



## ENGINEERING TECHNOLOGY (A.S. / A.A.S.)

SPECIALIZATION: QUALITY

### PROGRAM DESCRIPTION:

The Engineering Technology Associate in Science/Applied Science degree programs prepare students for employment or provides additional training for persons employed in manufacturing and high technology industries. LCCC offers the Quality specialization along with three college credit certificates: Engineering Technology Support, Lean Six Sigma Green Belt, and Six Sigma Black Belt.

The 18 credit hour technical core of this degree is closely aligned with the national Manufacturing Skill Standards Council (MSSC) Certified Production Technician (CPT) industry certification. After completing this core, students will be prepared to take the MSSC assessment for the CPT Certification. Students who have already earned the MSSC-CPT will receive 15 articulated credit-hours towards the Engineering Technology degree. The Engineering Technology Associate in Science degree program is fully transferable to four year degree granting institutions.

### ASSOCIATE IN SCIENCE/APPLIED SCIENCE DEGREE (A.S./A.A.S.)

#### General Education & Engineering Technology Courses

GENERAL EDUCATION (15 credits)	Cr.	ENGINEERING TECHNOLOGY CORE (18 credits)	Cr.
ENC 1101 Composition I	3	<b>CAD</b> ETD 1320 Introduction to CAD	3
PHI 2600 Ethics	3	<b>ELECTRONICS</b> EET 1084 Introduction to Electronics	3
SPC 2608 Public Speaking	3	<b>MEASUREMENT</b> ETM 1010 Mechanical Meas. & Instrumentation	3
MAC 1105 College Algebra or MGF 1106/1107 Math for Liberal Arts I/II (GE)	3	<b>PROCESSES</b> ETI 1420 Manufacturing Materials & Processes	3
Gen. Ed. Sciences Approved Course	3	<b>QUALITY</b> ETI 1110 Principles of Quality	3
		<b>SAFETY</b> ETI 1701 Industrial Safety	3

#### Specialized Track Courses

#### QUALITY (27 credits)

ETI 1610	Principles of Six Sigma	3	ETI 2619	Six Sigma Project Management	3
ETI 1622	Concepts of Lean and Six Sigma	3	ETI 2624	Six Sigma Black Belt Concepts	3
ETI 1623	Tools for Lean Manufacturing	3	ETI 2670	Technical Economic Analysis	3
ETI 1628	Development of Self Directed Work Teams	3	ETI 2626	Six Sigma Capstone Project	3



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LAKE CITY COMMUNITY COLLEGE

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### COLLEGE CREDIT CERTIFICATES

#### **ENGINEERING TECHNOLOGY SUPPORT CERTIFICATE (18 credits)**

This certificate prepares students for entry-level employment with an occupational title as Engineering Support Specialist or Engineering Specialist in various specialized areas to support engineering design, manufacturing processes and production, testing, and/or maintaining product quality, or to provide supplemental training for persons previously or currently employed in these occupational areas.

Course Title	Cr.	Cr.	Cr.
EET 1084 Introduction To Electronics	3	ETD 1320 Introduction To CAD	3
ETI 1420 Manufacturing Materials & Processes	3	ETI 1701 Industrial Safety	3
ETM 1010 Mechanical Measurement & Instrumentation	3	ETI 1110 Principles of Quality Assurance	3

#### **LEAN SIX SIGMA GREEN BELT CERTIFICATE (12 credits)**

This certificate provides a series of courses that focuses on the concepts, theories, and tools of the Lean Enterprise and Six Sigma as used in the manufacturing and services industries. The program covers the methods used in Lean and Six Sigma such as continuous flow, overall equipment effectiveness (OEE), Kaizen, process mapping, the 5S's, total productive maintenance (TPM), cellular manufacturing, the DMAIC, self-directed work teams, the kanban system, design for manufacturing, and value stream mapping. Throughout industry today there is a significant need for individuals educated in the concepts and tools of Lean Enterprise and Six Sigma. The courses in this Green Belt certificate program are part of the Quality Specialty Subplan in the A.S. degree in Engineering Technology.

Course Title	Cr.	Cr.	Cr.
ETI 1622 Concepts Of Lean And Six Sigma	3	ETI 1610 Principles of Six Sigma	3
ETI 1628 Developing & Coaching Self-Directed Work Teams	3	ETI 1623 Tools for Lean Manufacturing	3

#### **SIX SIGMA BLACK BELT CERTIFICATE (12 credits)**

This certificate provides a four course sequence of classes covering the theory of Six Sigma along with a Six Sigma Project Course. This certificate, intended for the manufacturing and services industries, will build from the concepts of the Lean Six Sigma Green Belt Expert Certificate. The major objectives of Six Sigma methodology include problem solving, strategic improvement, and business transformation. The course offerings of this certificate program will focus on the theory and methods of Six Sigma and concentrates on using facts and data to improve customer satisfaction, reduce cycle time, and reduce defects. The courses in this Black Belt certificate are part of the Quality Specialty in the A.S. degree in Engineering Technology.

Course Title	Cr.	Cr.	Cr.
ETI 2624 Six Sigma Black Belt Concepts	3	ETI 2619 Six Sigma Project Management	3
ETI 2670 Technical Economic Analysis	3	ETI 2626 Six Sigma Capstone Project	3



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