



# H.H. Arnold High School Professional Technical Studies ASSIGNMENT CHECKLIST

Course #      Course Title  
**VEE301**      **Digital Electronics I**

Area      Competency      Category  
**A**      **ELECTRONICS TECHNOLOGY COURSE ORIENTATION**

<u>Task</u>	<u>Task/Skill</u>	<u>Started</u> mm/dd/yy	<u>Completed</u> mm/dd/yy
<b>1</b>	<b>Orientation to Electronics Technology Curriculum</b>	( / / )	( / / )

The student will demonstrate their knowledge of the procedures used in the Technology Education Curriculum. They will complete a series of forms, set up a notebook, login to the network, use electronic mail, print out assignment check-lists and performance reports, as well as successfully complete an examine on the skills necessary to be successful in this course.

<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>
a	( )		<b>Reading Assignment</b>	Student Orientation Packet
b	( )		<b>Homework Assignment</b>	The Student Record
c	( )		<b>Assignment Sheet</b>	Student Record of Counseling
d	( )		<b>Notebook</b>	Notebook Review
e	( )		<b>Performance Test</b>	Using the Local Area Network (LAN)
f	( )		<b>Performance Test</b>	Using Electronic Mail
g	( )		<b>Performance Test</b>	The Assignment Check-List
h	( )		<b>Performance Test</b>	The Student Progress Report
i	( )		<b>Performance Test</b>	Navigating the Tech Ed Web Page
j	( )		<b>Computer Test</b>	Orientation to Electronics Technology

<u>Task</u>	<u>Task/Skill</u>	<u>Started</u> mm/dd/yy	<u>Completed</u> mm/dd/yy
<b>2</b>	<b>The Technical Report</b>	( / / )	( / / )

The student will complete a model of a technical report on the technical report process. The student will use the correct tools to write an objective statement, describe the procedure, devise a table and graph, and create a diagram of the technical report process. Finally, the student will write a conclusion statement about the theory and operation of the technical report process.

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<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>
a	( )		Technical Report	The Technical Report

<u>Task</u>	<u>Task/Skill</u>	<u>Started</u> mm/dd/yy ( / / )	<u>Completed</u> mm/dd/yy ( / / )
<b>3</b>	<b>The Homework Assignment</b>		

The student will complete a technical report about the homework process. They will use the correct tools to write an objective statement, describe the procedure, complete a table and graph, and create a diagram of the homework process. Finally, the student will write a conclusion statement about the theory and operation of the homework assignment.

<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>
a	( )		Technical Report	The Homework Assignment



# H.H. Arnold High School Professional Technical Studies ASSIGNMENT CHECKLIST

Course #      Course Title  
**VEE301**      **Digital Electronics I**

Area      Competency      Category  
**B**      **INTRODUCTION TO ELECTRONICS TECHNOLOGY**

<u>Task</u>	<u>Task/Skill</u>	<u>Started</u> mm/dd/yy	<u>Completed</u> mm/dd/yy
<b>1</b>	<b>Intro to Electricity/Electronics Tech. - (Theory)</b>	( / / )	( / / )

The student will demonstrate their knowledge of the introductory material to Electricity and Electronics Technology by reading, doing homework assignments, and then successfully completing an exam about the material. They will answer questions about the following:

1. Atoms, Electrons, and Electric Charges
2. Electric Circuits
3. Circuit Diagrams and Symbols
4. Safety Rules, Practices, and Devices
5. Occupations in Electricity and Electronics

<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>
a	(    )		<b>Video Tape Inst.</b>	Electrical Principles - ME:5129
b	(    )		<b>Computer Aided Inst.</b> <b>Source:</b>	Basic Electronic Theory EKI Tutorial Software - ANALOG
			<b>Unit:</b> EDL1	<b>Page:</b>
				<b>Min. Score:</b> 85%
c	(    )		<b>Computer Aided Inst.</b> <b>Source:</b>	Coulombs Law EKI Tutorial Software - THE LAWS
			<b>Unit:</b> MC3001	<b>Page:</b>
				<b>Min. Score:</b> 85%
d	(    )		<b>Computer Aided Inst.</b> <b>Source:</b>	Basic Circuits EKI Tutorial Software - THE LAWS
			<b>Unit:</b> MC3004	<b>Page:</b>
				<b>Min. Score:</b> 85%
e	(    )		<b>Reading Assignment</b>	Introduction
			<b>Source:</b> Understanding Electricity and Electronics Technology	
			<b>Unit:</b> 1	<b>Page:</b> 1 to 41
				<b>Min. Score:</b> 85%
f	(    )		<b>Homework Assignment</b>	Self-Test 3, 11, 14, and 21.
			<b>Source:</b> Understanding Electricity and Electronics Technology	
			<b>Unit:</b> 1	<b>Page:</b> 6
				<b>Min. Score:</b> 85%

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- g ( ) **Homework Assignment** Self-Test 2, 3, 6, and 8.  
**Source:** Understanding Electricity and Electronics Technology  
**Unit:** 2 **Page:** 10 **Min. Score:** 85%
- h ( ) **Homework Assignment** Self-Test 3, 5, 6, and 7.  
**Source:** Understanding Electricity and Electronics Technology  
**Unit:** 3 **Page:** 18 **Min. Score:** 85%
- i ( ) **Homework Assignment** Self-Test 4, 9, 12, and 18.  
**Source:** Understanding Electricity and Electronics Technology  
**Unit:** 4 **Page:** 31 **Min. Score:** 85%
- j ( ) **Homework Assignment** Self-Test 1, 3, 5, and 7.  
**Source:** Understanding Electricity and Electronics Technology  
**Unit:** 5 **Page:** 41 **Min. Score:** 85%
- k ( ) **Computer Test** Intro to Electricity/Electronics Tech
- l ( ) **Notebook** Notebook Review

<u>Task</u>	<u>Task/Skill</u>	<u>Started</u>	<u>Completed</u>
		<u>Mm/dd/yy</u>	<u>mm/dd/yy</u>
<b>2</b>	<b>Get to Know Your Trainer</b>	( / / )	( / / )

As the instructor points to components on the student's trainer, the student will name the parts. The instructor will also provide the names of some parts and the student will identify them. The student will demonstrate how to use the Lab-Volt Preparatory Electricity and Electronics Trainer (PEET) by constructing a simple working circuit using the Konnect-All board, two lamps, two cells, PBNC switch, and four wires. The circuit will illuminate the two lamps when the switch is released and turn them off when it is pressed.

