

Packet Number	Packet Title	Articulated Credit	Instructor Initials
UNIT 3	ELECTRICAL THEORY		
INEL 3A	Electrical theory	0.25	
INEL 3B	Static electricity	0.25	
INEL 3C	Calculators and electronics	0.25	
INEL 3D	Devices and symbols	0.25	
INEL 3E	Multimeter	0.33	
INEL 3F	Ohm's law	0.33	
INEL 3G	Series circuits	0.33	
INEL 3H	Parallel circuits	0.33	
INEL 3J	Series and parallel circuits	0.33	
INEL 3K	Magnetism	0.25	
INEL 3L	Alternating current	0.25	
INEL 3M	Oscilloscope	0.33	
INEL 3N	Inductance	0.42	
INEL 3P	Capacitance	0.42	
INEL 3Q	R.C.L. circuits	0.33	
INEL 3R	Conduction	0.33	
INEL 3S	Theory overview	0.21	
	Unit Total	5.19	
UNIT 4	NATIONAL ELECTRICAL CODE (NEC)		
INEL 4A	General wiring fundamentals	0.25	
INEL 4B	Wire, raceway and box sizing	0.33	
INEL 4C	Branch circuits	0.33	
INEL 4D	Service and feeder calculations	0.25	
INEL 4E	Grounding and bonding	0.33	
INEL 4F	Overcurrent protection	0.33	
INEL 4G	Motor circuit wiring	0.25	
INEL 4H	Transformers	0.25	
INEL 4J	General hazardous locations	0.25	
INEL 4K	Health care facilities	0.25	
INEL 4L	Emergency power systems	0.33	
INEL 4M	Industrial applications	0.33	
INEL 4N	Special application wiring	0.25	
INEL 4P	NEC review	0.17	
	Unit Total	3.90	
UNIT 5	ELECTRICAL MOTOR CONTROLS 1		
WBEL 5A	Electrical motor controls	0.42	
WBEL 5B	Manual motor controls	0.50	
WBEL 5C	Control transformers	0.42	
WBEL 5D	Control ladder logic	0.67	
WBEL 5E	Control relays and motor starter	0.50	
WBEL 5F	Intro to troubleshooting	0.33	
WBEL 5G	Systems troubleshooting	0.42	
WBEL 5H	Automatic input devices	0.42	
WBEL 5J	Electronic sensors	0.33	
WBEL 5K	Basic timer control	0.33	
WBEL 5L	Timers and counters	0.25	
	Unit Total	4.59	

Packet Number	Packet Title	Articulated Credit	Instructor Initials
UNIT 7	ROTATING ELECTRIC MACHINES		
WBEL 7A	DC series motors	0.25	
WBEL 7B	DC shunt and compound motors	0.33	
WBEL 7C	Motor speed and torque	0.33	
WBEL 7D	Motor performance	0.25	
WBEL 7E	Split phase motore	0.25	
WBEL 7F	Capacitor start motors	0.25	
WBEL 7G	Permanent capacitor motors	0.25	
WBEL 7H	Three-phase motors	0.33	
	Unit Total	2.24	
UNIT 8	POWER DISTRIBUTION SYSTEMS		
WBEL 8A	Power generat and distribution	0.33	
WBEL 8B	Electrical wiring techniques	0.33	
WBEL 8C	Wiring system installation	0.42	
WBEL 8D	Intro to raceways	0.42	
WBEL 8E	Basic conduit bending	0.25	
WBEL 8F	Advanced raceways	0.25	
WBEL 8G	Conduct and overcurrent protect	0.25	
WBEL 8H	Conduct sizing and wire pulling	0.33	
	Unit Total	2.58	
UNIT 9	FACILTLY MAINTENANCE		
INEL 9A	Plans and sitework	0.25	
INEL 9B	Industrial power systems	0.42	
INEL 9C	Signaling systems	0.25	
INEL 9D	Motors, controllers and installa	0.33	
INEL 9E	Special equipment and HVAC	0.33	
INEL 9F	Industrial hazardous locations	0.25	
INEL 9G	Single phase transformers	0.33	
INEL 9H	3 phase transformers	0.50	
INEL 9J	NEC transformer requirements	0.25	
INEL 9K	Emergency electrical systems	0.25	
	Unit Total	1.42	
UNIT 10	ELECTRICAL CONTROL WIRING		
WBEL 10A	Electrical control wiring	0.42	
WBEL 10B	Electrical control systems	1.00	
	Unit Total	1.42	

Packet Number	Packet Title	Articulated Credit	Instructor Initials
UNIT 11	INDUSTRIAL ELECTRONICS		
INEL 11A	Using the oscilloscope	0.67	
INEL 11B	Meters for electronics	0.33	
INEL 11C	Electronic soldering	0.25	
INEL 11D	Soldering PC boards	0.25	
INEL 11E	Diodes	0.25	
INEL 11F	Power supplies	0.50	
INEL 11G	Photo devices	0.33	
INEL 11H	Solid state devices	0.83	
INEL 11J	Electronic timing	0.33	
INEL 11K	Amplifiers	0.83	
INEL 11L	Digital logic fundamentals	0.50	
INEL 11M	Digital logic applications	0.42	
INEL 11N	Proximity switching	0.17	
INEL 11P	Photoelectric devices	0.17	
INEL 11Q	Fiber optics fundamentals	0.33	
INEL 11R	Fiber optics-lab	0.25	
	Unit Total	6.41	

