Course Blueprint for
Advanced Electrical

	Total Course Weight	**100%**	
A	**ADVANCED ELECTRONICS I**	**50%**	**A**
AE101.00	**Understanding Semiconductors**	**25%**	
	1.1 Electrostatic Discharge 1.2 Semiconductor Construction 1.3 Diodes 1.4 Forward Bias 1.5 Reverse Bias 1.6 Zener Diodes 1.7 Light Emitting Diodes (LEDs) 1.8 Rectifier 1.9 AC to DC Rectification 1.10 Clamping Diodes 1.11 Diode Testing		
AE102.00	**Understanding Transistors**	**22%**	
	2.1 Transistors – Construction 2.2 Current Limiting and Gain 2.3 Transistor Testing 2.4 Transistor Circuit		
AE103.00	**Understanding Capacitors**	**3%**	
	3.1 Capacitors In Parallel 3.2 Applying Capacitors For Noise		

B	ADVANCED ELECTRONICS II	50%	B
AE104.00	**Understanding Computer Components**	**7%**	
	4.1 Computer Features 4.2 Computer Memory		
AE105.00	**Understanding Serial Communication**	**9%**	
	5.1 Data Format 5.2 16 Pin DLC 5.3 Data Waveform 5.4 Serial Data Lines 5.5 Data Line Inputs and Outputs 5.6 Computer Input / Output Testing 5.7 Fault Protection		
AE106.00	**Understanding Inputs**	**25%**	
	6.1 Switches 6.2 Typical Input Switches 6.3 Switch Input Testing 6.4 More Inputs - Digital Signals 6.5 Variable or Analog Signals 6.6 Thermistors 6.7 Rheostats 6.8 Potentiometers 6.9 Pressure Transducers 6.10 Photoresistors 6.11 Typical Input Sensor Schematic 6.12 Voltage Generators - Electromagnetic 6.13 Chemical Voltage Generator 6.14 Photovoltaic Sensor		
AE107.00	**Understanding Outputs**	**9%**	
	6.15 Switched Voltage 6.16 Switched Ground 6.17 Pulse Width Modulation 6.18 Constant Frequency Pulse Width Modulation 6.19 Variable Frequency Pulse Width Modulation		