<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>
a	( )		<b>Lab Experiment</b> <b>Source:</b> <b>Unit:</b> 1	Get to Know Your Trainer Fundamentals of AC/DC <b>Page:</b> <b>Min. Score:</b> 85%
b	( )		<b>Performance Test</b>	Get to Know Your Trainer
c	( )		<b>Technical Report</b>	Get to Know Your Trainer

<u>Task</u>	<u>Task/Skill</u>	<u>Started</u>	<u>Completed</u>
		<u>mm/dd/yy</u>	<u>mm/dd/yy</u>
<b>3</b>	<b>Symbols and Schematics</b>	( / / )	( / / )

The student will be able to identify and draw the following schematic symbols:

Incandescent Lamp	Neon Lamp	Earth Ground	Chassis Ground
Wires Crossing (Not Connected)	PBNC Switch	PBNO Switch	Wire
Wires Connected	Ammeter	Volt Meter	Ohm Meter
Motor	Cell	Battery	Capacitor
Fixed Resistor	Variable Resistor	Coil	Choke Coil
Transformer			

The student will demonstrate how these symbols can be connected together to diagram a circuit. The test circuit

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will be a cell, PBNO switch, and an incadescent lamp connected together with wires so when the switch is pressed the lamp illuminates.

<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>
a	( )		Lab Experiment Source: Unit: 2	Symbols and Schematics Fundamentals of AC/DC Page:                      Min. Score: 85%
b	( )		Performance Test	Symbols and Schematics
c	( )		Technical Report	Symbols and Schematics

<u>Task</u>	<u>Task/Skill</u>	<u>Started</u> mm/dd/yy	<u>Completed</u> mm/dd/yy
4	<b>An Introduction to Electricity</b>	( / / )	( / / )

The student will demonstrate the existence and the properties of electricity using some common materials. They will state and then demonstrate the law of electrical charges.

<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>
a	( )		Lab Experiment Source: Unit: 4	An Introduction to Electricity Fundamentals of AC/DC Page:                      Min. Score: 85%
b	( )		Performance Test	An Introduction to Electricity
c	( )		Technical Report	An Introduction to Electricity



# H.H. Arnold High School Professional Technical Studies ASSIGNMENT CHECKLIST

Course #      Course Title  
**VEE301**      **Digital Electronics I**

Area      Competency      Category  
**C**      **ELECTRICAL PROPERTIES AND CHARACTERISTICS**

<u>Task</u>	<u>Task/Skill</u>	<u>Started</u>	<u>Completed</u>
1	<b>Voltage, Current, Power, and Resistance - (Theory)</b>	mm/dd/yy	mm/dd/yy
		( / / )	( / / )

The student will demonstrate their knowledge of various topics regarding Electric Circuits and Devices. They will read assignments, solve homework problems, complete CAI lessons, and pass an exam about this material. The subjects covered in this section are:

1. Voltage, Current and Resistance
2. Conductors and Insulators
3. Resistance and Resistors
4. Ohm's Law and Power Formulas

<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>
a	(    )		<b>Video Tape Inst.</b>	Electrical Circuits Ohm's Law ME-5134
b	(    )		<b>Reading Assignment</b> <b>Source:</b> Understanding <b>Unit:</b> 2	Electric Circuits and Devices Electricity and Electronics Technology <b>Page:</b> 42 to 68 <b>Min. Score:</b> 85%
c	(    )		<b>Computer Aided Inst.</b> <b>Source:</b> <b>Unit:</b> MC3002	Powers of 10 & Engineering Notation EKI Tutorial Software - THE LAWS <b>Page:</b> <b>Min. Score:</b> 85%
d	(    )		<b>Computer Aided Inst.</b> <b>Source:</b> <b>Unit:</b> MC3003	Electrical Quantities EKI Tutorial Software - THE LAWS <b>Page:</b> <b>Min. Score:</b> 85%
e	(    )		<b>Job Sheet</b> <b>Source:</b> <b>Unit:</b> Calculator	Using a Scientific Calculator Student Activity Guide <b>Page:</b> <b>Min. Score:</b> 100%
f	(    )		<b>Computer Aided Inst.</b> <b>Source:</b> <b>Unit:</b> LPA01	How a Resistor Works EKI Tutorial Software - ANALOG <b>Page:</b> <b>Min. Score:</b> 85%
g	(    )		<b>Computer Aided Inst.</b> <b>Source:</b> <b>Unit:</b> MC3006	Resistors EKI Tutorial Software - THE LAWS <b>Page:</b> <b>Min. Score:</b> 85%

