

# ELECTRO-MECHANICAL TECHNICIAN CERTIFICATE

Division: Technology and Engineering

PROGRAM CODE: 2C41399

The **Electro-Mechanical Technician Certificate** is designed to provide fundamental, hands-on training on industrial systems and equipment. Students will study the basic principles, applications, concepts and functions of electro-mechanical processes associated with new or modify electrical or mechanical parts for products, such as industrial machinery or equipment from various industries such as petroleum, aerospace, aircraft, medical, bio-medical, autonomous systems, robotics, ocean exploration, or waste reclamation and removal. Typical duties of an electro-mechanical technician may include operation, testing, maintaining, or calibrating tools, equipment, automated systems, servo-mechanical, or electro-mechanical equipment. This certificate requires a total of 32-34 units. A minimum grade of C is required in each course taken. At least one half of the units toward the certificate must be completed at Fullerton College.

Code	Title	Units
<b>Required Courses (24 units):</b>		
DRAF 944 F	Solidworks	3
MACH 116 F	Machine Tools	2
MACH 180 F	Introduction to Metrology	3
TECH 081 F	Technical Mathematics I	3
TECH 131 F	Basic Electricity and Basic Electronics	2
TECH 132 F	Basics of Electric Motor Controls	2
TECH 135 F	Introduction to Programmable Logic Controllers	2
TECH 136 F	Computer Integrated Manufacturing and Advanced PLC	3
TECH 137 F	Electronic Instrumentation and Networking	2
TECH 138 F	Electronic Instrumentation and Networking II	2
<b>Restricted Electives (8-10 units):</b>		
BIOL 194 F	Quality and Regulatory Compliance in the Biosciences	2
DRAF 101 F	Blueprint Reading for Manufacturing (formerly DRAF 070 F)	2
DRAF 140 F	AutoCAD for Industry	3
DRAF 141 F	Advanced CAD for Industry	3
DRAF 171 F	Fundamentals of Drafting	2
DRAF 173 F	Geometric Dimensioning and Tolerancing	2
DRAF 945 F	Advanced Solidworks	3
METL 192 F	Fundamentals of Metallurgy	3
MACH 101 F	Introduction to Machine Tools (formerly MACH 091 F)	5
MACH 102 F	Intermediate Machine Tools (formerly MACH 092 F)	5
MACH 104 F	Advanced Topics in Machine Technology	5
MACH 110 F	CNC Machine Set-Up and Operation (formerly MACH 086 F)	3
MACH 115 F	CNC Parts Programming (formerly MACH 087 F)	3

MACH 150 F	CNC Programming Using Mastercam (formerly MACH 050 F)	3
MACH 182 F	Introduction to CMM Inspection and Romer Arms	3
MACH 184 F	Advanced CMM and Romer Arm Inspection	3
PRNT 101 F	Introduction to Printing	3
TECH 127 F	Industrial Safety	2
TECH 150 F	Basic Drone Piloting	2
TECH 151 F	Applied Drone Piloting	3
WELD 100 F	Introduction to Welding (formerly WELD 121AF)	3

**Total Units** **32-34**

**Outcome 1:** Develop the fundamental skills for electro-mechanical production technicians such as mechanics, electronic assembly, and computer skills.

**Outcome 2:** Identify, set up, correct and monitor gauges, dials, or other indicators to make sure equipment is working properly.

**Outcome 3:** Illustrate how to conduct tests and inspections of products, services, or processes to evaluate quality or performance of equipment or processes.

**Outcome 4:** Determine causes of operating errors through troubleshooting, logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

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