

Blueprint Reading, Shop Mathematics

Course Outline

- General Orientation, Introduction to Blueprint Reading, What is a Print? Prints on the Job, Parts of a Print, Title Block, Print Body, Simple Prints
- Line Conventions, Meaning and Precedence, Basic Shop Sketching, Tools & Techniques, Shop Math: Review of Basics, Addition, Subtraction, Multiplication, Division, Computing with a Scientific Calculator
- Multi-view Prints, Projecting Views, View Selection, Visualization, Auxiliary Views, Math: Review of Basics, Order of Operations, Fractions, and Computing with a Scientific Calculator,
- Common Fractions, Mixed Numbers, Common Fractions and Mixed Numbers, Addition, Subtraction, Multiplication, Division, Combined Operations, Decimals: Introduction, Equivalent Decimals and Common Fractions, Conversion, Combined Operations, Roots and Powers, Decimals, Common Fractions and Mixed Numbers, Combined Operations, Computing with a Scientific Calculator.
- Algebra: Introduction, Algebraic Operations, Addition, Subtraction, Multiplication, Division, Roots and Powers, Solution of Equations, Calculating with a Scientific Calculator.
- Ratios, Proportions, Direct and Indirect Proportions, Computing with a Scientific Calculator, Using Shop Measuring Tools, Steel Rules, Micrometers, Verniers, and Protractors.
- Interpreting Print Dimensions, Basic Rules for Reading, Basic Rules of Dimensioning, Dimensional Forms, Tolerance and Allowance, Tolerancing Terms, Geometry: Introduction, Angles and Triangles, Geometric Principles, Polygons, Circles, Computing with a Scientific Calculator.
- Interpreting Print Dimensions, Basic Rules for Reading, Basic Rules of Dimensioning, Dimensional Forms, Methods of Placing Dimensions, Dimensioning Features, Tolerance and Allowance, Tolerancing Terms.
- Detail and Assembly Prints, Materials and Revisions List, Sectional and Detailed Views, Practical Applications Practice.
- Machined Details and Elements, Tapers, Keyways, Screw Threads, Common Hardware, Gears, Surface Finish Designations.
- Trigonometry: Introduction, Functions, Angles and Sides of Right Triangles, Calculating with a Scientific Calculator.
- Welding and Precision Sheet Metal Prints, Reading Welding Symbols, Specifying Weld Sizes, Precision Sheet Metal Prints, Trigonometry, Compound Angles, Angles Formed by Intersecting Angles, Calculating with a Scientific Calculator,
- Metrication and First Angle Projections, International System Of Units, Dual Dimensioning, Projection Systems, Summary: Program/Course Material, Questions/Answers: Class Exercise.



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