Packet Number	Packet Title	Articulated Credit	Instructor Initials
UNIT 12	PROGRAM LOGIC CONTROLLERS 1		
WBEL 12A	Intro to program controllers	0.25	
WBEL 12B	Basic PLC programming	0.50	
WBEL 12C	PLC motor control	0.50	
WBEL 12D	DISCRETE I/O INTERFACING	0.33	
WBEL 12E	Intro to PLC troubleshooting	0.33	
WBEL 12F	PLC systems troubleshooting	0.33	
	Unit Total	2.24	
	Program Total	32.48	

Instructor's Signature

Date

OPTIONAL MODULES

INSTRUCTIONS

These are **OPTIONAL** electrical modules and should be used in conjunction with the initial electrical program if necessary.

Packet Number	Packet Title	Articulated Credit	Instructor Initials
UNIT 1	ELECTRICAL SAFETY		
WBEL 1A	Electrical Safety	0.17	
	Unit Total	0.17	
UNIT 3	ELECTRICAL SYSTEMS		
WBEL 3A	Basic electrical circuits	0.33	
WBEL 3B	Electrical measures	0.42	
WBEL 3C	Circuit analysis	0.42	
WBEL 3D	Inductance and capacitance	0.42	
WBEL 3E	Combination circuits	0.42	
WBEL 3F	Transformers	0.33	
WBEL 3G	Control logic	0.50	
WBEL 3H	Sequencing control	0.33	
WBEL 3J	Timers and advanced systems	0.42	
	Unit Total	3.59	

Packet Number	Packet Title	Articulated Credit	Instructor Initials
UNIT 6	ELECTRICAL MOTOR CONTROLS 2		
WBEL 6A	Reversing motor control	0.33	
WBEL 6B	Braking method	0.42	
WBEL 6C	Reduced voltage starting	0.33	
WBEL 6D	Intro to freq drives (AC)	0.33	
WBEL 6E	AC drives/speed/torque contr	0.33	
WBEL 6F	AC drives/accel and decellerat	0.33	
WBEL 6G	AC drives/troubleshooting	0.33	
WBEL 6H	SCR motor control	0.42	
	Unit Total	2.82	
UNIT 13	PROGRAM LOGIC CONTROLLERS 2		
WBEL 13A	Event sequencing	0.33	
WBEL 13B	Application development	0.50	
WBEL 13C	PLC timer instructions	0.50	
WBEL 13D	PLC counter instructions	0.50	
WBEL 13E	Program control instructions	0.50	
WBEL 13F	Math and data move instructions	0.58	
	Unit Total	2.91	

Packet Number	Packet Title	Articulated Credit	Instructor Initials
UNIT 5	ELECTRICAL SCHEMATIC DRAWINGS		
INEL 5A	Identify electrical systems	0.25	
INEL 5B	Introduction to line diagrams	0.33	
INEL 5C	Schematic drawings	0.67	
INEL 5D	Troubleshooting with drawings	0.25	
INEL 5E	Troubleshooting equipment	0.17	
	Unit Total	1.67	
UNIT 6	MOTOR CONTROLS		
INEL 6A	Using the megohmmeter	0.08	
INEL 6B	3-phase motor controls	1.33	
INEL 6C	3-phase motor controls (lab)	1.67	
INEL 6D	3-phase motors	0.17	
INEL 6E	3-phase motors (lab)	0.17	
INEL 6F	DC motors and controls	0.62	
INEL 6G	DC motors and controls (lab)	1.25	
INEL 6H	DC motors	0.17	
INEL 6J	DC motors (lab)	0.17	
INEL 6K	1 phase motors and controls	0.75	
INEL 6L	1 phase motors and controls (lab)	0.75	
INEL 6M	1 phase motor (lab)	0.25	
	Unit Total	7.38	
UNIT 8	WIRING MACHINE CONTROLS		
INEL 8A	Knock-out punches	0.25	
INEL 8B	Control transformers	0.25	
INEL 8C	Wiring machine controls	0.75	
INEL 8D	Control panel wiring	1.04	
INEL 8E	PLC wiring	0.83	
	Unit Total	3.12	

Packet Number	Packet Title	Articulated Credit	Instructor Initial
UNIT 14	PANEL VIEW		
INEL 14A	Intro to panel view	0.17	
INEL 14B	Terminal overview	0.25	
INEL 14C	Wiring and set up	0.25	
INEL 14D	Configuring the terminal	0.25	
INEL 14E	Troubleshooting and maintenance	0.25	
INEL 14F	Programming panel view	0.83	
INEL 14G	Panel view and PLC applications	1.04	
INEL 14H	Panel view and PLC communication	0.21	
	Unit Total	3.25	
UNIT 20			
INEL 20A	Intro to electricity	0.17	
INEL 20B	Current electricity	0.17	
INEL 20C	Magnetism	0.17	
INEL 20D	Current, reisis, and poten differ	0.25	
INEL 20E	Electrical components	0.29	
INEL 20F	Indicating instruments	0.21	
INEL 20G	Intro to semiconductors	0.21	
INEL 20H	Transistors	0.21	
INEL 20J	Integrated circuits	0.13	
INEL 20K	Identi semiconductor packages	0.29	
	Unit Total	2.10	