Electronics Power Standards Accomplishments by Semester

Grade	FIRST SEMMESTER	Grade	SECOND SEMESTER
9	Demonstrate an understanding of proper safety techniques for all types of circuits and components (DC circuits, AC circuits, analog circuits, digital circuits, discrete solid-state circuits, microprocessors)	9	Demonstrate the ability to select and use solderless connector and crimping tool to affect a mechanical connection commensurate with professional standards.
	Utilize proper shop safety techniques at all times including the proper use of eye protection.		Demonstrate an understanding of the meaning of and relationships among and between voltage, current, resistance, and power in DC with an emphasis on calculations.
	Follow rules, regulations, dress code and policies as established including interpreting employer/employee handbook and procedures		Demonstrate the ability to use standard electronic software applications including schematic capture and circuit simulation software packages.
	Demonstrate an understanding of basic assembly skills using hand and power tools		Understand and use engineering notation.
	Construct a basic circuit using common electronics hand tools		Demonstrate the ability to use standard electronic components including light emitting diodes and resistors to interact with a microcontroller.
	Demonstrate an understanding of the interpretation and creation of electronic schematics,.		Demonstrate an understanding of application of Ohms Law to series and parallel circuits with an emphasis on calculations, construction and measurements
	Demonstrate an understanding of the interpretation of Resistor Color Codes		
10	Demonstrate an understanding of proper safety techniques for all types of circuits and components (DC circuits, AC circuits, analog circuits, digital circuits, discrete solid-state circuits, microprocessors)	10	Demonstrate an understanding of the properties of an AC signal with an emphasis on calculations, construction and measurements
	Utilize proper shop safety techniques at all times including the proper use of eye protection.		Demonstrate proficient use of the equipment required to measure and analyze AC circuits.
	Follow rules, regulations, dress code and policies as established including interpreting employer/employee handbook and procedures		Understand principles and operations of AC capacitive circuits with an emphasis on calculations, construction and measurements
	Demonstrate an understanding of application of Ohms Law to series, parallel and series-parallel circuits with an emphasis on calculations, construction and measurements		Understand principles and operations of AC inductive circuits with an emphasis on calculations, construction and measurements
	Understand principles and operations of DC RC and RL circuits with emphasis on characteristics of capacitors and inductors		Understand principles and operations and design concepts of AC RC, RL, and RLC circuits with an emphasis on calculations, construction and measurements
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Grade	FIRST SEMMESTER	Grade	SECOND SEMMESTER
11	Demonstrate an understanding of proper safety techniques for all types of circuits and components (DC circuits, AC circuits, analog circuits, digital circuits, discrete solid-state circuits, microprocessors)	11	Understand principles and operations of multistage amplifiers
	Utilize proper shop safety techniques at all times including the proper use of eye protection.		Understand principles and operations of operational amplifier circuits
	Follow rules, regulations, dress code and policies as established including interpreting employer/employee handbook and procedures		Understand principles and operations of sinusoidal and non-sinusoidal oscillator circuits
	Demonstrate an understanding of the properties of semiconductor materials		Understand principles and operations of regulated and switching power supply circuits
	Understand principles, construct and analyze operations of diode circuits.		Understand principles and operations of signal modulation systems (AM, FM, stereo)
	Demonstrate an understanding of bipolar transistors		Understand principles and operations of thyristor circuitry (SCR, TRIAC, etc.)
	Understand principles and operations of single stage amplifiers		
	DSA date TBD		DSA date TBD
12	Demonstrate an understanding of proper safety techniques for all types of circuits and components (DC circuits, AC circuits, analog circuits, digital circuits, discrete solid-state circuits, microprocessors)	12	Understand the concepts of interfacing between different families/sub-families of IC's and between digital circuits and analog circuits
	Utilize proper shop safety techniques at all times including the proper use of eye protection.		Understand principles and operations of types of counters and registers
	Follow rules, regulations, dress code and policies as established including interpreting employer/employee handbook and procedures		Understand the process of designing, prototyping, and debugging electronic circuitry
	Convert to and from any of the following numbering systems: Decimal, Binary, BCD (Binary Coded Decimal), Octal, and Hexadecimal		Students will apply the knowledge and skills acquired in shop to create an electronic prototype of a circuit designed by the student.
	Understand principles and operations of types of digital encoders and decoders		
	Understand principles and operations of types of logic gates including logic symbols, truth tables, and Boolean expressions		
	Understand principles and operations of combinational logic circuits and data selectors		
	Convert between truth tables, Boolean expressions, and combinational logic circuit diagrams		
	DSA date TBD		DSA date TBD