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h	( )	<b>Computer Aided Inst.</b> <b>Source:</b> <b>Unit:</b> EDL2	Resistor Color Code EKI Tutorial Software - ANALOG	<b>Page:</b>	<b>Min. Score:</b> 85%
i	( )	<b>Computer Aided Inst.</b> <b>Source:</b> <b>Unit:</b> LPA02	How a Potentiometer Works EKI Tutorial Software - ANALOG	<b>Page:</b>	<b>Min. Score:</b> 85%
j	( )	<b>Computer Aided Inst.</b> <b>Source:</b> <b>Unit:</b> MC3007	Ohms Law EKI Tutorial Software - THE LAWS	<b>Page:</b>	<b>Min. Score:</b> 85%
k	( )	<b>Computer Aided Inst.</b> <b>Source:</b> <b>Unit:</b> MOOA0	What is an Analog Multimeter EKI Tutorial Software - MULTIMETER	<b>Page:</b>	<b>Min. Score:</b> 85%
l	( )	<b>Computer Aided Inst.</b> <b>Source:</b> <b>Unit:</b> MOOA1	Continuity and Resistance EKI Tutorial Software - MULTIMETER	<b>Page:</b>	<b>Min. Score:</b> 85%
m	( )	<b>Computer Aided Inst.</b> <b>Source:</b> <b>Unit:</b> MOOA2	Measuring Voltage EKI Tutorial Software - MULTIMETER	<b>Page:</b>	<b>Min. Score:</b> 85%
n	( )	<b>Computer Aided Inst.</b> <b>Source:</b> <b>Unit:</b> MOOA3	Measuring Current EKI Tutorial Software - MULTIMETER	<b>Page:</b>	<b>Min. Score:</b> 85%
o	( )	<b>Homework Assignment</b> <b>Source:</b> Understanding <b>Unit:</b> 6	Self-Test 1, 3, and 8. Electricity and Electronics Technology	<b>Page:</b> 46	<b>Min. Score:</b> 85%
p	( )	<b>Homework Assignment</b> <b>Source:</b> Understanding <b>Unit:</b> 7	Self-Test 5 to 10. Electricity and Electronics Technology	<b>Page:</b> 51	<b>Min. Score:</b> 85%
q	( )	<b>Homework Assignment</b> <b>Source:</b> Understanding <b>Unit:</b> 8	Self-Test 1, 3, 7, 9, and 10. Electricity and Electronics Technology	<b>Page:</b> 58	<b>Min. Score:</b> 85%
r	( )	<b>Homework Assignment</b> <b>Source:</b> Understanding <b>Unit:</b> 9	Self-Test 5 to 10. Electricity and Electronics Technology	<b>Page:</b> 67	<b>Min. Score:</b> 85%
s	( )	<b>Computer Test</b>	Electric Circuits and Devices (Part 1)		
t	( )	<b>Computer Test</b> <b>Source:</b>	Color Code Challenge EKI Tutorial Software - CHALLENGES		

u	( )	<b>Computer Test</b> <b>Source:</b>	Ohm's Law Challenge EKI Tutorial Software - CHALLENGES
v	( )	<b>Computer Test</b> <b>Source:</b>	Multimeter Challenge EKI Tutorial Software - CHALLENGES
w	( )	<b>Notebook</b>	Notebook Review

<u>Task</u>	<u>Task/Skill</u>	<u>Started</u>	<u>Completed</u>
<b>2</b>	<b>Voltage, Current, and Resistance</b>	<u>mm/dd/yy</u>	<u>mm/dd/yy</u>
		( / / )	( / / )

The student will demonstrate how to measure voltage, current, and resistance using the DC Meter and Electronic Volt-Ohm-Milliammeter (EVOM). The will also provide the instructor with definitions of what voltage, current, and resistance.

<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>
a	( )		<b>Lab Experiment</b> <b>Source:</b> <b>Unit:</b> 5	Voltage, Current, and Resistance Fundamentals of AC/DC
			<b>Page:</b>	<b>Min. Score:</b> 85%
b	( )		<b>Performance Test</b>	Voltage, Current, and Resistance
c	( )		<b>Technical Report</b>	Voltage, Current, and Resistance

<u>Task</u>	<u>Task/Skill</u>	<u>Started</u>	<u>Completed</u>
<b>3</b>	<b>Basic Electrical Circuits</b>	<u>mm/dd/yy</u>	<u>mm/dd/yy</u>
		( / / )	( / / )

The student will state the electrical characteristics of basic circuits. They will also demonstrate ways of controlling currents using an EVOM to measure circuit voltages, currents, and resistances in a test circuit. The test circuit will be comprised of 6VDC power source, DPDT switch, and a DC Electric Motor. The student will build a circuit which changes the motor's direction of rotation when the switch is changed from one position to the other. The student will create a chart showing the voltage at the motor, current being used by the motor, and the resistance of the motor. Finally, the student will show the relationship between polarity and motor rotation.

<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>
a	( )		<b>Lab Experiment</b> <b>Source:</b> <b>Unit:</b> 8	Basic Electrical Circuits Fundamentals of AC/DC
			<b>Page:</b> 8-1 TO 8-18	<b>Min. Score:</b> 85%
b	( )		<b>Performance Test</b>	Basic Electrical Circuits
c	( )		<b>Technical Report</b>	Basic Electrical Circuits

<u>Task</u>	<u>Task/Skill</u>	<u>Started</u>	<u>Completed</u>
<b>4</b>	<b>Ohm's Law</b>	<u>mm/dd/yy</u>	<u>mm/dd/yy</u>
		( / / )	( / / )

Started                      Completed

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*Subtasks are to be initialed by the instructor as they are completed. Indicate the task start and completion dates. Submit this form when each task is done.*

The student will be able to demonstrate how to use Ohm's law to calculate resistance, current, voltage, and power in a test circuit. The student will verify their results using a DC meter. To demonstrate their skill, the student will construct three test circuits given them by their instructor. Each circuit will have a missing quantity (voltage, current, or resistance). The student will solve for the missing quantity using Ohm's law and then verify their results using a DC meter.

<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>
a	( )		Lab Experiment Source: Unit: 11	Ohm's Law Fundamentals of AC/DC Page:                      Min. Score: 85%
b	( )		Performance Test	Ohm's Law
c	( )		Technical Report	Ohm's Law

<u>Task</u>	<u>Task/Skill</u>	<u>Started</u> mm/dd/yy	<u>Completed</u> mm/dd/yy
5	Resistors	( / / )	( / / )

The student will be able to identify resistor types, ohmic values, tolerance ranges, and power ratings determined by the components size, shape, or markings. To demonstrate their skills, the student will determine the ohmic value of three resistors drawn at random from the parts box by reading the resistor's color code. They will also construct a circuit using a 5VDC power source, incandescent lamp, and a 200 Ohm variable resistor. The circuit's function is to control the intensity of the lamp by adjusting the variable resistor.

