NCBS 404B: MATH PREPARATION FOR TRADES II: ELECTRICAL

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2025
Units:	0
Hours:	2 lecture per week (24 total per quarter)
Advisory:	Competency with topics in NCBS 404A.
Degree & Credit Status:	Non-Degree-Applicable Non-Credit Course Basic Skills, 2 Levels Below Transfer
Foothill GE:	Non-GE
Transferable:	None
Grade Type:	Non-Credit Course (Receives no Grade)
Repeatability:	Unlimited Repeatability

Student Learning Outcomes

- Students will be able to solve algebraically, graphically, and numerically linear equations and linear systems of equations.
- Students will be able to simplify and factor polynomial expression and simplify exponential expressions with integer exponents.

Description

Review of algebra topics in preparation for the electrical apprenticeship program. Solving linear equations in one variable, graphing linear functions, solving systems of linear equations, properties of exponents, multiplying and factoring polynomials.

Course Objectives

The student will be able to:

1. Solve a linear equation in one variable.
2. Graph a linear function and describe the properties of the function (slope and intercepts).
3. Solve a 2x2 system of equations.
4. Use properties of exponents to simplify expressions.
5. Add, subtract, and multiply polynomials.
6. Factor polynomials.
7. Identify number patterns in sequences.

Course Content

1. Linear relationships in 1 and 2 variables
   a. Solve linear equations with rational coefficients for a specified variable
   b. Solve literal equations (formulas) for a specified variable
   c. Represent linear functions using equations, tables, and graphs
   d. Interpret the meaning of intercepts and slopes from a problem situation, a table, a graph
   e. Describe magnitude and direction of slope
   f. Identify slopes and y-intercepts from equations
   g. Write an equation of a line
   h. Solve linear systems algebraically and graphically
   i. Write and graph a system of linear equalities
   j. Interpret the solution of a linear system in the context of a problem situation
2. Exponents, roots, and polynomials
   a. Multiply and divide powers
   b. Evaluate powers with positive, negative, and zero exponents
   c. Use properties of exponents
   d. Add, subtract, multiply, and divide polynomials
   e. Factor a polynomial using a greatest common factor
   f. Factor a difference of two squares
   g. Factor a trinomial

Lab Content

Not applicable.

Special Facilities and/or Equipment

1. Computer with internet access.
2. When taught hybrid, on-going access to computer with email software and hardware; email address.

Method(s) of Evaluation

Methods of Evaluation may include but are not limited to the following:

Class discussion
Homework
Self-assessment

Method(s) of Instruction

Methods of Instruction may include but are not limited to the following:

Lecture
Discussion

Representative Text(s) and Other Materials

Aufmann, Richard, and Joanne Lockwood. Mathematics: Journey from Basic Mathematics through Intermediate Algebra. 2025.

Instructor created worksheets, instructor created practice tests, web-based practice.

Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments

Weekly practice problems.

Discipline(s)

Mathematics