CCAC Workforce Development

Mechatronics 360-Hour Curriculum

Electrical Curriculum

Course Description	Total Group Course Hours
Electrical Control Circuits 1 Basic Electrical Circuits Electrical Measurements Circuit Analysis	**30**
Electrical Control Circuits 2 Inductance and Capacitance Combination Circuits	**Credit Option: 3cr for EET 103**
Electrical Motor Control I Introduction to Electrical Motor Control Manual Motor Control and Overload Protection Control Transformers Control Ladder Logic Control Relays and Motor Starters	**50**
Electrical Motor Control II Introduction to Troubleshooting Systems Troubleshooting Reversing Motor Control Automatic Input Devices I Basic Timer Control: On-Delay and Off-Delay	**Credit Option: 3cr for EET 245**
Industrial Electrical Wiring 1 Introduction to Electrical Control Wiring Electrical Control System Wiring	**15**
Industrial Power Distribution 2 Introduction to Raceways Basic Conduit Bending – EMT Advanced Raceways Conductors, Disconnects, & Overload Protection Conduit Sizing and Wire Pulling Techniques	**30** **Credit Option (w/Ind. Wiring) 3cr for EET 179**

Electronic Curriculum

Course Description	Total Group Course Hours
Programmable Controllers I Introduction to Programmable Controllers Basic PLC Programming PLC Motor Control	
Programmable Controllers II Discrete I/O Interfacing Introduction to PLC Troubleshooting PLC Systems Troubleshooting	**75**
Programmable Controllers III Event Sequencing Application Development PLC Timer Instructions PLC Counter Instructions	**Credit Option:** **4cr for RBT235**

Mechanical Curriculum

Course Description	Total Group Course Hours
Hydraulics I Hydraulic Power Systems Basic Hydraulic Circuits Principles of Hydraulic Pressure and Flow Hydraulic Speed Control Pressure Control Circuits	**38**
Hydraulics II Hydraulics DCV Applications Hydraulic Cylinder Applications Hydraulic Relief Valve Operation Hydraulic Check Valve Applications Accumulators	
Pneumatics I Pneumatic Power Supply Basic Pneumatic Circuits Principles of Pneumatic Pressure and Flow Pneumatic Speed Control Circuits	**21**
Pneumatics Maintenance Pneumatic Maintenance Introduction to Pneumatic Construction System	**Credit Option: (w/Hydraulics) 4cr for MET 170**
Piping Systems Metal Piping Systems Metal Piping Installation Metal Tubing Systems Hoses	**15**
Electro-Fluid Power I Power Devices Control Relays Sequencing Control	**15**
Hydraulic Troubleshooting I Introduction to Pressure Compensated Pumps Pressure Compensated Pump Performance Troubleshooting Hydraulic Pumps Troubleshooting Hydraulic Actuators	**24**
Basic Mechanical Drives Introduction to Mechanical Drive Systems Key Fasteners Power Transmission Systems	**47**
Light Duty V-Belt and Chain Drives Introduction to V-Belt Drives Introduction to Chain Drives	
Heavy Duty V-Belt Drives Heavy Duty V-Belt Drives V-Belt Selection and Maintenance	
Heavy Duty Chain Drives Heavy Duty Chain Drives	