Fundamentals of Electrical Theory

This course is designed and will be taught to provide a fundamental understanding of the principles, terms, physical laws and mathematical concepts used to explain electrical circuit behaviors. Areas covered will include an overview of D.C. and A.C. electrical theory and introduces the student to electrical components and magnetic concepts, Ohm's Law, Kirchhoff's current and voltage Laws, and the calculation of single-phase and three-phase power. There will be many experiments where meters are used to verify calculated results. This instruction will be done with a short lecture on subjects and the class labs done by the students working as teams to obtain, record, and analyze results. Electrical and job site safety will also be covered. Labs and example problems will be taken from the new textbook "*Mike Holt's Illustrated Guide to Basic Electrical Theory 3rd Edition".*

Homework assignments do account for a portion of the grade.

1. Math/Algebra review | Basic Electrical Concepts
2. Basic Circuit Components
3. Circuits, Laws and Measurements
4. Multiple-load Circuits
5. Magnetism and Electromagnetism
6. Power in AC Circuits
7. Three Phase AC Circuits
8. Inductance
9. Capacitance
10. Transformers, Motors (AC, DC)

Times and Dates: Begins: February 12, 2026
Ends: April 30, 2026
Thursday | 6 PM -8 PM
12 Sessions | Limited to 15 students

Location: EBMI office | 900 S. Highway Dr. | Fenton, MO 63026

Instructor: Milt Murry

Includes: Includes study manual and certificate of completion.

Tuition and Fees: Tuition due two weeks prior to course start date.

Employees of non-member firms	$360
Employees of EBMI member firms	$300
Late Fee (additional $50) Paid after two weeks prior to start date of class.	$50
Note: includes a $75 non-refundable fee.	

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