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BTE 2132: Electrical Fundamentals and Circuit Analysis II Laboratory

Course Information

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Course Information

1) Aims

- To construct Alternating Current (AC) circuits
- To validate related theorems
- To assemble electric circuit from the given schematics circuits
- To work independently and in a team
- To write technical report based on the given guideline

2) Expected Outcomes

- Students will know the Alternating Current (AC) elements
- Students will be able to construct AC circuit according to the given sc
- Student will be able to work independently or in team

3) References

- A. Robbins and W. Miller, Lab Manual to Accompany Circuit Analysis-Theory and Practice, 5th ed., DELMAR CENGAGE Learning, Fifth Edition, 2013.
- A. Robbins and W. Miller, Circuit Analysis-Theory and Practice, 5th ed., DELMAR CENGAGE Learning, Fifth Edition, 2013.
- William H. Hayt, Steven M. Durbin and Jack E. Kemmerly, Engineering Circuit Analysis, Tata McGraw-Hill Education, 8th Edition, 2013.

Course Synopsis

This course introduce the concepts of AC circuits. The contents covers the applications of Norton and Thevenin theorem, Superposition, Nodal and Mesh analysis, Source Transformation theorems, Filters, Bridges, Resonant circuit and Balanced 3-phase circuits. During this experimental laboratory exercise, student will be able to compare the theoretical theorem with the measurement result and prove the validity of the theorem.

Course Outcome

- Student should be able to construct Alternating Current (AC) circuits and validate related theorems to the course
- Student should be able to assemble electric circuit from the given schematics circuits and the outcome result from the experimental work then put into report
- Student should be able to work independently and in a team.

Course Content

Chapter 1: Power in AC Circuits

Chapter 2: Thevenin's and Norton's Theorems (AC)

Chapter 3: Series Resonance

Chapter 4: Parallel Resonance

Chapter 5: RC and RL Low-Pass Filter Circuits

Chapter 6: RC and RL High-Pass Filter Circuits

Chapter 7: Band-Pass Filter

Chapter 8: The Iron-Core Transformer

Assessment Breakdown

Assessment	Percentage
Quiz	10%
Test	20%
Final Exam	40%
Lab Report	10%
Assignment	20%
TOTAL	**100%**

References

Recommended References:

i. A. Robbins and W. Miller, Lab Manual to Accompany Circuit Analysis-Theory and Practice, 5th ed., DELMAR CENGAGE Learning, Fifth Edition, 2013.

ii. A. Robbins and W. Miller, Circuit Analysis-Theory and Practice, 5th ed., DELMAR CENGAGE Learning, Fifth Edition, 2013.

iii. William H. Hayt, Steven M. Durbin and Jack E. Kemmerly, Engineering Circuit Analysis, Tata McGraw-Hill Education, 8th Edition, 2013.

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