

### GENERAL INFORMATION:

#### Class start and duration (unless otherwise noted):

First day... 8:30am to 4:00pm

Subsequent days...8:00am to 4:00pm

**What to bring:** If you are coming for a User Training class (as opposed to a Service Training class), we highly recommend you bring a laptop with the instrument software already loaded (or have administrative privileges, so you can load the software during class). You may also want to bring any methods that you have already written but have questions about. For Service Training classes, you need not bring anything; however, if you have a laptop, you may wish to bring it to practice doing calibrations or adjustments with your own laptop.

#### What is included?

- Electronic and often printed copies of the presentations
- Certificate of completion
- Electronic Service manuals (for Service classes)
- Electronic copies of Operators and Programmers manuals (for User classes)
- Lunches are generally included

### MICROLAB NIMBUS

Training for the MICROLAB NIMBUS Liquid Handling Workstation is being developed and will be included in the next Hamilton Training Program Description and scheduling for these classes will also be listed in the next release of the Hamilton Training Program Schedule.

The MICROLAB® NIMBUS is Hamilton Company's newest automated multi-channel pipetting platform, offering a high density deck layout in a body small enough to fit inside a laminar flow hood. The system utilizes the same highly accurate 96-channel pipetting head as Hamilton's STAR instruments, yet is designed for smaller throughput applications.

### CLASS DESCRIPTIONS:

STAR User Training	4 Days	Product No. TRAIN01
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This training is for a new STAR user or programmer who has very little or no experience with the STAR. This can also be a good refresher course for beginning programmers. The focus is on running and programming the STAR using VenusOne software. At least half of the class is hands-on.

**Topics covered:** Microlab STAR System Overview, How to Create a Method, How to Run a Method, Error Handling, Troubleshooting, Configuration editor, Layout editor, Sequence editor, Labware editor, Smart steps, Easy steps, and single steps, Import/export, Disable/Enable, Loops, Variables, User input/output, Teaching positions with channels and iSWAP, Operating the channels, the 96 head, CO-RE grippers, iSWAP, and Autoload

**What is not covered:** Worklisting, liquid handling, libraries, stacking, security features, third party devices, wash stations, and less common STAR and general commands.

**Prerequisites:** Basic knowledge of computers and familiarity with Windows is required. Familiarity with operating the STAR is not required.

<b>Advanced STAR Training</b>	<b>3 Days</b>	<b>Product No. TRAIN03</b>
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This training is for the more experienced STAR programmer. This class covers topics not addressed in the STAR User Training. The class includes some hands-on time.

**Topics covered:** Worklisting, sample tracking, report mapping, Libraries, tip counting, firmware commands, error handling by user, Arrays, parallel processes, timers, stacking, device drivers, security features, Liquid Handling - measuring container volume, developing liquid classes, Open discussion, assistance with your programming needs

**What is not covered:** Introductory VenusOne programming, Dynamic Scheduling software, TADM

**Prerequisites:** At least several weeks of hands-on STAR operation and programming experience OR completion of the STAR User Training plus previous programming experience with other liquid handling robots.

<b>STAR Scheduler Training</b>	<b>2 Days</b>	<b>Product No. TRAIN18</b>
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This class is for the experienced STAR programmer. It covers the Hamilton STAR Dynamic Scheduling software. The class includes some hands-on time.

**Topics covered:** Tasks, Activity Editor, Workflow Editor, Scheduling, and Optimization.

**What is not covered:** STAR method programming.

**Prerequisites:** At least several months of hands-on STAR operation and programming experience OR completion of the STAR User Training plus previous programming experience with other liquid handling robots.

This class is scheduled on an as-needed basis.

At least 3 weeks notice is required to schedule this class. Minimum class size is 2 people.

<b>STAR TADM Training</b>	<b>2 Days</b>	<b>Product No. TRAIN19</b>
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This class is for the experienced STAR programmer. It covers the optional Total Aspiration and Dispense Monitoring software feature of the STAR. The class includes some hands-on time.

**Topics covered:** Liquid handling, setting up and testing TADM, associated error handling

**What is not covered:** STAR method programming

**Prerequisites:** Several months of hands-on STAR operation and programming experience OR completion of the STAR User Training plus previous programming experience with other liquid handling robots.

