

HERBERT MORRISON TECHNICAL HIGH  
INDUSTRIAL ARTS DEPARTMENT

Course Outline

**Grade:** 10

**Academic year:** 2019 -2020

**Course:** Electrical & Electronics Technology

**Teacher:** K. Coke

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Below is a list of the various units to be taught for the following months during school year 2019 - 2020.

MONTH	SECTIONS	UNITS	LESSON PLAN TOPICS	ASSESSMENTS	MONTHLY EVALUATION
<b>Term #1</b>					
September	<b>SECTION 1 - ELECTRICAL PRINCIPLES AND MEASUREMENTS</b>	<ul style="list-style-type: none"> <li><b>Electrical Symbols &amp; Diagrams</b></li> </ul>	<ul style="list-style-type: none"> <li>✓ Definition of terms.</li> </ul>	<ul style="list-style-type: none"> <li><b>H.W #1-</b> Electrical Symbols</li> <li><b>Assign #1-</b> Types of electric lamps</li> <li><b>Quiz #1</b></li> <li><b>H.W #2</b> Measuring devices</li> </ul>	
			<ul style="list-style-type: none"> <li>✓ <i>Graphical standard symbols &amp; diagrams</i></li> </ul>		
			<ul style="list-style-type: none"> <li>✓ <i>Uses, characteristics and sketches of each type</i></li> </ul>		
		<ul style="list-style-type: none"> <li><b>Electric Lamps</b></li> </ul>	<ul style="list-style-type: none"> <li>✓ Types &amp; Uses</li> </ul>		
			<ul style="list-style-type: none"> <li>✓ Parts &amp; function</li> </ul>		
			<ul style="list-style-type: none"> <li>✓ Characteristics</li> </ul>		
			<ul style="list-style-type: none"> <li>✓ Testing procedures</li> </ul>		
October		<ul style="list-style-type: none"> <li><b>Types of electric cables</b></li> </ul>	<ul style="list-style-type: none"> <li>✓ Types &amp; Uses</li> </ul>	<ul style="list-style-type: none"> <li>✓ <b>Assign #2-</b> Types of cables</li> <li>✓ <b>Quiz #2</b></li> <li>✓ <b>Practical- Cable splicing</b></li> </ul>	
	<ul style="list-style-type: none"> <li>✓ Parts &amp; function</li> </ul>				
	<ul style="list-style-type: none"> <li>✓ Characteristics</li> </ul>				
	<ul style="list-style-type: none"> <li>✓ Application</li> </ul>				

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November		<ul style="list-style-type: none"> <li>• <b>Resistance</b></li> </ul>	<ul style="list-style-type: none"> <li>✓ Factor affecting resistance</li> </ul>	<ul style="list-style-type: none"> <li>✓ <b>Worksheet #1-</b> Resistivity</li> <li>✓ <b>Quiz #3</b></li> </ul>	
			<ul style="list-style-type: none"> <li>✓ Temperature coefficient</li> </ul>	<ul style="list-style-type: none"> <li>✓ <b>Worksheet #2 –</b> Temperature coefficient</li> </ul>	
			<ul style="list-style-type: none"> <li>✓ Resistors</li> <li>✓ Calculate resistor value</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Assign #2-</b> Types of resistors</li> </ul>	
December			<ul style="list-style-type: none"> <li>✓ End of term</li> </ul>	<b>Quiz #4</b>	
<b>Term 2</b>					
January	<ul style="list-style-type: none"> <li>✓ <b>SECTION 1 - ELECTRICAL PRINCIPLES AND MEASUREMENTS</b></li> </ul>	<ul style="list-style-type: none"> <li>✓ Batteries</li> </ul>	<ul style="list-style-type: none"> <li>✓ Types &amp; Uses</li> <li>✓ Parts &amp; function</li> <li>✓ Characteristics</li> <li>✓ Operating principles</li>   <li>✓ Voltage &amp; Current</li> <li>✓ <i>Testing procedures</i></li> <li>✓ Maintenance &amp; Safety</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Quiz #5</b></li> <li>• <b>Assign. #2 --</b>Types of batteries</li> <li>• <b>Quiz # 6</b></li> </ul>	

