

# Electronics

PJC offers an Associate of Applied Science degree in Electronics Technology. The AAS degree program in electronics is designed to prepare students to work in industry in several related areas. The student will study electricity, electronics, mathematics, schematic reading, digital electronics, microprocessor interfacing, integrated circuits, computer operations, and programmable controllers. Instructional emphasis is also placed on understanding of and troubleshooting of various electronic systems.

## Associate of Applied Science In Electronics Technology (70 Credit Hours)

First Semester	Second Semester
CETT 1403*	CETT 1405*
CETT 1425*	CETT 1445
ELMT 2433**	RBTC 1401*
MATH 1314	ELMT 2437**
ENGL 1301	MATH 1316
Third Semester	Fourth Semester
CETT 1429*	ELMT 2441*
GOVT 2306	DFTG 1458
SPCH 1321	CETT 1457
ENTC 1449	CETT 2449
Visual/Fine Arts Elective	

\* Fulfills THECB computer competency requirement.

\*\* Tech Prep courses, which may have been completed in high school.

### CERTIFICATE IN ELECTRONICS TECHNICIAN (12 Credit Hour)

#### First Semester

ELMT 2433 ..... Industrial Electronics\*\*

#### Second Semester

ELMT 2437 ..... Electronic Troubleshooting

RBTC 1401 ..... Programmable Controllers\*

#### Third Semester

ELMT 2441 ..... Electromechanical Systems

\* Fulfills THECB computer competency requirement.

\*\* Prerequisite for other electronic courses.

### CERTIFICATE IN ELECTRONICS TECHNOLOGY (42 Credit Hours)

#### First Semester

CETT 1403 ..... DC Circuits\*

CETT 1425 .....	Digital Fundamentals*
ELMT 2433 .....	Industrial Electronics
EEIR 1201 .....	Math for Electronics Technicians
<b>Second Semester</b>	
CETT 1405 .....	AC Circuits*
CETT 1445 .....	Microprocessor
CETT 1429 .....	Solid State Devices*
RBTC 1401.....	Programmable Controllers*
<b>Third Semester</b>	
ELMT 2441 .....	Electromechanical Systems (RSLogix 5000)
ELMT 2437 .....	Electronic Troubleshooting
CETT 1457 .....	Linear Integrated Circuits

\* Fulfills THECB computer competency requirement.

<b>CETT 1403</b>	<b>DC Circuits</b>	<b>4.3.4</b>
	A study of the fundamentals of direct current including Ohm's law, Kirchoff's laws and circuit analysis techniques. Emphasis on circuit analysis of resistive networks and DC measurements. Prerequisite: concurrent MATH 1314.	
<b>CETT 1405</b>	<b>AC Circuits</b>	<b>4.3.4</b>
	A study of the fundamentals of alternating current including series and parallel AC circuits, phasors, capacitive and inductive networks, transformers, and resonance. Prerequisite: concurrent MATH 1316.	
<b>CETT 1425</b>	<b>Digital Fundamentals</b>	<b>4.3.4</b>
	An entry level course in digital electronics covering number systems, binary mathematics, digital codes, logic gates, Boolean algebra, Karnaugh maps, and combinational logic. Emphasis on circuit logic analysis and troubleshooting digital circuits.	
<b>CETT 1429</b>	<b>Solid State Devices</b>	<b>4.3.4</b>
	A study of diodes and bipolar semiconductor devices, including analysis of static and dynamic characteristics, bias techniques, and thermal considerations of solid state devices.	
<b>CETT 1441</b>	<b>Solid State Circuits</b>	<b>4.3.4</b>
	A study of various semiconductor devices incorporated in circuits and their applications. Emphasis on circuit construction, measurements, and analysis.	
<b>CETT 1445</b>	<b>Microprocessor</b>	<b>4.3.4</b>
	An introductory course in microprocessor software and hardware; its architecture, timing sequence, operation, and programming; and discussion of appropriate software diagnostic language and tools.	

- CETT 1457 Linear Integrated Circuits** 4.3.4  
A study of the characteristics, operations, stabilization, testing, and feedback techniques of linear integrated circuits. Application in computation, measurements, instrumentation, and active filtering. Prerequisite: CETT 1403 or equivalent.
- CETT 2435 Advanced Microprocessors** 4.3.4  
An advanced course utilizing the microprocessor in control systems and interfacing. Emphasis on microprocessor hardware and implementation of peripheral interfacing. Prerequisite: CETT 1445.
- CETT 2449 Research and Project Design** 4.1.3  
Principles of electrical/electronic design encompassing schematics wiring, diagrams, materials lists, operating characteristics, completion schedules, and cost estimates.
- ELMT 2433 Industrial Electronics** 4.3.3  
A study of devices, circuits, and systems primarily used in automated manufacturing and/or process control including computer controls and interfacing between mechanical, electrical, and electronic, and computer equipment. Presentation of programming schemes.
- ELMT 2437 Electronic Troubleshooting** 4.3.3  
In-depth coverage of electronic systems, maintenance, troubleshooting, and repair. Topics include symptom identification, proper repair procedures, repair checkout, preventive maintenance. Emphasis on safety and proper use of test equipment. May be offered as a capstone course.
- EEIR 1201 Math for Electronics Technicians** 2.1.2  
An applied mathematics course with emphasis on the numbering systems, calculations and problem solving skills needed to solve for electronic circuit parameters. Schematic diagrams and electronic terminology are introduced.