ENGINEERING TECHNOLOGY
Curriculum Guide for Academic Year 2019-2020

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Students planning to **transfer** to a four-year college or university should refer to the ASSIST web site at www.assist.org and **consult a counselor** before beginning a program of study. Please call (562) 938-4561 (LAC) or (562) 938-3920 (PCC) to schedule a counseling appointment. Students may also wish to visit the Transfer Center on either campus.

Program of study leading to:
Associate of Science (A.S.)

Required Major Coursework:		Units	In Progress	Completed Grade
ADMT 50	Advanced Manufacturing Introduction	3		
CAD 51	Mechanical Drafting, Intermediate	2		
CAD 60	Geometric Dimensioning and Tolerancing	3		
ELECT 230A	Robotics Technology Design	2		
ELECT 230B	Robotics Technology Integration	2		
ELECT 231	Electro-Hydraulics and Pneumatics Systems	2		
ETEC 10	Introduction to engineering Technology	1		
ETEC 20	Introduction to Engineering and Design	2.5		
ETEC 30	Principles of Engineering Technology	2.5		
ETEC 40	Electronics for Engineering Technology	2.5		
ETEC 60	Material Science for Engineering Technology	3		
MTFAB 280	Introduction to Robotic Welding	2.5		
	TOTAL UNITS	**28**		

For graduation with an **Associate in Science (A.S.) Degree with a major in Engineering Technology:**

1. **Minimum Unit Requirements: §**Any course that appears on a curriculum guide and the General Education Pattern (Plan A) may fulfill both major and general education requirements (Approved by College Curriculum Committee Spring 2012). For this degree, complete a minimum of 60 units in courses numbered 1-599. Please note that additional elective units may be required to meet this minimum based upon courses selected to fulfill General Education for the Associate Degree.

Engineering Technology (A.S.)	28 units
General Education/A.S. §	19 units

2. **Scholarship:** Maintain an **overall grade point average (GPA) of 2.0** ("C" average) based on all accredited college work applied to the degree, no matter where completed. For this **field of concentration, complete each course above** with a **grade of "C" or better**, or "P" if course is graded on a P/NP basis.
3. **Residence for the Degree:** Complete at least 12 semester units of the required 60 semester units in residence at Long Beach City College in order for the college to grant an Associate of Arts and/or an Associate of Science

Associate Degree requirements continued from the previous page:

1. **Residence for the Field of Concentration**: Complete fifty percent (50%) or more of the unit requirements for this field of concentration in residence; this means at **least 19.5-20 units** of the required 39-40must be **completed at Long Beach City College**. Credit earned by exam, where applicable, may be included
2. **General Education and Proficiency Requirements:** Complete the required A.A./A.S. General Education and Proficiency requirements*, otherwise known as "Plan A". For Plan A requirements, refer to the general catalog or view it online at http://osca.lbcc.edu .
3. Complete and submit the degree application form to the Admissions and Records office during your final semester of course work. These forms are available in the Admissions and Records office, or online at http://admissions.lbcc.edu/ . Refer to the Schedule of Classes (http://schedule.lbcc.edu) and click the "Important Dates" link to view the actual deadline for each semester.
4. **Residence for the Field of Concentration**: Complete fifty percent (50%) or more of the unit requirements for this field of concentration in residence; this means at **least 19.5-20 units** of the required 39-40must be **completed at**

Long Beach City College. Credit earned by exam, where applicable, may be included

5. **General Education and Proficiency Requirements:** Complete the required A.A./A.S. General Education and Proficiency requirements*, otherwise known as "Plan A". For Plan A requirements, refer to the general catalog or view it online at http://osca.lbcc.edu .

6. Complete and submit the degree application form to the Admissions and Records office during your final semester of course work. These forms are available in the Admissions and Records office, or online at http://admissions.lbcc.edu/ . Refer to the Schedule of Classes (http://schedule.lbcc.edu) and click the "Important Dates" link to view the actual deadline for each semester.

*The requirements for general education/proficiency and the field of concentration (major) need to be from the same catalog year. This catalog year may be any year between the years of initial enrollment to the present, provided continuous enrollment is maintained throughout. See the catalog for definition of "continuous enrollment".

Program of study leading to:
Certificate of Achievement 3521

REQUIRED COURSES—Complete the 28 units of required courses as listed in the Associate Degree requirements box.

TOTAL UNITS	**28**	

For graduation with a **Engineering Technology Certificate of Achievement:**
1. Complete each of the **REQUIRED COURSES** listed above with a **minimum grade of** "**C**".
2. Complete fifty percent (50%) or more of the unit requirements for this field of concentration in residence; this means at **least 14 units** of the required 28 must be **completed at Long Beach City College**. Credit earned by exam, where applicable, may be included.
3. Complete and submit the certificate application form to the Admissions and Records office during your final semester of course work. These forms are available in the Admissions and Records office, or online at http://admissions.lbcc.edu/ . Refer to the Schedule of Classes (http://schedule.lbcc.edu) and click the "Important Dates" link to view the actual deadline for each semester.

Program of study leading to:
Engineering Automation Technology Certificate of Achievement 3522

Required Major Coursework:		Units	In Progress	Completed Grade
ADMT 50	Advanced Manufacturing Introduction	3		
CAD 51	Mechanical Drafting, Intermediate	2		
ELECT 230A	Robotics Technology Design	2		
ELECT 230B	Robotics Technology Integration	2		
ELECT 231	Electro-Hydraulics and Pneumatics Systems	2		
ETEC 60	Material Science for Engineering Technology	3		
MTFAB 280	Introduction to Robotic Welding	2.5		
	TOTAL UNITS	**16.5**		

For graduation with Engineering Automation Technology **Certificate of Achievement:**
1. Complete each of the **REQUIRED COURSES** listed above with a **minimum grade of** "**C**".
2. Complete fifty percent (50%) or more of the unit requirements for this field of concentration in residence; this means at **least 8.5 units** of the required 16.5 must be **completed at Long Beach City College**. Credit earned by exam, where applicable, may be included.

Complete and submit the certificate application form to the Admissions and Records office during your final semester of course work. These forms are available in the Admissions and Records office, or online at http://admissions.lbcc.edu/ . Refer to the Schedule of Classes (http://schedule.lbcc.edu) and click the "Important Dates" link to view the actual deadline for each semester.

Career Opportunities

This **Associate Degree** is a two-year program leading to the Associate in Science (A.S.) degree. This degree will help students succeed after transferring to a CSU or UC School Computer Science major program. Students wishing a bachelor's degree (transfer program) should meet with a counselor to discuss transferability of courses.

Program Mission and Outcomes

Engineering Technology (A.S. and Certificate of Achievement) Program Student Outcome:
- Apply principles of engineering technology to design problems and constraints.
- Create and design robotic tolls using automated equipment.

Engineering Automation Technology (C-Ach) Program Student Outcome:
- Create and design robotic tolls using automated equipment.

Legend

† This course has a prerequisite. Prerequisite courses must be complete with at least a "C" or "P" grade. Refer to the General Catalog (http://www.lbcc.edu/cat/index.html), the Schedule of Classes (http://schedule.lbcc.edu/), or the online Credit Course Outline (http://wdb-asir.lbcc.edu/coursecurriculum/coursedetails/) for specific prerequisite information.