

# Industrial Skilled Trades (IST)

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## IST 1000 Industrial Math I ..... 3 Credit Hours

**Equivalent:** APM 8110

**ESL Placement Level:** For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.

**Prerequisite:** Secondary school algebra (Recommended)

This course will provide the industrial focused student with the fundamentals of Algebra, Geometry and simple angle calculations as applied to practical industrial problems that arise in skilled trades areas. Topics include, but not limited to: solving for variables, ratio and proportion, percentage, tapers, area, perimeter, volume, circumference, circle definitions, and solving angle calculations using Sine, Cosine and Tangent. Satisfactory completion of secondary school algebra or equivalent is recommended. BILLABLE CONTACT HOURS: 3

## IST 1100 Industrial Math II ..... 3 Credit Hours

**Equivalent:** APM 8210

**ESL Placement Level:** For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.

**Prerequisite:** IST 1000 or consent of instructor.

This course provides the student with the basic principles of trigonometry as applied to industrial problems. Topics covered are basic trigonometric functions, functions of angles, relations between trigonometric functions, tables and their uses, and solution of right angles. It will also cover the interpolation of angles to the nearest second of a degree, solution of oblique triangles by right triangle methods, Law of Sines, and Law of Cosines. BILLABLE CONTACT HOURS: 3

## IST 1200 Industrial Math III ..... 4 Credit Hours

**Equivalent:** APM 8310

**ESL Placement Level:** For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.

**Prerequisite:** IST 1100 or consent of instructor.

This course provides students with advanced applications of trigonometry and compound angles to solve for out of shape features of solids. Trigonometric and compound angle formulas will be used to create definite values of solids containing out of shape features essential to measure and locate details on a blueprint. Students will use advanced mathematical calculations to transform blueprints from art to part. Students will learn how trigonometric and angular computations apply to setting up various materials for machining and checking in today's shop environment. Students will learn the principles of CNC machining that are applied in creating accurate representations of shaped features. Students will gain the knowledge of many methods of checking these figures for accuracy. BILLABLE CONTACT HOURS: 4

## IST 1300 Industrial Print Reading .....3 Credit Hours

**Equivalent:** TED 1030

**ESL Placement Level:** For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.

Students will read and interpret design/manufacturing prints (2D drawings). An emphasis will be placed on how the print information (views, dimensions, notes, symbols, tolerances, tables, etc.) is used to fully describe and produce physical parts, tools, or processes. Basic print terminology and an understanding of orthographic views will be presented. BILLABLE CONTACT HOURS: 3

## IST 1800 Manufacturing Processes .....3 Credit Hours

**Equivalent:** MTT 1400 | MEC 1010

**ESL Placement Level:** For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.

This course is an introduction to manufacturing processes such as safety, materials, machining, welding, casting, forging, forming, molding, design, inspection, quality, just-in-time manufacturing, lean manufacturing and automation. Projects related to manufacturing processes will be performed. BILLABLE CONTACT HOURS: 3