<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>
a	( )		Lab Experiment Source: Unit: 12	Resistors Fundamentals of AC/DC Page:                      Min. Score: 85%
b	( )		Performance Test	Resistors
c	( )		Technical Report	Resistors



h	( )	<b>Computer Aided Inst.</b>	Series-Parallel Circuits
		<b>Source:</b>	EKI Tutorial Software - THE LAWS
		<b>Unit:</b> MC3016	<b>Page:</b>
			<b>Min. Score:</b> 85%
i	( )	<b>Homework Assignment</b>	Self-Test 3 to 5, 7, and 8.
		<b>Source:</b>	Understanding Electricity and Electronics Technology
		<b>Unit:</b> 10	<b>Page:</b> 76
			<b>Min. Score:</b> 85%
j	( )	<b>Homework Assignment</b>	Self-Test 2 to 6.
		<b>Source:</b>	Understanding Electricity and Electronics Technology
		<b>Unit:</b> 11	<b>Page:</b> 85
			<b>Min. Score:</b> 85%
k	( )	<b>Homework Assignment</b>	Self-Test 4, 6, 7, 9, and 10.
		<b>Source:</b>	Understanding Electricity and Electronics Technology
		<b>Unit:</b> 12	<b>Page:</b> 93
			<b>Min. Score:</b> 85%
l	( )	<b>Homework Assignment</b>	Self-Test 1, 5, and 8 to 10.
		<b>Source:</b>	Understanding Electricity and Electronics Technology
		<b>Unit:</b> 13	<b>Page:</b> 102
			<b>Min. Score:</b> 85%
m	( )	<b>Computer Test</b>	Electric Circuits and Devices (Part 2)

<u>Task</u>	<u>Task/Skill</u>	<u>Started</u>	<u>Completed</u>
<b>2</b>	<b>Series Resistor Circuits</b>	<u>mm/dd/yy</u>	<u>mm/dd/yy</u>
		( / / )	( / / )

The student will measure the resistance, voltage, current, and power in a series resistive circuit. They will then verify their measurements using Ohm's law and the power formula.

<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>
a	( )		<b>Lab Experiment</b>	Series Resistor Circuits
			<b>Source:</b>	Fundamentals of AC/DC
			<b>Unit:</b> 13	<b>Page:</b> 13-1
				<b>Min. Score:</b> 85%
b	( )		<b>Performance Test</b>	Series Resistor Circuits
c	( )		<b>Technical Report</b>	Series Resistor Circuits

<u>Task</u>	<u>Task/Skill</u>	<u>Started</u>	<u>Completed</u>
<b>3</b>	<b>Parallel Resistor Circuits</b>	<u>mm/dd/yy</u>	<u>mm/dd/yy</u>
		( / / )	( / / )

The student will measure the resistance, voltage, current, and power in a parallel resistive circuit. They will then verify their measurements using Ohm's law and the power formula.

<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>
a	( )		<b>Lab Experiment</b>	Parallel Resistor Circuits
			<b>Source:</b>	Fundamentals of AC/DC

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Unit: 14

Page:

Min. Score: 85%

- b ( ) Performance Test Parallel Resistor Circuits
- c ( ) Technical Report Parallel Resistor Circuits

<u>Task</u>	<u>Task/Skill</u>	<u>Started</u>	<u>Completed</u>
		<u>mm/dd/yy</u>	<u>mm/dd/yy</u>
<b>4</b>	<b>Series-Parallel Resistor Circuits</b>	( / / )	( / / )

The student will measure the resistance, voltage, current, and power in a series-parallel resistive circuit. They will then verify their results using Ohm's law and the power formula.

<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>
a	( )		<b>Lab Experiment</b> <b>Source:</b> <b>Unit: 15</b>	Series-Parallel Resistor Circuits Fundamentals of AC/DC
				<b>Page:</b> <b>Min. Score: 85%</b>
b	( )		<b>Performance Test</b>	Series-Parallel Resistor Circuits
c	( )		<b>Technical Report</b>	Series-Parallel Resistor Circuits

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# H.H. Arnold High School Professional Technical Studies ASSIGNMENT CHECKLIST

Course #      Course Title  
**VEE301**      **Digital Electronics I**

Area      Competency Category  
**E**      **ELECTRONIC CIRCUITS VOCATIONAL**

<u>Task</u>	<u>Task/Skill</u>	<u>Started</u>	<u>Completed</u>
<b>1</b>	<b>Passive Devices</b>	mm/dd/yy	mm/dd/yy
		( / / )	( / / )

The student will demonstrate their knowledge of passive electronic devices by constructing electrical circuits comprised of resistor, potentiometer, photocell, capacitor, and speaker devices on a solderless circuit board. They will demonstrate their skill by completing computer aided instruction lessons and obtaining a perfect score on associated quizzes. The enrichment activities are optional.

<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>
a	(    )	10 Min	<b>Reading Assignment</b> Source: Unit: INTRO	<b>Introduction Page</b> Electronics Discovery Guide - EKI (Mr. Circuit I) Page: 3
b	(    )	5 Min	<b>Reading Assignment</b> Source: Unit: LESSON 1	<b>Basic Electronic Theory</b> Electronics Discovery Guide - EKI (Mr. Circuit I) Page: 7
c	(    )	10 Min	<b>Computer Aided Inst.</b> Source: Unit: EDL1	<b>Basic Electronic Theory</b> Electronics Discovery CAI Software - EKI Page: <b>Min. Score:</b> 80%
d	(    )	5 Min	<b>Reading Assignment</b> Source: Unit: LESSON 2	<b>Resistor Color Code</b> Electronics Discovery Guide - EKI (Mr. Circuit I) Page: 7 AND 8
e	(    )	10 Min	<b>Computer Aided Inst.</b> Source: Unit: EDL2	<b>Resistor Color Code</b> Electronics Discovery CAI Software - EKI Page: <b>Min. Score:</b> 80%
f	(    )	10 Min	<b>Computer Aided Inst.</b> Source: Unit: EDL3	<b>Using Solderless Circuit Boards</b> Electronics Discovery CAI Software - EKI Page: <b>Min. Score:</b> 80%
g	(    )	10 Min	<b>Exercise</b> Source: Unit: LESSON 3	<b>Using Solderless Circuit Boards</b> Electronics Discovery Guide - EKI (Mr. Circuit I) Page: 8 AND 9

