

## Transit Electronics Technician Program Outline

### *Basic Data*

Program Name: Transit Electronics Technician

Program Award Level: Diploma

Program Credit Hours: 57 Credit Hours

Program Length: 4 Terms

CIP Code: 47.0101

### Description:

The Transit Electronics Technician program is designed to provide students with an understanding of electrical theory and industrial transit applications. The program emphasizes both theory and practical applications. The student is provided with training to understand and troubleshoot various complex systems and subsystems on a transit vehicle. The program covers topics in safety, circuit theory, microprocessors, computer networking, and 3 phase motor drives.

### *Occupational Analysis*

#### Duty Description

##### 1 Perform Electronic Equipment Maintenance

Task Order	Task Description
1	Gather tools and equipment
2	Conduct visual inspection of equipment
3	Conduct, clean and inspect procedure
4	Perform preventative maintenance
5	Install engineering changes
6	Calibrate electronic equipment
7	Conduct performance test
8	Document work completed

##### 2 Repair Electronic Equipment

Task Order	Task Description
1	Recreate documented failure
2	Troubleshoot documented failure
3	Order replacement parts
4	Repair defective parts
5	Perform component adjustments
6	Return parts of disposition
7	Complete repair of documented failure
8	Verify successful repair

##### 3 Install Electronic Equipment

Task Order	Task Description
1	Inventory installation kit
2	Coordinate fabrication and installation of equipment
3	Install interconnecting cables
4	Fabricate cable connectors
5	Complete equipment installation
6	Conduct power-up test
7	Provide tech support to end users

#### 4 Overhaul Electronic Equipment

Task Order	Task Description
1	Perform in-depth pre-arrival inspection.
2	Create overhaul plan
3	Remove equipment to be overhauled
4	Decontaminate equipment under overhaul
5	Disassemble equipment under overhaul
6	Facilitate restoration of parts with other shops
7	Reassemble equipment under overhaul
8	Groom components and wiring

#### 5 Maintain and repair motor control systems

Task Order	Task Description
1	Identify the types of AC motor controllers
2	Identify the components used in AC motor controls
3	Describe the methods used to provide circuit protection in AC motor control applications

#### 6 Maintain and troubleshoot basic advanced PLC systems

Task Order	Task Description
1	Install switches and other control devices to input cards and address the terminals
2	Install relays, indicator lights, solenoids and motor starters to output cards and address the terminals
3	Write and execute a program using field connected devices

#### Order Description

- 1 The graduate will have developed the necessary skills to perform soldering techniques.
- 2 The graduate will have developed the necessary skills to solve direct and alternating current circuits.
- 3 The graduate will have developed the necessary skills to inspect and repair solid state devices.
- 4 The graduate will have developed the necessary skills to inspect and repair digital and microprocessor devices.
- 5 The graduate will have developed the necessary skills to understand the make-up of linear integrated circuits.
- 6 The graduate will have developed the necessary skills to inspect, maintain, service, remove, install, and repair all types of electronic equipment.
- 7 The graduate will have developed the knowledge and skills to inspect, maintain, troubleshoot, and repair industrial motor control systems.
- 8 The graduate will have developed the knowledge and skills to inspect, maintain, troubleshoot, and diagnose basic and advanced PLC systems.

*Program Curriculum*

<b>Course Number</b>	<b>Courses</b>	<b>Credits</b>
<b>General Studies Courses</b>		
EMPL 1000	Interpersonal Relations & Professional Development	2
ENGL 1010	Fundamentals of English I	3
MATH 1013	Algebraic Concepts	3
MATH 1015	Geometry and Trigonometry	3
<b>Technical Courses</b>		
COMP 1000	Introduction to Computers	3
ELCR 1005	Soldering Technology	1
ELCR 1010	Direct Current Circuits	5
ELCR 1020	Alternating Current Circuits	7
ELCR 1030	Solid State Devices	5
ELCR 1040	Digital and Microprocessor Fundamentals	5
ELCR 1060	Linear Integrated Circuits	3
IDSY 1110	Industrial Motor Controls I	5
IDSY 1120	Basic Industrial PLC's	5
IDFC 1007	Industrial Safety Procedures	2
TRST 1000	Transit Industry Fundamentals	1
TRST 1040	Transit Fiber Optics Controls	2
<b>Plus choose one of the following</b>		
ELCR 2190	Networking <b>OR</b>	3
CIST 1401	Computer Networking Fundamentals	(4)
<b>REQUIRED CREDIT HOURS:</b>		<b>58-59</b>

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