HERBERT MORRISON TECHNICAL HIGH
INDUSTRIAL ARTS DEPARTMENT

Course Outline

Grade: 11

Academic year: 2020 -2021

Course: Electrical & Electronics Technology

Teacher: K. Coke & R. Branford

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Below is a list of the various units to be taught for the following months during school year 2020- 2021.

MONTH	SECTIONS	UNITS	LESSON PLAN TOPICS	ASSESSMENTS
		Term 1		
September October	***SECTION 3:*** **ELECTRICAL POWER AND MACHINES**	***Types of AC and DC electrical machines*** • Generators • Motors	✓ Types & Uses ✓ *Parts and their functions.* ✓ *Construction features and operating principles.* ✓ *Generator and motor related calculations* ✓ RL, RC and RCL circuits ✓ *phasor and vector diagrams* ✓ Power factor ✓ Power (Active, True & apparent) ✓ Motor control circuits	• **Lab# 2**- Electrical Installation • **Lab# 3** - Electrical Drafting • **Assignment #1**- Types of 1Ph motors • **Quiz** #1 • **Quiz** #2
November		• ***Types of transformers***	✓ Types & Uses ✓ Parts & function ✓ Characteristics. ✓ Construction features and components. ✓ Operating principles.	✓ **Assign #2**- Types of transformers • **Lab #4** – Motor control

MONTH	SECTIONS	UNITS	LESSON PLAN TOPICS	ASSESSMENTS
			✓ Calculating transformer efficiency & Losses ✓ *Testing procedures*	
December		SBA Practical	End of term exam	• Multiple Choice paper 1
Term 2				
January	***SECTION 5:*** **FUNDAMENTALS OF ELECTRONICS** • ***Operating principles of basic semi-conductor devices and materials***	• Diodes	✓ Types & Uses ✓ Parts & function ✓ Characteristics. ✓ Operating principles. ✓ Diode Calculation ✓ Bridge and Bi-phase circuits ✓ Full-wave rectification (centre tap) ✓ *Testing procedures*	• **Lab #5** – Power supply • **Assign. #2** --Types of diodes • **Quiz #3** • **Practical #** - Using Oscilloscope
February		✓ Capacitors, Transistors	✓ Types & Uses ✓ Parts & function ✓ Characteristics; ✓ Operating principles; ✓ Applications; ✓ *Testing procedures*	• **Lab# 6** - Amplifiers • **Quiz #4**
March		Logic gates	✓ Types & Uses ✓ *Definition of a logic gate.* ✓ *Logic gates Boolean functions.* ✓ *Symbol for each logic function*	**Lab #7** – Logic diagrams

MONTH	SECTIONS	UNITS	LESSON PLAN TOPICS	ASSESSMENTS
			(IEEE standard	
		Truth table	✓ *Truth tables – Binary system* ✓ *Designing circuits using truth tables and Boolean notation*	
		Multi-vibrators	✓ *Evaluating various types of multi-vibrators*	
April				**Mock exams**

ASSESSMENT PROCEDURES

Assignments & Test -20%

Practical -10%

Presentations -10%

Final Examination - 60%

Special Notes

- Students MUST be punctual at all times.
- 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.
- 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.

READING ASSIGNMENT/QUIZZES/TESTS

1. Quizzes may be announced or unannounced. Quizzes cover the assigned reading material.
2. There will be periodic tests over sections of material covered in class lectures, reading and assignments.
3. **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).**
4. At the end of this module learners will be required to complete a written and/or oral and practical internal assessment to demonstrate competence.

REQUIREMENTS FOR PRACTICAL CLASSES

1. **ALL** students are expected obtain their own **Personal Protective Equipment (PPE'S)** prior to practical classes.
2. The sharing and borrowing of PPE'S and tools will **NOT** be permitted.
3. Students will **NOT** be allowed to leave their PPE'S and tools in the labs.
4. **All** students are expected to clean their work area and tools after practical lesson.
5. **Face shields are mandatory for practical classes.**
6. Students will work in groups of Three (3) but individual reports MUST be submitted.

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 unaccepted. 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: _____