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Submit this form when each task is done.*

h	( )	10 Min	Computer Aided Inst.	<b>How a Resistor Works</b>
			Source:	Electronics Discovery CAI Software - EKI
			Unit: LPA01	Page: Min. Score: 80%
i	( )	10 Min	Exercise	<b>How a Resistor Works</b>
			Source:	Electronics Discovery Guide - EKI (Mr. Circuit I)
			Unit: EXP 1	Page: 10 AND 11
j	( )	10 Min	Computer Aided Inst.	<b>How a Potentiometer Works</b>
			Source:	Electronics Discovery CAI Software - EKI
			Unit: LPA02	Page: Min. Score: 80%
k	( )	10 Min	Exercise	<b>How a Potentiometer Works</b>
			Source:	Electronics Discovery Guide - EKI (Mr. Circuit I)
			Unit: EXP 2	Page: 12 AND 13
l	( )	10 Min	Computer Aided Inst.	<b>How a Photocell Works</b>
			Source:	Electronics Discovery CAI Software - EKI
			Unit: LPA03	Page: Min. Score: 80%
m	( )	10 Min	Exercise	<b>How a Photocell Works</b>
			Source:	Electronics Discovery Guide - EKI (Mr. Circuit I)
			Unit: EXP 3	Page: 14 AND 15
n	( )	10 Min	Computer Aided Inst.	<b>How a Capacitor Works</b>
			Source:	Electronics Discovery CAI Software - EKI
			Unit: LPA04	Page: Min. Score: 80%
o	( )	10 Min	Exercise	<b>How a Capacitor Works</b>
			Source: Electronics Discovery Guide - EKI (Mr. Circuit I)	
			Unit: EXP 4	Page: 16 AND 17
p	( )	10 Min	Computer Aided Inst.	<b>How a Speaker Works</b>
			Source:	Electronics Discovery CAI Software - EKI
			Unit: LPA05	Page: Min. Score: 80%
q	( )	10 Min	Exercise	<b>How a Speaker Works</b>
			Source:	Electronics Discovery Guide - EKI (Mr. Circuit I)
			Unit: EXP 5	Page: 18 AND 19

<u>Task</u>	<u>Task/Skill</u>		Started	Completed
<b>2</b>	<b>Active Devices</b>		<u>mm/dd/yy</u>	<u>mm/dd/yy</u>
			( / / )	( / / )

The student will demonstrate their knowledge of active devices by constructing circuits comprised of diode, NPN transistor, and PNP transistor devices. They will demonstrate their skill completing computer aided instruction lessons and obtaining a perfect score on associated quizzes.

<u>Sub</u>	<u>Unit</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>
a	( )	10 Min	Computer Aided Inst.	<b>How a Diode Works</b>
			Source:	Electronics Discovery CAI Software - EKI
			Unit: LPA06	Page: Min. Score: 80%

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b	( )	<b>10 Min Exercise</b> Source: Unit: EXP 6	<b>How a Diode Works</b> Electronics Discovery Guide - EKI (Mr. Circuit I) Page: 20 AND 21
c	( )	<b>10 Min Computer Aided Inst.</b> Source: Unit: LPA08	<b>How an NPN Transistor Works</b> Electronics Discovery CAI Software - EKI Page: <b>Min. Score:</b> 80%
d	( )	<b>10 Min Exercise</b> Source: Unit: EXP 8	<b>How an NPN Transistor Works</b> Electronics Discovery Guide - EKI (Mr. Circuit I) Page: 24 AND 25
e	( )	<b>10 Min Computer Aided Inst.</b> Source: Unit: LPA09	<b>How a PNP Transistor Works</b> Electronics Discovery CAI Software - EKI Page: <b>Min. Score:</b> 80%
f	( )	<b>10 Min Exercise</b> Source: Unit: EXP 9	<b>How a PNP Transistor Works</b> Electronics Discovery Guide - EKI (Mr. Circuit I) Page: 26 AND 27

Task    Task/Skill  
**3    Transistor Circuits**

Started    Completed  
mm/dd/yy    mm/dd/yy  
( / / )    ( / / )

The student will demonstrate their knowledge of transistor circuits by constructing an oscillator, automatic light, DC to DC power supply, electronic metronome, and electronic noise generator. They will demonstrate their skill by completing computer aided instruction lessons and obtaining a perfect score on the associated quizzes. The enrichment activities are optional.

<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>
a	( )	<b>10 Min</b>	<b>Computer Aided Inst.</b> Source: Unit: LPA10	<b>Transistor Oscillator</b> Electronics Discovery CAI Software - EKI Page: <b>Min. Score:</b> 80%
b	( )	<b>10 Min</b>	<b>Exercise</b> Source: Unit: EXP 10	<b>Transistor Oscillator</b> Electronics Discovery Guide - EKI (Mr. Circuit I) Page: 28 AND 29
c	( )	<b>10 Min</b>	<b>Computer Aided Inst.</b> Source: Unit: PPA13	<b>Automatic Night Light</b> Electronics Discovery CAI Software - EKI Page: <b>Min. Score:</b> 80%
d	( )	<b>10 Min</b>	<b>Exercise</b> Source: Unit: 13	<b>Automatic Night Light</b> Electronics Discovery Guide - EKI (Mr. Circuit I) Page: 34 AND 35
e	( )	<b>10 Min</b>	<b>Computer Aided Inst.</b> Source: Unit: PPA14	<b>DC to DC Power Supply</b> Electronics Discovery CAI Software - EKI Page: <b>Min. Score:</b> 80%
f	( )	<b>10 Min</b>	<b>Exercise</b> Source:	<b>DC to DC Power Supply</b> Electronics Discovery Guide - EKI (Mr. Circuit I)