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February		<b>Circuit configuration</b> ✓ Series circuit	<ul style="list-style-type: none"> <li>✓ Series circuits</li> <li>✓ Construction</li> <li>• Operating principles;</li> <li>• Characteristics,</li>   <li>• Ohms Law</li> <li>• Power</li> <li>• Energy;</li>   <li>• Applications;</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Practical #</b> connect lamps series circuits</li> <li>• <b>Measure current, voltage and resistance</b></li> <li>• Reading KWH meter</li> <li>• <b>Quiz #7</b></li> <li>• Use Multisim to construct circuits.</li> <li>• Measure various electrical quantities</li> </ul>	
March		Parallel circuit	<ul style="list-style-type: none"> <li>• <i>Definition.</i></li> <li>• Construction</li> <li>• Operation</li> <li>• Characteristics</li> <li>• Application</li> </ul>	<b>Class Activity #1</b> – Connect lamps in parallel <ul style="list-style-type: none"> <li>• Measure current, voltage and resistance</li> </ul>	
		Series – Parallel	<ul style="list-style-type: none"> <li>• <i>Definition.</i></li> <li>• Construction</li> <li>• Operation</li> <li>• Characteristics</li> <li>• Application</li> </ul>	<b>Class Activity #</b> – Voltage divider circuits. <ul style="list-style-type: none"> <li>• Use Multisim to construct circuits.</li> <li>• Measure various electrical quantities</li> </ul> <b>Lab #1</b> – Voltage Divider	
April	<b>SECTION 4: ELECTRICAL INSTALLATION</b>	<b>Codes and regulations associated with wiring systems</b>	<ul style="list-style-type: none"> <li>• Definition of terms</li> <li>• Installation symbols</li> <li>• Codes &amp; Standards</li> </ul>	<b>Lab #2</b> – Electrical Installation <b>H.W #</b> Codes	
			<ul style="list-style-type: none"> <li>• Light &amp; power circuits</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Class Activity-</b> Design lighting circuits.</li> </ul>	

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			<ul style="list-style-type: none"> <li>• Testing procedures</li> <li>• Protective devices</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Practical- Wire model House to include buzzer and alarms systems</b></li> </ul>	
			<ul style="list-style-type: none"> <li>• Material &amp; Tools list</li> <li>• Load calculations</li> </ul>	<b>Quiz #</b>	
<b>Term 3</b>					
May	<b>SECTION 2: ELECTRICAL AND ELECTRONIC DRAFTING</b>	Types of electrical diagrams	<ul style="list-style-type: none"> <li>• Block diagrams</li> <li>• Electrical floor plan</li> <li>• Wiring diagram</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Class Activity-</b> Design electrical floor plan</li> <li>• <b>Class Activity-</b> convert schematic to wiring diagrams &amp; vise-versa</li> <li>• <b>Lab #3 – Electrical drafting</b></li> </ul>	
June			<ul style="list-style-type: none"> <li>• One line diagrams</li> </ul>		
			End Of Year Exam		

**ASSESSMENT PROCEDURES**

**Assignments & Test -20%**

**Practical -10%**

**Presentations -10%**

**Final Examination - 60%**

**Special Notes**

- Students **MUST** be punctual at all times.
- **Assignments** should be handed in on the **specified due date**. Failing to comply with the specified date will result in a fifty **percent (50%)** reduction in the marks for each outstanding day. Assignments that are more than **2 days** late will receive **zero (0)**.

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- At the end of this module learners will be required to complete a written and/or oral and practical internal assessment to demonstrate competence.
- Student's involvement in discussions during each session is an important aspect of the course. All students should expect to fully participate in class discussion and activities during all sessions.

**READING ASSIGNMENT/QUIZZES/TESTS**

1. There are a number of reference texts and support materials used for this class. Each student is expected to read the assigned reading in full, before the class, as stated on the outline.
2. Quizzes may be announced or unannounced. Quizzes cover the assigned reading material.
3. There will be periodic tests over sections of material covered in class lectures, reading and assignments.

**CHEATING, DISHONESTY AND PLAGIARISM**

Any form of cheating is sufficient for an automatic zero. The facilitator is willing and available to help any student who seeks assistance. Cheating, dishonesty, plagiarism, copying portions of another student's assignment etc. are totally unacceptable. Assignments are given to aid in the development of competency and acquisition of knowledge. Spend extra time to do your assignments with as little help from others as possible.

**Resources:**

Boylestad, R.	Essentials of Circuit Analysis, Pearson/Prentice Hall, 2004.
Brimicombe M.	Electronics, Nelson Thorne Ltd, 2002.
Christopher, S.	Electrical Installation for NVQ, Nelson Thornes Limited, 2004.
Green, D.	Electrical Principles (3rd Edition), Addison Wesley Longman, 1994.

**Note: Dates are subject to change.**

Signature: \_\_\_\_\_