

DATES	DESCRIPTION	DAILY OBJECTIVES
1/2-1/5	Basic Electrical Circuits	1/2 - PD Day (No Students) Objective 1 - Define Electricity and Give an Application Objective 2 - Describe the Operation of a Basic Electrical Circuit Objective 3 - Describe the Two Types of Electrical Current and Give an Application of Each Objective 4 - Describe the Operation of Two Types of Power Supplies Objective 5 - Describe How to Interpret a Basic Electrical Schematic Skill 1 - Connect and Operate a Power Supply
1/8-1/12	Basic Electrical Circuits	Objective 6 - Describe the Functions of Three Types of Manual Switches Objective 7 - Describe the Basic Operation of a Pushbutton Switch Objective 8 - Describe the Basic Operation of a Selector Switch Objective 9 - Describe the Basic Operation of a Knife Switch Skill 2 - Connect and Operate a Circuit Using Three Types of Manual Switches Objective 10 - Describe the Function of Five Types of Electrical Output Devices and Give an Application of Each Skill 3 - Connect and Operate Four Types of Electrical Output Devices Self Review 1
1/15-1/19	Voltage and Current Measurement	1/15 - MLK Day (No School) Objective 1 - Define Voltage and Give Its Units of Measurement Objective 2 - Define Current and Give Its Units of Measurement Objective 3 - State Kirchhoff's Circuit Laws and Give an Application Objective 4 - Define the Basic Characteristics of Series and Parallel Circuits Objective 5 - Describe the Function of a Voltmeter and Give Its Schematic Symbol Objective 6 - Describe How to Use a Voltmeter to Measure Voltage Skill 1 - Use an Analog Voltmeter to Measure the Voltage at a Point Referenced to Ground
1/22-1/26	Voltage and Current Measurement	Objective 7 - Describe How to Use a Digital Multimeter to Measure Voltage Skill 2 - Use a DMM to Measure Voltage Drops in Series and Parallel Circuits Objective 8 - Describe Two Types of Ammeters and Give Their Schematic Symbol Objective 9 - Describe How to Use a DMM to Measure Current Skill 3 - Use a DMM to Measure Current in Series and Parallel Circuits Self Review 1

1/29-2/2	Resistance Measurement	<p>Objective 1 - Define Resistance and Give Its Units of Measurement</p> <p>Objective 2 - Describe Two Types of Ohmmeters and Give Their Schematic Symbol</p> <p>Objective 3 - Describe How to Use a DMM to Measure Resistance</p> <p>Skill 1 - Use a DMM to Measure the Resistance of a Component</p> <p>Objective 4 - Describe the Resistance Characteristics in Series and Parallel Circuits</p> <p>Skill 2 - Measure the Resistance in Series and Parallel Circuits</p>
2/5-2/9	Resistance Measurement	<p>Objective 5 - State Ohm's Law and Give an Application</p> <p>Skill 3 - Use Ohm's Law to Analyze a Circuit</p> <p>Objective 6 - Define Continuity and Explain Its Importance</p> <p>Objective 7 - Describe How to Use a DMM to Measure Continuity</p> <p>Skill 4 - Test the Continuity of Wires Using a DMM</p> <p>Self Review 1</p>
2/12-2/16	Power in an Electrical Circuit	<p>Objective 1 - Define Electrical Power and Give Its Units of Measurement</p> <p>Objective 2 - Describe How to Calculate the Power in a Simple Circuit</p> <p>Objective 3 - Describe the Function of Two Types of Circuit Protection and Give an Application of Each</p> <p>Objective 4 - Describe the Operation of a Fuse and Give Its Schematic Symbol</p> <p>Skill 1 - Connect and Operate a Circuit that Uses a Fuse</p>
2/19-2/23	Power in an Electrical Circuit	<p>2/19 - Presidents' Day (No School)</p> <p>Objective 5 - Describe the Basic Operation of a Circuit Breaker and Give Its Schematic Symbols</p> <p>Skill 2 - Connect and Operate a Circuit That Uses a Circuit Breaker</p> <p>Objective 6 - Describe How to Size Circuit Protection</p> <p>Objective 7 - Describe the Basic Operation of Three-Phase Power</p> <p>Self Review 1</p>

2/26-3/4	Control Logic Circuits	Objective 1 - Describe the Function of Relay Logic Control Circuits Objective 2 - List the Six Elements of Control Logic Objective 3 - Describe the Operation of AND Logic and Give an Application Skill 1 - Connect and Operate an AND Logic Control Circuit Objective 4 - Describe the Operation of OR Logic and Give an Application Skill 2 - Connect and Operate an OR Logic Control Circuit
3/11-3/15	Control Logic Circuits	Objective 5 - Describe the Operation of NOT Logic and Give an Application Skill 3 - Connect and Operate a NOT Logic Control Circuit Objective 6 - Describe the Operation of NOR Logic and Give an Application Skill 4 - Connect and Operate a NOR Logic Control Circuit Objective 7 - Describe the Operation of NAND Logic and Give an Application Skill 5 - Connect and Operate a NAND Logic Control Circuit Objective 8 - Describe the Operation of MEMORY Logic and Give an Application Self Review 1
3/18-3/22		Spring Break
3/25-3/29	Electric Control Diagram	Objective 1 - Describe the Function of a Ladder Diagram Objective 2 - Describe the Symbols of Basic Ladder Diagram Components Objective 3 - Describe How to Read and Interpret a Basic Ladder Diagram Objective 4 - Describe the Function of a Solenoid-Operated Output Device Objective 5 - Describe How to Read and Interpret a Power Diagram Skill 1 - Connect and Operate a Circuit Using a Solenoid Valve Given a Ladder Diagram Skill 2 - Design a Control Circuit in a Ladder Diagram Format to Operate a Solenoid Valve Self Review 1
4/1-4/5	Relay Control Circuit	Objective 1 - Describe the Function of an Electromechanical Relay and Give an Application Objective 2 - Describe the Operation of an Electromechanical Relay and Give Its