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Unit: EXP 14 Page: 36 TO 37

- g ( ) 10 Min Computer Aided Inst. **Electronic Metronome**  
 Source: Electronics Discovery CAI Software - EKI  
 Unit: PPA15 Page: Min. Score: 80%
- h ( ) 10 Min Exercise **Electronic Metronome**  
 Source: Electronics Discovery Guide - EKI (Mr. Circuit I)  
 Unit: 15 Page: 38 AND 39
- i ( ) 10 Min Computer Aided Inst. **Electronic Motorcycle**  
 Source: Electronics Discovery CAI Software - EKI  
 Unit: PPA16 Page: Min. Score: 80%
- j ( ) 10 Min Exercise **Electronic Motorcycle**  
 Source: Electronics Discovery Guide - EKI (Mr. Circuit I)  
 Unit: EXP 16 Page: 40 AND 41

<u>Task</u>	<u>Task/Skill</u>	<u>Started</u> <u>mm/dd/yy</u>	<u>Completed</u> <u>mm/dd/yy</u>
<b>4</b>	<b>Thyristor (Silicon Controlled Rectifier)</b>	( / / )	( / / )

The student will demonstrate their knowledge of thyristor and thyristor circuits. They will construct circuits using a Silicon Controlled Rectifier (SCR). The student will demonstrate their skill by completing computer aided instruction lessons and obtaining a perfect score on associated quizzes. The enrichment activities are optional.

- | <u>Sub</u> | <u>Unit</u> | <u>Time</u> | <u>Type of Task</u>                            | <u>Task Description</u>   |
|------------|-------------|-------------|--|---|
| a          | ( )         | 15 Min      | Computer Aided Inst.<br>Source:<br>Unit: LPA07 | <b>How an SCR Works</b><br>Electronics Discovery CAI Software - EKI<br>Page: Min. Score: 80%    |
| b          | ( )         | 15 Min      | Exercise<br>Source:<br>Unit: 7                 | <b>How an SCR Works</b><br>Electronics Discovery Guide - EKI (Mr. Circuit I)<br>Page: 22 AND 23 |
| c          | ( )         | 15 Min      | Computer Aided Inst.<br>Source:<br>Unit: PPA12 | <b>Burglar Alarm</b><br>Electronics Discovery CAI Software - EKI<br>Page: Min. Score: 80%       |
| d          | ( )         | 15 Min      | Exercise<br>Source:<br>Unit: EXP 12            | <b>Burglar Alarm</b><br>Electronics Discovery Guide - EKI (Mr. Circuit I)<br>Page: 32 AND 33    |

<u>Task</u>	<u>Task/Skill</u>	<u>Started</u> <u>mm/dd/yy</u>	<u>Completed</u> <u>mm/dd/yy</u>
<b>5</b>	<b>Integrated Circuits</b>	( / / )	( / / )

The student will demonstrate their knowledge of integrated circuits by constructing basic IC circuitry using the 555 Timer IC. The student will demonstrate their skill by completing computer aided instruction lessons and obtaining a perfect score on the associated quizzes. The enrichment activities are optional.

<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>
a	( )	10 Min	<b>Computer Aided Inst.</b> Source: Unit: LPA11	<b>Blinking LED</b> Electronics Discovery CAI Software - EKI Page: <b>Min. Score:</b> 80%
b	( )	10 Min	<b>Exercise</b> Source: Unit: EXP 11	<b>Blinking LED</b> Electronics Discovery Guide - EKI (Mr. Circuit I) Page: 30 AND 31
c	( )	10 Min	<b>Computer Aided Inst.</b> Source: Unit: PPA17	<b>Railroad Lights</b> Electronics Discovery CAI Software - EKI Page: <b>Min. Score:</b> 80%
d	( )	10 Min	<b>Exercise</b> Source: Unit: EXP 17	<b>Railroad Lights</b> Electronics Discovery Guide - EKI (Mr. Circuit I) Page: 42 AND 43
e	( )	10 Min	<b>Computer Aided Inst.</b> Source: Unit: PPA18	<b>Variable Speed Lights</b> Electronics Discovery CAI Software - EKI Page: <b>Min. Score:</b> 80%
f	( )	10 Min	<b>Exercise</b> Source: Unit: EXP 18	<b>Variable Speed Lights</b> Electronics Discovery Guide - EKI (Mr. Circuit I) Page: 44 AND 45
g	( )	10 Min	<b>Computer Aided Inst.</b> Source: Unit: PPA23	<b>Variable Timer</b> Electronics Discovery CAI Software - EKI Page: <b>Min. Score:</b> 80%
h	( )	10 Min	<b>Exercise</b> Source: Unit: EXP 23	<b>Variable Timer</b> Electronics Discovery Guide - EKI (Mr. Circuit I) Page: 54 AND 55

Task    Task/Skill

**6 IC Circuits Using the 555 Timer IC**

Started	Completed
<u>mm/dd/yy</u>	<u>mm/dd/yy</u>
( / / )	( / / )

The student will demonstrate the many uses of the 555 Timer IC by constructing oscillator and multivibrator circuits on the solderless circuit board. The student will demonstrate their skill by completing computer aided instruction lessons and obtaining a perfect score on the associated quizzes. The enrichment activities are optional.

