

Industrial Mathematics

This five-day course is designed to give industrial technicians the mathematical skills required to effectively accomplish jobs requiring mathematics. The course consists of classroom instruction as well as labs using real-world examples where these skills are applied. The examples used are tailored to the specific industry of the client.

I. Decimals

- Decimal System
- Placeholders
- Exercises

- Substitute and Solve
- Reality Check
- Applications

II. Basic Operations

- Calculators
- Addition
- Subtraction
- Multiplication
- Division
- Exercises
- Applications

VI. Negative Numbers

- Meaning of Negative Numbers
- Negative Numbers on Calculators
- Basic Operations on Negative Numbers
- Exercises
- Applications

III. Order of Operations

- Standard Order
- Parentheses and Brackets
- Exercises
- Applications

VII. Ratios

- Relationships of Numbers
- Cross Multiplication
- Transformer Windings
- Exercises
- Applications

IV. Variables and Equations

- Variables
- Equations
- Applications

VIII. Fractions

- Common Fractions
- Mixed Numbers
- Converting between Fractions and Decimals
- Basic Operations on Fractions
- Complex Fractions
- DC Circuit Analysis
- Exercises
- Applications

V. Problem Solving Techniques

- Draw a Picture
- Collect the Facts
- Identify the Unknown
- Write Equations

IX. Percentages

- Meaning of Percent
- Converting Among Percentages, Decimals, and Fractions
- Basic Operations on Percentages
- Tolerances
- Motor Efficiencies
- Exercises
- Applications

X. Exponents

- Meaning of Exponents
- Exponents on Calculators
- Exercises
- Applications

XI. Roots

- Meaning of Roots
- Roots on Calculators
- RMS Voltage
- Exercises
- Applications

XII. Scientific Notation

- Powers of 10
- Scientific Notation on Calculators
- Exercises
- Applications

XIII. Logarithms

- Log10
- Ln
- Logarithms on Calculators
- Decibels
- Exercises
- Applications

XIV. Units of Measurement

- Prefixes
- Conversions
- Exercises
- Applications

XV. Perimeter, Area, and Volume

- Perimeter
- Area
- Volume
- Tanks
- Exercises
- Applications

XVI. Averages

- Meaning of Average
- Exercises
- Applications

XVII. Algebraic Equations

- Balance Rule
- Rearranging in Variable Form
- Substitution
- Ohm's Law and Power
- Exercises
- Applications

XVIII. Trigonometric Functions

- Angles
- Right Triangles
- Sine, Cosine, and Tangent
- True Power and Apparent Power
- Exercises
- Applications