		<p>Ladder Diagram Symbol</p> <p>Objective 3 - Describe How to Read and Interpret Ladder Diagram Detached Symbology</p> <p>Skill 1 - Connect and Operate a Relay</p> <p>Objective 4 - Describe the Operation of a Relay Used to Energize a Fluid Power Valve Solenoid</p> <p>Skill 2 - Connect and Operate a Relay to Energize a Fluid Power Solenoid</p> <p>Objective 5 - Describe the Operation of a Relay Performing Control Logic</p>
4/8-4/12	Relay Control Circuit	<p>Skill 3 - Design a Logic Circuit That Uses a Relay</p> <p>Objective 6 - Describe the Operation of a Seal-In Circuit</p> <p>Skill 4 - Connect and Operate a Relay to Perform a Seal-In Function to Control a Motor</p> <p>Self Review 1</p>
4/15-4/19	Introduction to Robotics	<p>4/15 - SkillsUSA Arkansas Leadership Conference Hot Springs, AR</p> <p>4/16 - SkillsUSA Arkansas Leadership Conference Hot Springs, AR</p> <p>4/17 - SkillsUSA Arkansas Leadership Conference Hot Springs, AR</p> <p>Objective 1 - Describe Four Types of Robot Classifications</p> <p>Objective 2 - Describe Five Types of Servo Robots</p> <p>Objective 3 - Describe the Basic Operation of a Servo Robot</p> <p>Objective 4 - Describe the Axes of an Articulated Arm Robot</p>
4/22-4/26	Basic Robotic Operation	<p>Objective 5 - Describe Seven Types of Robot Safety Devices</p> <p>Objective 6 - Describe Robot Safety Rules</p> <p>Objective 7 - Describe How to Power Up and Power Down a Servo Robot</p> <p>Objective 8 - Describe How to Use a Teach Pendant to Jog a Servo Robot</p> <p>Skill 1 - Jog a Servo Robot</p> <p>Objective 9 - Describe How to Home a Servo Robot</p> <p>Skill 2 - Home a Servo Robot</p> <p>Self Review 1</p>

4/29-5/3	Basic Robotics Programing	<p>Objective 1 - Describe Types of Robot End Effectors Objective 2 - Describe Types of Robot Grippers Objective 3 - Describe How to Teach Robot Points Skill 1 - Teach Robot Position Points Objective 4 - Describe How to Enter and Edit Robot Program Files</p>
5/6-5/10	Basic Robotics Programing	<p>Skill 2 - Enter and Edit a Basic Robot Program Objective 5 - Describe How to Transfer Robot Program Files between a PC and Robot Controller Objective 6 - Describe How to Run a Robot Program Skill 3 - Run a Servo Robot Program Objective 7 - Describe the Operation of the Robot Command: Pmove Skill 4 - Enter a Robot Program that Uses the Pmove Command</p>
5/13-5/17	Basic Robotic Programing	<p>Objective 8 - Describe the Operation of the Robot Commands: Grasp and Release Skill 5 - Enter a Robot Program that Uses the Grasp and Release Commands Objective 9 - Describe the Operation of the Robot Commands: Label and Branch Skill 6 - Enter a Robot Program that Uses the Label and Branch Commands Self Review 1</p>
5/20-5/24	Introduction to Electrical Sensors	<p>Objective 1 - List Five Advantages of Electronic Sensors and Two Disadvantages Objective 2 - List Five Types of Electronic Sensors Objective 3 - Describe the Function of the Two Parts of an Electronic Sensor Objective 4 - Describe the Operation of Two Types of Transistors Used in Electronic Sensors Objective 5 - Describe the Operation of an Inductive Proximity Sensor and Give an Application Skill 1 - Connect and Operate an Inductive Proximity Sensor Objective 6 - Describe Five Characteristics That Affect Inductive Proximity Sensor Operation Skill 2 - Measure and Analyze the Performance of an Inductive Proximity Sensor</p>

5/27-5/31	Electrical Sensors	5/27 - Memorial Day (No Students) Objective 7 - Describe the Operation of a Capacitive Proximity Sensor and Give an Application Skill 3 - Connect and Operate a Capacitive Proximity Sensor Objective 8 - Describe Five Characteristics That Affect Capacitive Proximity Sensor Operation Skill 4 - Measure and Analyze the Performance of a Capacitive Proximity Sensor Self Review 1