



<u>Training Programs</u> (Includes one-time registration and on-line access fee of \$195 per participant. Deduct this amount for current participants.)	<u>Esitimated Hours</u>	<u>Prerequisites</u>	<u>Price (\$US)</u>
<u>Complete Training Program for (S)AG- Ball Mill Operations</u> (Modules 1-16, 18,19,21,22) This program is designed for grinding operations with primary AG or SAG milling, either alone or followed by ball milling.	58	none	\$3,854
<u>Complete Training Program for Non-(S)AG Mill Operations</u> (Modules 1-21) This program is designed for grinding operations without AG/SAG mills. It includes rod milling and ball mill grinding circuits.	62	none	\$3,993
<u>Complete Training Program Covering (S)AG, Ball Mill and Rod Mill Grinding Operations</u> (Modules 1-22) This program includes all training modules and covers AG/SAG, ball milling and rod milling.	64	none	\$4,252
<u>Classification System Efficiency (CSE) Training Program</u> (Modules 5, 7, 8 ,9, 18) This program provides all the steps to calculate and increase the Classification System Efficiency (CSE) of ball milling circuits.	16	none	\$1,310
<u>Evaluation of Autogenous and Semi-Autogenous Grinding</u> (Module 22) This single module program provides essential knowledge and skills to effectively manage AG/SAG circuit processing performance. It includes 3 prefaces which address (S)AG mill power draw, (S)AG power and charge level measurements, and Work Index Analysis of (S)AG-ball milling.	4	none	\$454
<u>Slurry Pumping Program</u> (Module 9) This single module program covers slurry pumping systems, allowing you to characterize slurry pump performance and make adjustments to achieve desired performance.	4	none	\$454
<u>Measures of Industrial Grinding Efficiency</u> (Modules 4, 5) This two module program addresses Work Index calculations for evaluating grinding circuit efficiency as well as Functional Performance Analysis of ball mill circuits.	6	none	\$593
<u>Functional Performance of Ball Milling Circuits</u> (Module 5) In this single module program, you will learn how to characterize the performance of ball mill circuits using the Functional Performance Equation.	2.5	none	\$394
<u>Mass Balance Calculations & Computer Program</u> (Module 16, includes mass balance program) With this program you will be able to calculate the mass balance of closed grinding circuits. The program requires Microsoft Excel [™] to run.	1	none	\$794

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10 hours of training is equal to 1.0 CEU

