Apprentice Mathematics (APM)

APM 8110  Geometry Algebra  3 Credit Hours

English/ESL Placement: Placement into ENG 1060 or higher (or placement into ESL 2510 or higher for students taking the ESL sequence of courses).

Prerequisite: Secondary school algebra.

This course will provide the student with the fundamentals of Algebra and Geometry as applied to practical industrial problems that arise in his or her trade area. Topics include positive and negative numbers, ratio and proportion, simple equations, percentage, tapers, square root, formulas, and quadratic equations. Geometry principles of axioms, propositions, circle definitions, central angles, and tangents will be applied in the problem solving techniques of actual trade problems. BILLABLE CONTACT HOURS: 3

APM 8210  Plane Trigonometry  3 Credit Hours

English/ESL Placement: Placement into ENG 1060 or higher (or placement into ESL 2510 or higher for students taking the ESL sequence of courses).

Prerequisite: APM 8110 or equivalent.

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

APM 8310  Advanced Trigonometry and Angle Calculations for Industry  4 Credit Hours

English/ESL Placement: Placement into ENG 1060 or higher (or placement into ESL 2510 or higher for students taking the ESL sequence of courses).

Prerequisite: APM 8210

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