THE COMPLETE MATHEMATICS CURRICULUM

Curriculum Summary:

- 10 self-study courses
- $317.00 per student
- 119 hours of training
- $2.66 per hour of instruction

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This training curriculum for your employees is designed to provide the fundamental knowledge of mathematics used in performing everyday tasks. The training materials are in a self-study format and are designed for use without the aid of an instructor. It is recommended, however, that a resource person be available to trainees to answer questions should they encounter any difficulty in taking a course. Each course includes a set of review questions that can be retained by the trainer and given to the trainee after completing the course. These questions provide a means of verifying that the student has adequately learned and retained the course material.

The following table shows the curriculum, giving the units in the recommended order with their hours of instructional content and unit cost shown. The average cost per hour of instruction is $2.66. The complete mathematics training curriculum is suggested to prepare individuals to begin training for trades in the workplace. This insures that the trainee has the basic knowledge of mathematics to progress in learning job specific material.

Course #	Course Title	Hours	Unit Price
29	Plant Mathematics-Whole Numbers	14.0	$40.75
30	Plant Mathematics-Fractions	19.0	$52.00
60	Plant Mathematics-Decimals & Percents	25.0	$52.00
82	Plant Mathematics-Positive & Negative Numbers	4.0	$15.50
83	Plant Mathematics-Simple Algebra	10.0	$30.25
84	Plant Mathematics-Ratio & Proportion	10.0	$30.25
73	Plant Mathematics-Area & Volume of Common Figures	5.0	$17.50
78	Plant Mathematics-Reading & Preparing Simple Graphs	20.0	$39.75
99	Plant Mathematics-Square & Square Root Tables	4.0	$13.75
114	Plant Mathematics-Right Angle Trigonometry	8.0	$25.25
	Totals:	119	$317.00
	Total Curriculum - Cost/Hour of Instruction:	$2.66	

This is a generic curriculum which is suggested to bring your employees up to speed in mathematics. We have additional courses covering other areas of basic knowledge to prepare trainee for learning job specific material. We would be happy to work with you to develop a curriculum to meet your specific needs.

For specific information on any of the courses listed in this curriculum, see the Appendix. The Appendix contains the abstracts for each of the courses in the curriculum. In addition, there is information on how the self-study courses work and their benefits.

Course No. 29 14 hours

Plant Mathematics –Whole Numbers

Identification of whole numbers, symbols, and terms; the processes off addition, subtraction, multiplication, and division; answer checking methods for these procedures; basic rules in working problems to give maximum accuracy; problems involving sequential use of these four arithmetic processes; and practical word problems in the fields of laboratory control, production, and maintenance.
Elementary school mathematics.

Course No. 30 19 hours

Plant Mathematics – Fractions

Fraction terminology and the meaning of fractions; the conversion of fractions to whole or mixed numbers and vice versa; the manipulation of fractions in the solution of problems in addition, subtraction, multiplication, and division; the four basic steps in solving mathematical problems; and practical sequential problems with fractions in the fields of laboratory control, production, and maintenance.
Elementary school mathematics.

Course No. 60 25 hours

Plant Mathematics – Decimals and Percents

A refresher course on decimals and percents, their relationships to each other and to fractions, and the mathematical processes involving the three. Conversion from one form of notation (fraction, decimal, or percent) to another; adding, subtracting, multiplying, and dividing with decimals; rounding off and checking of decimal answers in problems; converting measurement units to decimals of other units in the same scale; working in decimals in solving multiplication and division problems involving percents; and practical sequential problems in the fields of production, laboratory control, and maintenance.
Elementary school mathematics.

Course No. 82 4 hours

Plant Mathematics –Positive and Negative Numbers

A refresher course on positive and negative numbers and their relationship to each other: using signs to determine positive or negative qualities; reading scale values above and below zero; adding negative numbers, positive and negative numbers; subtracting large positive numbers from smaller ones; and working problems that require the use of positive and negative numbers.
Elementary school mathematics.

Course No. 83 10 hours

Plant Mathematics – Simple Algebra

Simple algebra required for day-to-day operation in an industrial environment: forming equations using simple numbers; rearranging equations so that one side equals zero; unknowns; setting up and solving equations with one unknown; changing multipliers and divisors; checking; and symbols other than X. *Understanding of whole numbers, fractions, decimals, percents, and positive and negative numbers.*

Course No. 84 10 hours

Plant Mathematics – Ratio and Proportion

The use of ratio and proportion to solve simple problems common in industry: explanation and means of expressing ratios; reducing to lower terms; forming a proportion; means and extremes; solving for unknowns in proportions; checking; proportions using verbal descriptions; and alternate and indirect proportions.
Competence with whole numbers, fractions, decimals, percents, positive and negative numbers, and simple algebra.

Course No. 73 5 hours

Plant Mathematics – Area and Volume of Common Figures

A refresher course in the calculation of area and volume of figures encountered in the industrial shop or plant: the recognition of plane surfaces and the use of formulas for the determination of area; the breakdown of irregular surfaces into familiar shapes for area calculation; the calculation of the volumes of familiar shapes; and the conversion of units of volume measurement.
Familiarity with whole numbers, fractions, decimals and percents.

Course No. 78 20 hours

Plant Mathematics – Reading and Preparing Simple Graphs

The reading and preparation of simple bar and line graphs.
Bar Graphs: recognition of the parts of a bar graph, identifying bars and reading their value; interpolation of values between scale divisions; selection of the proper bar graph based on content; preparation of simple bar graphs in both vertical and horizontal position, including selection and ordering of data, setup of scales, and drawing the bars; use of interrupted amount scale for clarity; and reading and preparing component bar graphs.

Line Graphs: identification of scales on line graphs; point coordinates and the proper way to write them; determining the value of a missing coordinate given one coordinate and curve; the concept of positive and negative coordinates; reading values from curve families and multi-scale graphs; plotting points with both positive and negative coordinates; recognition that two points do not determine curve shape; requirements for and setup of scales; preparation of smooth curves from raw data; and use of curve families and multi-scale graphs.

Course No. 99 4 hours

Plant Mathematics – Squares and Square Root Tables

Definition of square; use of symbols; squares of simple whole numbers; shifting the decimal point to extend table use; interpolation for values not to be found directly; and how to handle fractions. Square roots are covered in the same fashion.

Competence in addition, subtraction, multiplication, division, fractions, and decimals.