TERMS APPLICABLE TO ALL METCOM TRAINING

<p>All training participants must sign and return the Metcom Participant Agreement form prior to receiving access to training materials.</p> <p>Above prices include a one-time registration fee for online access to all training materials. Login credentials are valid for 12 months, after which an online access renewal fee of \$95/year is required to maintain access.</p> <p>Prices include Certification Testing, unless otherwise noted. Accreditation Certificate from the Engineering Institute of Canada provided with multi-module programs.</p> <p>Prices are per Module or per Program for each Participant, in \$US, any applicable taxes extra. Canadian residents, add GST or HST. Quebec residents, add GST & QST.</p> <p>Prices are valid for 30 days from date of Metcom offer, otherwise subject to change without notice.</p> <p>Standard terms of payment are net 30 days.</p>
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<u>Individual Training Modules</u>	<u>Esitimated Hours</u>	<u>Prerequisite Modules</u>	<u>Price (\$US)</u>
Registration Fee: (Required for all online training, valid for 12 months) A one-time registration fee is due for online access to all training materials. Login credentials are valid for 12 months, after which an online access renewal fee of \$95/year is required to maintain access.	-	none	\$195
Participant Guide: Included with all training, this guide describes the main characteristics of the Program and provides information on your future study plans, certification, copyrights and other important subjects. General listing of all the technical references listed in the modules along with a general glossary of key words and expressions is included.	0.50	none	\$0
Documentation Guide: This Documentation Guide will help you organize all the information and data that will be used to apply the Metcom System to your grinding circuits.	0.50	none	\$69
Module 1 - Introduction to the Metcom System: This module will introduce you to the Metcom System. It explains the technical and economic reasons for applying the Metcom System to plant grinding operations.	0.75	none	\$69
Module 2 - Mill Power Draw: This module provides detailed instruction for determining mill power draw characteristics and capabilities for rod, ball and AG/SAG mills.	2.50	none	\$139
Module 3 - Power & Charge Level Measurements: In this module, you will learn how to measure the power draw and volumetric loading of your mills from plant readings and measurements.	2.50	2	\$139
Module 4 - Work Index Efficiency: In this module, you will learn about Work Index calculations for evaluating grinding circuit efficiency, as initially developed by Mr. Fred Bond.	3.50	none	\$199
Module 5 - Functional Performance of Ball Milling: In this module, you will learn how to characterize the performance of ball mill circuits using the Functional Performance Equation.	2.50	none	\$199
Module 6 - Grinding & Plant Economics: In this module, you will learn how to relate grinding efficiency to grinding costs and estimate the value of the grinding circuit product in your plant. You will be able to evaluate the effects of changes in plant tonnage and grind, and evaluate different ways of exploiting improvements in grinding efficiency.	3.00	1	\$199
Module 7 - Hydrocyclone Performance: In this module you will learn about the hydrocyclone and how to characterize hydrocyclone performance.	3.00	none	\$199
Module 8 - Hydrocyclone Adjustments: This module presents you with a systematic method by which you can achieve desired hydrocyclone performance.	4.00	7	\$259
Module 9 - Slurry Pumping: In this module you will become familiar with slurry pumping systems, how to characterize slurry pump performance and how to make adjustments to achieve desired performance.	4.00	none	\$259
Module 10 - Existing & Required Data: In this module, you will find a summary of the existing and required information you need on the grinding circuit in your plant to achieve improvements in grinding performance. In particular, you will learn how to compile relevant existing data on grinding circuits and identify the data required from grinding circuit surveys.	1.00	1	\$69
Module 11 - Plant Sampling Guide & Circuit Surveys: In this module you will learn how to design and execute grinding circuit surveys in your plant in order to meet the requirements of the Metcom System.	2.00	1, 10	\$139
Module 12 - Sample Handling & Analyses: In this module you will learn how to handle and analyze ore and slurry samples.	3.50	none	\$259
Module 13 - Introduction to Grindability Testing: The objective of this module is to introduce you to grindability testing. You will learn how to select the appropriate test for your needs.	1.00	1	\$69

<u>Individual Training Modules</u>	<u>Esitmated Hours</u>	<u>Prerequisite Modules</u>	<u>Price (\$US)</u>
Module 14 - Bond Grindability Tests: The objective of this module is for you to be able to perform Bond rod mill and ball mill grindability tests.	2.50	12	\$199
Module 15 - Batch Grindability Tests: In this module, you will learn how to design and perform on-site batch grindability tests.	3.50	12, 13	\$259
Module 16 - Mass Balance Calculations/Computer Program: In this module you will learn how to mass balance grinding circuit survey data using the Metcom Mass Balance Computer Program which is included with the module.	1.00	11	\$599
Module 17 - Evaluation of Rod Milling: Upon completion of this module you will be able to evaluate existing and alternative rod mill circuit design and operating variables in terms of their effects on rod mill grinding efficiency.	2.00	3, 4, 6, 11	\$139
Module 18 - Evaluation of Circuit Classification: Once you have completed this module, you will be able to evaluate existing and alternative ball mill circuit design and operating variables in terms of their effects on the classification system efficiency of a ball mill circuit.	2.50	5, 6, 8	\$199
Module 19 - Evaluation of Ball Mill Grinding: In this module, you will learn how to evaluate existing and alternative ball mill circuit design and operating variables in terms of their effects on ball mill grinding efficiency.	2.00	1, 2, 5, 6, 8, 18	\$139
Module 20 - Evaluation of Circuit Arrangements: Once you have completed this module, you will be able to evaluate existing and alternative grinding circuit arrangements in terms of their effect on grinding circuit efficiency.	4.00	1, 2, 4, 5, 6, 17, 18, 19	\$259
Module 21 - Grinding Circuit Control: In this module you will learn how to define the purposes of grinding process control, identify disturbances and suitable corrective actions, specify a control system, and estimate the economic benefits of improved control.	2.00	1, 5, 6, 7, 8	\$139
Module 22 - Evaluation of Autogenous and Semi-Autogenous Grinding: Developed for plant metallurgical staff and operations management, as well as those who support them (e.g., technical departments and suppliers). This module provides essential knowledge and a set of skills to effectively manage AG/SAG circuit processing performance.	4.00**	none	\$259