<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>
a	( )	10 Min	<b>Computer Aided Inst.</b> Source: Unit: PPA19	<b>Continuity Tester</b> Electronics Discovery CAI Software - EKI Page: <b>Min. Score:</b> 80%
b	( )	10 Min	<b>Exercise</b> Source: Unit: EXP 19	<b>Continuity Tester</b> Electronics Discovery Guide - EKI (Mr. Circuit I) Page: 46 AND 47
c	( )	10 Min	<b>Computer Aided Inst.</b> Source:	<b>Audio Generator</b> Electronics Discovery CAI Software - EKI

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		<b>Unit:</b> PPA20	<b>Page:</b>	<b>Min. Score:</b> 80%
<b>d</b>	( )	<b>10 Min Exercise</b> <b>Source:</b> <b>Unit:</b> EXP 20	<b>Page:</b>	<b>Audio Generator</b> Electronics Discovery Guide - EKI (Mr. Circuit I) 48 AND 49
<b>e</b>	( )	<b>10 Min Computer Aided Inst.</b> <b>Source:</b> <b>Unit:</b> PPA21	<b>Page:</b>	<b>Electronic Police Siren</b> Electronics Discovery CAI Software - EKI <b>Min. Score:</b> 80%
<b>f</b>	( )	<b>10 Min Exercise</b> <b>Source:</b> <b>Unit:</b> EXP 21	<b>Page:</b>	<b>Electronic Police Siren</b> Electronics Discovery Guide - EKI (Mr. Circuit I) 50 AND 51
<b>g</b>	( )	<b>10 Min Computer Aided Inst.</b> <b>Source:</b> <b>Unit:</b> PPA28	<b>Page:</b>	<b>Electronic Canary</b> Electronics Discovery CAI Software - EKI <b>Min. Score:</b> 80%
<b>h</b>	( )	<b>10 Min Exercise</b> <b>Source:</b> <b>Unit:</b> EXP 28	<b>Page:</b>	<b>Electronic Canary</b> Electronics Discovery Guide - EKI (Mr. Circuit I) 64 AND 65
<b>i</b>	( )	<b>10 Min Computer Aided Inst.</b> <b>Source:</b> <b>Unit:</b> PPA29	<b>Page:</b>	<b>Space Machine Gun</b> Electronics Discovery CAI Software - EKI <b>Min. Score:</b> 80%
<b>j</b>	( )	<b>10 Min Exercise</b> <b>Source:</b> <b>Unit:</b> EXP 29	<b>Page:</b>	<b>Space Machine Gun</b> Electronics Discovery Guide - EKI (Mr. Circuit I) 66 AND 67



# H.H. Arnold High School Professional Technical Studies ASSIGNMENT CHECKLIST

Course #      Course Title  
**VEE301**      **Digital Electronics I**

Area      Competency Category  
**F**      **ELECTRONIC PROJECT DESIGN AND CONSTRUCTION**

<u>Task</u>	<u>Task/Skill</u>	<u>Started</u>	<u>Completed</u>
		mm/dd/yy	mm/dd/yy
<b>1</b>	<b>Electronic Project Design/Construction (Theory)</b>	( / / )	( / / )

The student will be able to answer questions regarding the construction of a simple electronic project. They should be aware of the different manufacturing tools and processes necessary to produce an electronic project. They will select a circuit construction project and develop an itemized bill of materials to be purchased from a local source. The bill of materials will include the Project's Title, the Vendor's Name and Address, Part Description, Part Number, Item's Price, Quantity, Cost, and Total Cost for producing one, five, and ten copies of the project.

<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>
a	(    )		<b>Reading Assignment</b> <b>Source:</b> <b>Unit:</b> 6	Project Layout and Circuit Board Const. How To Build Electronic Projects <b>Page:</b> 72-91 <b>Min. Score:</b> 85%
b	(    )		<b>Reading Assignment</b> <b>Source:</b> <b>Unit:</b> 5	Photo Layout Procedures How To Make Printed Circuit Boards <b>Page:</b> 49-64 <b>Min. Score:</b> 85%
c	(    )		<b>Written Report</b>	Bill of Materials
d	(    )		<b>Notebook</b>	Notebook Review
e	(    )		<b>Computer Test</b>	Electronic Project Design/Construction

<u>Task</u>	<u>Task/Skill</u>	<u>Started</u>	<u>Completed</u>
		mm/dd/yy	mm/dd/yy
<b>2</b>	<b>Breadboard Prototyping</b>	( / / )	( / / )

The student will breadboard their electronic project using any breadboarding technique. The project must work in the breadboarded state before the project can be constructed using a printed circuit board.

<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>
a	(    )		<b>Computer Aided Inst.</b> <b>Source:</b> <b>Unit:</b> 3	Using the Solderless Circuit Board Electronics Discovery CAI Software - EKI <b>Page:</b> <b>Min. Score:</b> 85%

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**b** ( ) **Lab Experiment** Using the Solderless Circuit Board  
**Source:** Electronics Discovery Guide - EKI (Mr. Circuit I)  
**Unit:** LESSON 3 **Page:** 8 AND 9 **Min. Score:** 85%

**c** ( ) **Project** Breadboarded Electronic Project

<u>Task</u>	<u>Task/Skill</u>	<u>Started</u>	<u>Completed</u>
<b>3</b>	<b>Wire-Wrap Prototyping</b>	mm/dd/yy	mm/dd/yy
		( / / )	( / / )

The student will wire-wrap their electronic project. The project must work in the wire-wrapped state before it can be constructed on a printed circuit board.

<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>
<b>a</b>	( )		<b>Project</b>	Wire-Wrapped Electronic Project

<u>Task</u>	<u>Task/Skill</u>	<u>Started</u>	<u>Completed</u>
<b>4</b>	<b>PCB Artwork Preparation</b>	mm/dd/yy	mm/dd/yy
		( / / )	( / / )

The student will produce a photopositive printed circuit board artwork for their electronic project using the photographic layout process. This process includes the use of self adhesive trace tape and pads to make the pattern. The PCB artwork design must contain no defects.

<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>
<b>a</b>	( )		<b>Project</b>	Photopositive PCB Artwork

<u>Task</u>	<u>Task/Skill</u>	<u>Started</u>	<u>Completed</u>
<b>5</b>	<b>Electronic Computer Automated Design (CAD)</b>	mm/dd/yy	mm/dd/yy
		( / / )	( / / )

The student will draft the schematic and PCB board pattern using either Wintek's HIWire or SmartWork software. The student will then produce a photopositive of the artwork for manufacturing their project's printed circuit board.

