineering activities. This degree requires greater than 60 units and therefore may take more time to complete than other degrees.

**Program Learning Outcomes:** Upon successful completion of the program, students will be able to articulate and justify technical problems through oral, written, and graphical communication; troubleshoot a variety of electronic and/or

computer-based components and systems including signal processing, communications, computer networks, and controls; employ mathematics, science, and computing techniques in a systematic, comprehensive manner to support the study and solution of engineering problems; demonstrate industry-standards when interpreting and creating engineering drawings; and describe professional and ethical responsibilities in engineering.

<b>Major</b>	<b>56</b>
<b>Additional LACCD GE Plan Requirements*</b>	<b>12</b>
<small>(Not including 6 double-countable major units and 3 Area E units that may be waived for this degree via graduation petition. Students wishing to transfer are advised to use either the CSU GE or IGETC plan instead.)</small>	
<b>Total</b>	<b>68</b>

**MAJOR (60 units)**

CHEM 65	Introductory General Chemistry (4)
CHEM 101	General Chemistry I (5)
CO TECH 35	Introduction to Linux + (3)
ELECTRN 4	Fundamentals of Electronics (4)
ELECTRN 5	Fundamentals of Electronics I Lab (1)
ELECTRN 6	Fundamentals of Electronics II (4)

ELECTRN 7	Fundamentals of Electronics II Lab (1)
ELECTRN 16	Selected Elements of Electronics Mathematics (5)
ELECTRN 22	Electronics Circuits II (4)
ELECTRN 54	Computer Logic and Arithmetic (4)
ENG TEK 49	Technical Mathematics II (5)
or CO TECH 60	Computer Mathematics I (5)
ENG TEK 50	Technical Mathematics III (5)
ENG TEK 81	Fabrication Techniques (1)
MIT 201	Fundamentals of Manufacturing and Processes (3)
PHYSICS 6	General Physics I (4)
PHYSICS 7	General Physics II (4)

### Associate in Science Degree in Engineering Technology: Mechanical Manufacturing

Major Code: 092400

This program is designed to train designer/drafters and places special emphasis on the preparation necessary to enter the Engineering Technology Program in the School of Engineering at CSULB. Note: some courses may not transfer. (Please see a counselor for additional requirements of the university). Two-year graduates in Engineering Technology will enter a rapidly growing career field tremendously important in modern engineering. They work as assistants to the university graduate engineering technologists. They apply scientific skills in support of engineering activities. This degree requires greater than 60 units and therefore may take more time to complete than other degrees.

Updated program learning outcomes may appear on one or both of the following websites: <http://www.lahc.edu/slo/program.html> and/or [https://effectiveness.lahc.edu/cpc/haps/SitePages/2015-18\\_SLO-SAO\\_Assessment.aspx](https://effectiveness.lahc.edu/cpc/haps/SitePages/2015-18_SLO-SAO_Assessment.aspx). If so, those listed on the latter site supersede all others.