



**ELECTRICAL FUNDAMENTALS**  
**COURSE NAME**

**ELR 100**  
**CODE NO.**

**TOTAL CREDIT HOURS: 48**  
**PREREQUISITE(S): NONE**

**I. PHILOSOPHY/GOALS:** This course provides a thorough, comprehensive, and practical coverage of basic electrical concepts and circuits with special emphasis on troubleshooting and applications.

**II. STUDENT PERFORMANCE OBJECTIVES (OUTCOMES):**

**Upon successful completion of this course the student will:**

- 1) Understand voltage, current, and resistance in DC circuits and the techniques used for proper circuit measurement.**
- 2) Understand Ohm's law, and the concepts of energy and power in DC electric circuits.**
- 3) Identify series, parallel, and series-parallel DC circuits.**
- 4) Analyze series, parallel, and series-parallel DC circuits.**

**III. TOPICS TO BE COVERED:**

- 1) Voltage, Current, and Resistance.**
- 2) Ohm's law, Energy and Power.**
- 3) Series Circuits.**
- 4) Parallel Circuits.**
- 5) Series-Parallel Circuits.**

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**IV. LEARNING ACTIVITIES/REQUIRED RESOURCES**  
**Topic/Unit - 1) VOLTAGE, CURRENT, RESISTANCE**

**Learning Activities:**

**Listen to presentation on voltage, current and resistance and discuss their characteristics.**

**Participate in questions/answer time for the topic**

**Complete the assigned problems relating to this topic**

**Resources:**

**Textbook, Handouts, Overhead and Chalkboard**

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**Topic/Unit:-2) OHM'S LAW, ENERGY, AND POWER**

**Learning Activities:**

**Listen to presentation on Ohm's Law, Energy, and Power**

**Participate in discussion on the topic**

**Complete the assigned problems**

**Resources:**

**Textbook, Handouts, Overhead and Chalkboard**

**IV. LEARNING ACTIVITIES/REQUIRED RESOURCES**

**Topic/Unit: - 3) Series Circuits**

**Learning Activities:**

**Listen to presentation on Series Circuits**

**Participate in discussion on the topic**

**Apply Ohm's Law in Series Circuits**

**Complete the assigned problems**

**Resources:**

**Textbook, Handouts, Overhead and Chalkboard**

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**Topic/Unit:-4) Parallel Circuits**

**Learning Activities:**

**Listen to presentation on Parallel Circuits**

**Participate in discussion on the topic**

**Apply Ohm's Law in Parallel Circuits**

**Complete the assigned problems**

**Resources:**

**Textbook, Handouts, Overhead and Chalkboard**

**IV. LEARNING ACTIVITIES/REQUIRED RESOURCES**

**Topic/Unit: - 5)**

**Learning Activities:**

**Listen to presentation Series-Parallel Circuits**

**Participate in discussion on the topic**

**Identify Series-Parallel Circuits**

**Analyze Series-Parallel Circuits**

**Complete the assigned problems**

**Resources:**

**Textbook, Handouts, Overhead and Chalkboard**

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**Topic/Unit:**

**Learning Activities:**

**Resources:**

**Textbook, Handouts, Overhead and Chalkboard**

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- V. **EVALUATION METHODS: (INCLUDES ASSIGNMENTS, QUIZZES, WRITTEN TESTS, ATTENDANCE REQUIREMENTS, ETC.) YOUR INSTRUCTOR RESERVES THE RIGHT TO USE ALL, OR A SELECTION OF THE ABOVE STATED METHODS.**

<b>THEORY TESTS, QUIZZES, AND ASSIGNMENTS AS SET BY YOUR INSTRUCTOR.</b>	<b>90%</b>
<b>SUBJECTIVE EVALUATION BASED ON ATTENDANCE, PARTICIPATION, AND WORK HABITS.</b>	<b>10%</b>
<b>TOTAL</b>	<b>100%</b>

**THE GRADING SYSTEM IS AS FOLLOWS:**

- A+ = 90% - 100%**
- A = 80% - 89%**
- B = 70% - 79%**
- C = 55% - 69%**
- R = Repeat ( Student must repeat the course)**
- X = Temporary grade assigned, at the discretion of your instructor, to a student who has not successfully completed the course material, due to extenuating circumstances.  
(Refer to Student Handbook)**

- VI. **PRIOR LEARNING ASSESSMENT:**  
**Students who wish to apply for advanced credit in the course should consult the instructor. Credit for prior learning will be given upon successful completion of the following:**

VII. **REQUIRED STUDENT RESOURCES**

**Text: Electronics Fundamentals, Circuits, Devices, and Applications  
Third Edition - FLOYD**

**VIII. ADDITIONAL RESOURCE MATERIALS AVAILABLE IN THE COLLEGE LIBRARY:**

**Book Section (TITLE, PUBLISHER, EDITION, DATE, LIBRARY CALL NUMBER IF APPLICABLE - SEE ATTACHED EXAMPLE)**

**Periodical Section (MAGAZINES, ARTICLES)**

**Audiovisual Section (FILMS, FILMSTRIPS, TRANSPARENCIES)**

**IX. SPECIAL NOTE**

**Students with special needs (eg. physical limitations, visual impairments, hearing impairments, learning disabilities) are encouraged to discuss required accommodations confidentially with the instructor.**

**Your instructor reserves the right to modify the course as he/she deems necessary to meet the needs of students.**