

ELECTRONICS TECHNOLOGY 1-4
COURSE CODE: 6133, 6134, 6135, 6136
STUDENT PROFILE

STUDENT'S NAME		TEACHER'S NAME			
School Year/Semester	Date Began	Date Completed	Grade		
Directions: Document student's progress using the applicable rating scales below: Enter date of completion under the appropriate column.					
0 - Has not received instruction in this area / no experience or knowledge of this task (N/A) 1 - Requires additional instruction and or close supervision (60-69) 2 - Can perform the task completely with limited supervision (70-79) 3 - Can apply and perform independently (80-100)					
A. SAFETY					
		0	1	2	3
1	Review school safety policies and procedures.				
2	Review classroom safety rules and procedures.				
3	Review safety procedures for using equipment in the classroom.				
4	Identify major causes of work-related accidents in office environments.				
5	Demonstrate safety skills in an office/work environment.				
B. STUDENT ORGANIZATIONS					
		0	1	2	3
1	Identify the purpose and goals of a Career and Technology Student Organization (CTSO).				
2	Explain how CTSOs are integral parts of specific clusters, majors, and/or courses.				
3	Explain the benefits and responsibilities of being a member of a CTSO.				
4	List leadership opportunities that are available to students through participation in CTSO conferences, competitions, community service, philanthropy, and other activities.				
5	Explain how participation in CTSOs can promote lifelong benefits in other professional and civic organizations.				
C. TECHNOLOGY KNOWLEDGE					
		0	1	2	3
1	Demonstrate proficiency and skills associated with the use of technologies that are common to a specific occupation				
2	Identify proper netiquette when using e-mail, social media, and other technologies for communication purposes.				
3	Identify potential abuse and unethical uses of laptops, tablets, computers, and/or networks.				
4	Explain the consequences of social, illegal, and unethical uses of technology, e.g., piracy; illegal downloading; licensing infringement;				



	inappropriate uses of software, hardware, and mobile devices in the work environment.				
5	Discuss legal issues and the terms of use related to copyright laws, fair use laws, and ethics pertaining to downloading of images, photographs, documents, video, sounds, music, trademarks, and other elements for personal use.				
6	Describe ethical and legal practices of safeguarding the confidentiality of business-related information.				
7	Describe possible threats to a laptop, tablet, computer, and/or network and methods of avoiding attacks.				
D. PERSONAL QUALITIES AND EMPLOYABILITY SKILLS					
		0	1	2	3
1	Demonstrate punctuality.				
2	Demonstrate self-representation.				
3	Demonstrate work ethic.				
4	Demonstrate respect.				
5	Demonstrate time management.				
6	Demonstrate integrity.				
7	Demonstrate leadership.				
8	Demonstrate teamwork and collaboration.				
9	Demonstrate conflict resolution.				
10	Demonstrate perseverance.				
11	Demonstrate commitment.				
12	Demonstrate a healthy view of competition				
13	Demonstrate a global perspective.				
14	Demonstrate health and fitness.				
15	Demonstrate self-direction.				
16	Demonstrate lifelong learning.				
E. PROFESSIONAL KNOWLEDGE					
		0	1	2	3
1	Demonstrate effective speaking and listening skills.				
2	Demonstrate effective reading and writing skills.				
3	Demonstrate mathematical reasoning.				
4	Demonstrate job-specific mathematics skills.				
5	Demonstrate critical-thinking and problem-solving skills.				
6	Demonstrate creativity and resourcefulness.				
7	Demonstrate an understanding of business ethics.				
8	Demonstrate confidentiality.				



9	Demonstrate an understanding of workplace structures, organizations, systems, and climates.				
10	Demonstrate diversity awareness.				
11	Demonstrate job acquisition and advancement skills.				
12	Demonstrate task management skills.				
13	Demonstrate customer-service skills.				
UNIT A: DEMONSTRATING SAFE WORK HABITS AND PROCEDURES TO MEET OSHA STANDARDS (CONTINUOUS THROUGHOUT THE PROGRAM OF STUDY)		0	1	2	3
1	Identify various types, purposes, and operation of fire extinguishers.				
2	Identify and practice shop safety, including environmental hazards.				
3	Identify electrical hazards.				
4	Identify and practice safe soldering methods.				
5	Identify various safety measures and procedures and when and how to use them.				
6	Identify environmental protection measures and procedures and when and how to use them.				
7	Demonstrate safe and proper use of hand tools.				
8	Demonstrate various methods of controlling static discharge.				
9	Demonstrate safe and proper use of test equipment.				
10	Demonstrate the use and care of appropriate personal protective equipment (PPE).				
11	Explain the importance of hazard communications (HazCom) and Material Safety Data Sheets (MSDS).				
12	Complete safety test.				
UNIT B: DEMONSTRATING PROFICIENCY IN DC ELECTRONICS		0	1	2	3
1	Identify electronic components and their schematic symbols utilizing existing codes and notations (e.g., color codes and exponential notation).				
2	Interpret schematic, block, and pictorial diagrams.				
3	Apply Ohm's law in solving DC electronic problems.				
4	Apply Watt's law in solving DC electronic power problems.				
5	Apply Kirchhoff's laws in solving DC electronic problems.				
6	Evaluate and test DC series circuits.				
7	Evaluate and test DC parallel circuits.				
8	Evaluate and test DC series-parallel circuits.				
9	Evaluate and test sources of DC signals and power.				
10	Evaluate and test DC resistive devices.				



