

## SYLLABUS

SediGraph 5120/5125 and MasterTech 052 Operator Training

### INSTRUCTIONAL GOALS

This course introduces students to the components, operation, and theory of the SediGraph III for particle size analysis.

At the end of this course, you will:

- Be able to identify and power up the system, including installation of the operating program.
- Understand the basic fundamentals of sedimentation.
- Understand the basic fundamentals of sample dispersion and be able to properly disperse a sample of reference material.
- Know how to use the operating software to operate the SediGraph and MasterTech.
- Be able to properly configure any report format, a combination of reports, and obtain analysis information according to your laboratory requirements.
- Be able to make all user level repairs, adjustments and checks, and locate equipment problems using the Troubleshooting section of the Operator's manual.

### NEEDS AND RESOURCES

#### Required Background

To successfully complete this course, you must:

- Have some minimal exposure to a SediGraph in a laboratory environment.
- Have reviewed the Operator's manual.

#### Required Materials

The following provided materials will help you successfully complete this course:

- Operator Training Study Guide with Lecture Presentations
- Notepad
- Pen
- Highlighter
- Micromeritics Thumb Drive containing presentations, relevant application notes and Study Guide

#### Additional Print Resources

The following publications will also be provided:

- Webb, Paul A. and Clyde Orr. *Analytical Methods in Fine Particle Technology*. Norcross, Georgia, U.S.A.: Micromeritics Instrument Corporation, 1997.
- Related Application Notes and Technical Tips.

#### Online Resources

Additional information can be found at:

- [www.micromeritics.com](http://www.micromeritics.com)

## COURSE SCHEDULE

### Day 1

Session	Room	Activity	Time
-	LECTURE	Introduction	9:00 – 9:15 AM
1	LECTURE	Sedimentation Theory and the Operation of the SediGraph	9:15 – 10:30 AM
2	LAB	System and Software overview; Baseline collection	10:30 – 11:30 AM
-	-	<b>LUNCH</b>	<b>11:30 – 1:00 PM</b>
3	LAB	Sample preparation & dispersion (Coarse Garnet), Sample file prep	1:00 – 2:00 PM
4	LAB	A detailed review of Material Properties and Analysis Options; Analysis of coarse garnet.	2:00 – 3:30 PM

### Day 2

Session	Room	Activity	Time
-	LECTURE	Day 2 Introduction and Brief Questions/Review of Day 1	9:00 – 9:15 AM
1	LAB	MasterTech Installation & Verification; Programming the MasterTech Schedule	9:15 – 10:00 AM
2	LAB	Prepare and Analyze Calcium Carbonate using MasterTech	10:00 – 11:30 AM
-	-	<b>LUNCH</b>	<b>11:30 - 1:00 PM</b>
3	-	<b>FACILITY TOUR</b>	<b>1:00 - 2:00 PM</b>
4	LAB	Activity: Correct vs. Incorrect Dispersion Techniques Data Reduction & Exporting: SPC Reports	2:00 – 3:30 PM

### Day 3

Session	Room	Activity	Time
-	<b>LECTURE</b>	Day 3 Introduction and Brief Questions/Review of Day 1 & 2	9:00 – 9:15 AM
<b>1</b>	<b>LECTURE</b>	A Review of Report Options, Data Reduction and Class-Generated Results	9:15 – 11:30 AM
-	-	<b>LUNCH</b>	<b>11:30 – 1:00 PM</b>
<b>3</b>	<b>SERVICE</b>	A discussion of installation, calibration, and operator maintenance	1:00 – 2:30 PM
<b>4</b>	<b>LAB</b>	Data Analysis Activity	2:30 – 3:00 PM
	<b>ASSESSMENT</b>	Course Survey & Assessment	3:00 – 4:00 PM

## POLICIES AND PROCEDURES

### General Rules:

Attendance to all scheduled lectures and labs is very important due to the length of the course. Please make every attempt possible to avoid tardiness. If you do come in late, please enter through the rear door of the classroom so as to not disrupt or distract your fellow students. If you are unable to attend a day or part of a day due to emergency, please notify the Training Coordinator immediately.

Remember, you and/or your company have a business need for you to attend and complete this course to insure that you are getting the most out of your/your company's investment in your Micromeritics instrument.

### Grading Policies:

You will be periodically evaluated throughout the course during oral discussions and demonstrations. There are also questions in your Operator Training Study Guide that will be discussed at the completion of each unit. Please be prepared to answer questions about the previous lessons content. A brief assessment exam will be given at the end of the course to verify that learning objectives are met by each student.

### Grading Scale:

There is no grading scale for this course and you will not fail. Again, you and/or your company have a business need for you to attend and complete this course to insure that you are getting the most out of your/your company's investment in your Micromeritics instrument .

## ADDITIONAL INFORMATION

Lunch will be provided by Micromeritics. Please inform the Training Coordinator of any special dietary needs.

## CONTACT INFORMATION

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