<u>Fees</u>	
Registration Fee (Required for all online training, valid for 12 months) A one-time registration fee is due for online access to all training materials. Login credentials are valid for 12 months, after which an online access renewal fee of \$99/year is required to maintain access.	\$195
Online Access Renewal Fee (12 months) Required to maintain access to online training materials after the initial 12 month access included in registration fee.	\$95

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** Hours estimate includes time to complete module prefaces.

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All training participants must sign and return the Metcom Participant Agreement form prior to receiving access to training materials.
Prices include Certification Testing, unless otherwise noted. Accreditation Certificate from the Engineering Institute of Canada provided with multi-module programs.
Prices are per Module or per Program for each Participant, in \$US, any applicable taxes extra. Canadian residents, add GST or HST. Quebec residents, add GST & QST.
Prices are valid for 30 days from date of Metcom offer, otherwise subject to change without notice.
A \$195 Registration Fee is required for all online training and is valid for 12 months, after which an online access renewal fee of \$95/year is required to maintain access.
Standard terms of payment are net 30 days.



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 programadmin@metcomtech.com

Metcom Training Order Form

Participant Name & E-mail	Description <i>(Training Program Title or Module Numbers*)</i>	\$ US (Each)
		\$ _____
		\$ _____
		\$ _____
		\$ _____

Language Selection:
 English French Spanish

** For initial orders of individual module(s)
 please add one-time \$195 registration fee.*

Subtotal: _____
 Multi User or
 Major Subscriber Discount
 - _____% (If applicable) - _____

Taxes:
 (Canada, please add, GST, QST or HST): _____

Purchasing Information:

Total: \$ _____

<u>Company Purchase Order</u>		OR	<u>Visa / MasterCard/Discover</u>	
Purchase Order #: _____ Company: _____ Name of Contact: _____ Billing Address: _____ E-Mail: _____ Phone: _____ Fax: _____			Credit Card: Visa <input type="checkbox"/> Master Card <input type="checkbox"/> Discover <input type="checkbox"/> Card No. _____ Exp. Date: _____ Name On Card: _____	
Form submission: Fax: (989) 669-6000 Scan / Email: programadmin@metcomtech.com Mail: Metcom Technologies, Inc. 501 South Pokegama Ave., Suite 6 Grand Rapids, MN 55744				

Additional Terms & Conditions

Password and username valid for 12 months, then \$US 95/year renewal, provide access to purchased Metcom training materials, including upgrades, revisions and additions to purchased modules.

All Training participants must sign and return the Metcom Training Participant Agreement

Training Login credentials and materials may not be shared or distributed.

Price includes certification testing, unless otherwise noted.

Prices are per Module or per Program for each Participant, in \$US, any applicable taxes extra. Canadian residents, add GST or HST. Quebec residents, add GST & QST.

Prices are valid for 30 days from date of Metcom offer, otherwise subject to change without notice.

Standard terms of payment are net 30 days for company purchase orders.

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I agree not to share my username and password (used to access the materials electronically) with others. I may use the materials, including reference to and sharing specific information needed for execution of work tasks, with others employed at this location.

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Form PA-2017

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