11	Evaluate and test circuit controls (e.g., switches, fuses, circuit breakers, relays).				
UNIT C: DEMONSTRATING PROFICIENCY IN AC ELECTRONICS		0	1	2	3
1	Identify electronic components and their schematic symbols.				
2	Interpret schematic, block, and pictorial diagrams.				
3	Solve AC electronics problems involving current, voltage, resistance, reactance, impedance, and power.				
4	Describe the function and operation of capacitors in AC circuits.				
5	Describe the function and operation of inductors in AC circuits.				
6	Describe the function and operation of RL, RC, and RLC circuits.				
7	Describe the function and operation of transformers.				
UNIT D: DEMONSTRATING PROFICIENCY IN SEMICONDUCTOR DEVICES		0	1	2	3
1	Identify electronic components and their schematic symbols.				
2	Interpret schematic, block, and pictorial diagrams.				
3	Describe the function and operation of semiconductor devices.				
4	Describe the functions and operations of diode circuits, rectifiers, and transistor amplifiers.				
5	Demonstrate techniques for handling and replacing semiconductors				
UNIT E: DEMONSTRATING PROFICIENCY IN DIGITAL ELECTRONICS		0	1	2	3
1	Identify and convert number systems: binary, octal, decimal, hexadecimal, and binary coded decimal.				
2	Identify electronic components and their schematic symbols.				
3	Interpret schematic, block, and pictorial diagrams.				
4	Interpret and develop truth tables and Boolean expressions of logic circuits.				
5	Test the operation of logic gates.				
6	Test the operation of clock and timing circuits.				
7	Build and test combinational logic circuits for a given application.				
8	Test counter and controller circuits for sequential logic applications.				
9	Interpret information on integrated circuits (IC) data and specification sheets.				
10	Test the operation of analog to digital (A/D) and digital to analog (D/A) converters.				
UNIT F: DEMONSTRATING PROFICIENCY IN SOLDERING AND ASSEMBLING TECHNIQUES		0	1	2	3
1	Select and maintain soldering and desoldering tools.				
2	Solder and desolder components.				



3	Select and install connection devices (e.g., terminal, lug, crimp, spade).				
UNIT G: DEMONSTRATING PROFICIENCY IN USE OF TEST EQUIPMENT		0	1	2	3
1	Measure voltage, current, and resistance using multimeters (e.g., VOM, DMM, DVM).				
2	Measure voltage, time, frequency, and phase angle using an oscilloscope.				
3	Operate a power source.				
4	Operate signal and function generators.				
The student may be exposed to this additional technical content depending on each school's unique situation.					
ADVANCED ELECTRONICS TECHNOLOGY CONTENT:		0	1	2	3
1	Apply network theorems (superposition, Thevenin's, and Norton's).				
2	Perform vector analysis in RL, RC, and RLC circuits.				
3	Demonstrate uses of thyristors, analog ICs, and optoelectric devices.				
4	Perform arithmetic operations in various digital number systems.				
5	Test the operations of binary adders.				
6	Apply De Morgan's theorem to simplify Boolean expressions.				
INDUSTRIAL ELECTRONIC CONTROL SYSTEMS:		0	1	2	3
1	Identify electronic component schematic symbols.				
2	Test and repair motor control systems (e.g., starters, control wiring, variable-speed drives, overcurrent protection).				
3	Identify and test sensors.				
4	Test and repair solid-state power controls.				
5	Test, repair, and maintain computer-controlled systems (e.g., CNC, robotics, and process control).				
PROGRAMMABLE LOGIC CONTROLS:		0	1	2	3
1	Identify electronic component schematic symbols.				
2	Describe the function and purpose of a programmable logic controller (PLC).				
3	Compare hardwired and PLC systems.				
4	Convert between number systems.				
5	Analyze a binary logic network.				
6	Describe the purpose of the various power supplies used within a PLC.				
7	Construct input/output (I/O) circuits.				



8	Define the function of the PLC processor module.				
9	Describe the interrelations between microprocessor components.				
10	State the characteristics of the different types of memory.				
11	Demonstrate the features of relay ladder logic instruction categories.				
12	Demonstrate the principles used to correlate PLC hardware components to software instructions.				
13	Convert a hardware ladder diagram to a PLC ladder diagram.				
14	Program PLC using above diagram.				
15	Troubleshoot problems in PLC circuit using a given diagram.				
BASIC INSTALLATION AND MAINTENANCE PROCEDURES FOR AUDIO AND VIDEO EQUIPMENT:		0	1	2	3
1	Describe operation of audio and video equipment.				
2	Install and maintain major types of audio and video equipment.				

