

INDUSTRIAL ELECTRONICS TECHNOLOGY ITC

The Intermediate Technical Certificate (ITC) consists of those technical courses common to both the Electronics Engineering Technology (EET) and Instrument Mechanic (IM) degree tracks, plus the MTHPT-137 "Math For Technology" course.

Entrance requirements for students seeking enrollment in the Industrial Electronics program include:

- Students must score a 30 or higher in math on ALEKS and have a 2 or higher score on the Writing Placement Exam, or qualify for MTHPT-137 (<http://catalog.lcsc.edu/search/?P=MTHPT-137>) and either ENGL-101 (<http://catalog.lcsc.edu/search/?P=ENGL-101>) or ENGL-103 (<http://catalog.lcsc.edu/search/?P=ENGL-103>).
- Enrollment priority for students seeking entrance into the program is on a first-come first-serve basis as determined by the student's faculty advising date.

Successful completers will demonstrate the following:

- (1) COMMUNICATION and TEAMWORK – Accurately communicate ideas across a variety of media (oral, written, graphical) to both technical and non-technical audiences; Function effectively as a member of a technical team.
- (2) SELF-MANAGEMENT – Arrive on time and prepared; Work diligently until the job is done; Budget resources appropriately to achieve objectives.
- (3) SAFE WORK HABITS – Comply with relevant national, state, local, and college safety regulations when designing, prototyping, building, and testing systems.
- (4) ANALYSIS and DIAGNOSIS – Select and apply appropriate principles and techniques for both qualitative and quantitative circuit analysis; Devise and execute appropriate tests to evaluate electronic system performance; Identify root causes of electronic system malfunctions.
- (5) PROBLEM-SOLVING – Devise and implement solutions for technical problems appropriate to the discipline.
- (6) DOCUMENTATION – Interpret and create technical documents (e.g. electronic schematic diagrams, block diagrams, graphs, reports) relevant to the discipline.
- (7) INDEPENDENT LEARNING – Select and research information sources to learn new principles, technologies, and/or techniques.

The six technical courses in this certificate cover DC electrical circuits, AC electrical circuits including filter networks and polyphase power systems, transistors, power supply circuits, and Digital electronic circuits including basic Programmable Logic Controller (PLC) programming. Successful completers will be able to analyze electric and electronic circuits using foundational concepts, safely build and test those circuits, and efficiently diagnose malfunctioning circuits. Part-time enrollment options exist to give students more options and flexibility in their education. The combination of rigorous theory and hands-on work qualifies students for entry-level positions such as Engineering Support Specialist and Installation Technician at local firms, as well as technical apprentice positions. All technical coursework for this certificate is open-source and available online at: <https://www.ibiblio.org/kuphaldt/socratic/model/>

Intermediate Technical Certificate Requirements

Code	Title	Credits
Technical Core		
MTHPT-103	APPLIED ALGEBRA	3.00
Program Requirements		
IETTI-101	BASIC DC CIRCUIT THEORY	4.00
IETTI-102	DIGITAL ELECTRONICS	4.00
IETTI-103	INTRODUCTION TO MICROCONTROLLERS	4.00
IETTI-104	ADVANCED ELECTRICAL PRINCIPLES	4.00
IETTI-105	SOLID STATE DEVICES	4.00
IETTI-112	AC CIRCUIT ANALYSIS	3.00
Total Credits		26.00