This class is scheduled on an as-needed basis.

At least 3 weeks notice is required to schedule this class. Minimum class size is 2 people.

<b>STAR Service Training</b>	<b>5 Days</b>	<b>Product No. TRAIN06</b>
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This class is for the field service engineer who will be responsible for installing, maintaining, and repairing the STAR. It is also applicable for technical support personnel who need to know how the instrument is installed, maintained and repaired. This class will not make you a STAR service expert, but it will provide the foundation for understanding the workings of the STAR hardware. Most of the class is hands-on.

**Topics covered:** Installation, Preventative Maintenance, Calibrations, Adjustments, Service Software, Troubleshooting, Volume Field Verification, interpreting trace files, firmware and software compatibility, part removal and replacement, and service documentation. If time allows, there may be a brief introduction to the STAR user software.

**What is not covered:** Engineering-level theory and data; in-depth troubleshooting; IVD software-related service topics; not all configuration options will be covered.

**Prerequisites:** Experience repairing mechanical equipment, basic knowledge of computers, good familiarity with Windows and Windows Explorer, experience with software installations, comfortable using hand tools, familiarity with electro-mechanical equipment.

<b>STAR IVD Service Training</b>	<b>4 Days</b>	<b>Product No. TRAIN08</b>
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This class is for the field service engineer who will be responsible for installing, maintaining, and repairing the IVD STAR. It is also applicable for technical support personnel who need to know how the instrument is installed, maintained and repaired. This class will not make you a STAR service expert, but it will provide the foundation for understanding the workings of the STAR hardware. Most of the class is hands-on.

**Topics covered:** Installation, Preventative Maintenance, Calibrations, Adjustments, Service Software, Troubleshooting, IVD Volume Field Verification, interpreting trace files, firmware and software compatibility, part removal and replacement, and service documentation.

**What is not covered:** Engineering-level theory and data; in-depth troubleshooting; 96/384 head topics; application-specific hardware or software topics

**Prerequisites:** Experience repairing mechanical equipment, basic knowledge of computers, good familiarity with Windows and Windows Explorer, experience with software installations, comfortable using hand tools, familiarity with electro-mechanical equipment.

<b>MLAT+2 Service Training</b>	<b>5 Days</b>	<b>Product No. TRAIN10</b>
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This class is for the field service engineer who will be responsible for installing, maintaining, and repairing the MLAT+2. It is also applicable for technical support personnel who need to know how the instrument is installed, maintained and repaired. This class will not make you an MLAT+2 service expert, but it will provide the foundation for understanding the workings of the MLAT+2 hardware. Most of the class is hands-on.

**Topics covered:** Installation, Preventative Maintenance, Calibrations, Adjustments, Service Software, Troubleshooting, Volume Verification, firmware and software compatibility, part removal and replacement, and service documentation.

**What is not covered:** Engineering-level theory and data; in-depth troubleshooting.

**Prerequisites:** Experience repairing mechanical equipment, basic knowledge of computers, good familiarity with Windows and Windows Explorer, experience with software installations, comfortable using hand tools, familiarity with electro-mechanical equipment.

This class is scheduled on an as-needed basis.

At least 3 weeks notice is required to schedule this class. Minimum class size is 2 people.

<b>ML4000 Service Training</b>	<b>3 Days</b>	<b>Product No. TRAIN15</b>
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This class is for the field service engineer who will be responsible for installing, maintaining, and repairing the ML4000 series robots. It is also applicable for technical support personnel who need to know how the instrument is installed, maintained and repaired. This class will not make you an ML4000 service expert, but it will provide the foundation for understanding the workings of the ML4000 hardware. Class is mostly hands-on.

**Topics covered:** Installation, Preventative Maintenance, Calibrations, Adjustments, Service Software, Troubleshooting, interpreting trace files, firmware and software compatibility, part removal and replacement, and service documentation.

**What is not covered:** Engineering-level theory and data; in-depth troubleshooting; not all configurations will be covered.

**Prerequisites:** Experience repairing mechanical equipment, basic knowledge of computers, good familiarity with Windows and Windows Explorer, experience with software installations, comfortable using hand tools, familiarity with electro-mechanical equipment.

This class is scheduled on an as-needed basis.

At least 3 weeks notice is required to schedule this class. Minimum class size is 2 people.