<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>
<b>a</b>	( )		<b>Project</b>	CAD Electronic Project - Schematic

<b>b</b>	( )		<b>Project</b>	CAD Electronic Project - PCB Artwork
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<u>Task</u>	<u>Task/Skill</u>	<u>Started</u>	<u>Completed</u>
<b>6</b>	<b>Printed Circuit Board (PCB) Manufacturing</b>	mm/dd/yy	mm/dd/yy
		( / / )	( / / )

The student will expose, develop, etch, and final process their project's printed circuit board.

<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>
<b>a</b>	( )		<b>Project</b>	Expose the Printed Circuit Board

<b>b</b>	( )		<b>Project</b>	Develop the Printed Circuit Board
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<b>c</b>	( )		<b>Project</b>	Etch the Printed Circuit Board
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d ( ) Project Post Process the Printed Circuit Board

<u>Task</u>	<u>Task/Skill</u>	<u>Started</u>	<u>Completed</u>
<b>7</b>	<b>Component Installation</b>	<u>mm/dd/yy</u>	<u>mm/dd/yy</u>
		( / / )	( / / )

The student will properly install and solder all the components of their electronic project.

<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>
a	( )		Project	Component Installation and Soldering

<u>Task</u>	<u>Task/Skill</u>	<u>Started</u>	<u>Completed</u>
<b>8</b>	<b>Chassis Design and Construction</b>	<u>mm/dd/yy</u>	<u>mm/dd/yy</u>
		( / / )	( / / )

The student will design and construct a chassis to mount their electronic project in. The case must completely enclose the electronic project.

<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>
a	( )		Project	Electronic Project Chassis Design
b	( )		Project	Electronic Project Chassis Construction
c	( )		Project	Electronic Project Installation

<u>Task</u>	<u>Task/Skill</u>	<u>Started</u>	<u>Completed</u>
<b>9</b>	<b>Technical Display</b>	<u>mm/dd/yy</u>	<u>mm/dd/yy</u>
		( / / )	( / / )

The student will develop a technical display for the project reflecting the process in which it was made and how it operates. The display will include the schematic drawing, PCB artwork, itemized parts list, theory of operation and application, and operating instructions. All components of the display must be the student's work and should be composed using computer technology. Finally, the student will present an oral report to the class about the project.

<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>
a	( )		Project	Display - Schematic Diagram
b	( )		Project	Display - PCB Artwork
c	( )		Project	Display - Itemized Parts List
d	( )		Project	Display - Theory of Operation
e	( )		Project	Display - Application to Technology
f	( )		Project	Display - Operating Instructions
g	( )		Oral Report	Electronic Project Design/Construction



# H.H. Arnold High School Professional Technical Studies ASSIGNMENT CHECKLIST

Course #      Course Title  
**VEE301**      **Digital Electronics I**

Area      Competency Category  
**G**      **DIGITAL ELECTRONICS I SEMESTER EXAM**

<u>Task</u>	<u>Task/Skill</u>	<u>Started</u>	<u>Completed</u>
1	Written Exam	mm/dd/yy ( / / )	mm/dd/yy ( / / )

The student will complete a computer proctored exam covering applied electricity and electronics theory presented thus far in the course. They will continue to attempt the exam until obtaining the minimum acceptable score.

<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>	<u>Min. Score:</u>
a	(      )		<b>Computer Test</b>	Semester Exam Digital Electronics I Semester Exam	85%
			<b>Source:</b>	Digital Electronics I Semester Exam	
			<b>Unit:</b>	SEMESTER	

<u>Task</u>	<u>Task/Skill</u>	<u>Started</u>	<u>Completed</u>
2	Practical Exam	mm/dd/yy ( / / )	mm/dd/yy ( / / )

The student will complete a hands-on examination covering Digital Electronics I practice and application. They will answer a series of questions regarding the skills learned in experiments conducted thus far in the course. These exercises will test measurement, calculation, and component identification skills. Students will have only one opportunity to complete this exam.

<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>	<u>Min. Score:</u>
a	(      )		<b>Computer Test</b>	Practical Exam Digital Electronics I Semester Exam	85%
			<b>Source:</b>	Digital Electronics I Semester Exam	
			<b>Unit:</b>	PRACTICAL	

<u>Task</u>	<u>Task/Skill</u>	<u>Started</u>	<u>Completed</u>
3	Electronic Theory Challenge	mm/dd/yy ( / / )	mm/dd/yy ( / / )

The student will complete a series of computer proctored challenges covering a variety electronic skills. The student will continue to attempt these challenges until they receive the minimum acceptable score.

<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>	<u>Min. Score:</u>
a	(      )		<b>Computer Test</b>	Resistor Color Code EKI Tutorial Software - CHALLENGES	100%
			<b>Source:</b>	EKI Tutorial Software - CHALLENGES	
			<b>Unit:</b>	COLOR CODE	

b	(      )		<b>Computer Test</b>	Ohm's Law EKI Tutorial Software - CHALLENGES	
			<b>Source:</b>	EKI Tutorial Software - CHALLENGES	

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Lastname, First

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Unit: OHM'S LAW

Page:

Min. Score: 100%

c ( )

Computer Test

Source:

Unit: MULTIMETER

Multimeter (Analog)

EKI Tutorial Software - CHALLENGES

Page:

Min. Score: 85%

<u>Task</u>	<u>Task/Skill</u>	<u>Started</u>	<u>Completed</u>
<b>4</b>	<b>Soldering Examination</b>	<u>mm/dd/yy</u>	<u>mm/dd/yy</u>
		( / / )	( / / )

<u>Sub</u>	<u>Init</u>	<u>Time</u>	<u>Type of Task</u>	<u>Task Description</u>
a	( )		Performance Test	Component Installation
b	( )		Performance Test	Soldering Technique
c	( )		Performance Test	QA and Circuit Operation

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 Lastname, First

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 Student Number

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