



Technical Training Course Descriptions

Welch Allyn offers technical education courses for Biomedical and Information Technology professionals covering patient monitors, vital signs monitors, electrocardiographs, and Acuity® Central Stations. These courses are designed for technical personnel who service and support these Welch Allyn products.

Our instructors are Service Engineers with a thorough knowledge of our products. Each Welch Allyn Service Center or Customer On-site course includes both lecture, hands-on service training, and troubleshooting lab.

Welch Allyn Service Center Training Course Descriptions

Acuity System Fundamentals Training

Welch Allyn's three day Acuity System Fundamentals course introduces the student to a variety of software and hardware concepts, maintenance and troubleshooting techniques applicable to Acuity central stations and Flexible Monitoring systems.

Topics covered include:

- Flexible Monitoring Components/Overview
- System Architecture, Hardware and Software
- Basic Administration and System Configuration
- UNIX Fundamentals
- Routine Maintenance
- Troubleshooting
- Support Strategy Processes
- Reporting Complaints and Service Data to Welch Allyn, New Product Warranty, Part numbers, and Instruments.

Attendees should be familiar with the concepts of networking, software directory structure, and have basic UNIX skills.

Acuity System Administration Training

Welch Allyn's two day Acuity System Administration course is designed to enable the student to administer the Acuity Network, and introduces advanced network troubleshooting theory and procedures. Topics covered include:

- Acuity Hardware and Software Refresher
- Software Tools
- Terminal Servers
- Patient Name Server
- Switches, Routers, & Network Design
- Configurations and Advanced Troubleshooting

Strong knowledge of Acuity Operations and the UNIX operating system, including commands and file system navigation, are required.

Pre-requisites: **Acuity System Fundamentals**



Technical Training Course Descriptions

Acuity Wireless Patient Monitoring Training

Welch Allyn's two day Acuity Wireless Patient Monitoring course covers wireless local area networking (**WLAN**) concepts, networking hardware, software and system infrastructure. Topics covered include:

- WLAN Introduction & Theory
- WLAN Networks & Design concepts
- Access Point Installation & Configuration
- DHCP Configuration
- WLAN Service Process and Validation

Attendees should have a basic understanding of radio frequency (RF) theory, network topology, and a strong working knowledge of the Acuity Central monitoring Station and UNIX.

Pre-requisites: **Acuity Fundamentals Acuity System Administration**

Micropaq Monitor - Service Repair Training

Welch Allyn's one day Micropaq monitor course covers the non-warranty repair and maintenance of the Micropaq product line. The course includes both lecture and hands-on service training. You will learn essential product configuration, theory of operation, assembly, and test details. Topics covered include:

- Product disassembly and assembly techniques
- Replacement parts
- Unit troubleshooting
- Functional test procedures
- Reporting Complaints and Service Data to Welch Allyn, New Product Warranty, Part numbers, Service Tools and Instruments.

Class materials provided include Micropaq Service Manual

Attendees should have working knowledge of microprocessor-based medical electronics servicing and analog and digital electronics theory.

Propaq LT - Service Repair Training

Welch Allyn's two day Propaq LT monitor course covers non-warranty repair and maintenance of the Propaq LT (802LT) series monitor and charging cradle. The course includes both lecture and hands-on service training. You will learn essential product configuration, theory of operation, assembly, and test details. Topics covered include:

- System-level (modular) overview
- PC Configuration Utility - user settings
- Modular troubleshooting
- Assembly/Repair module replacement
- Troubleshooting Lab
- Functional testing
- Reporting Complaints and Service Data to Welch Allyn, New Product Warranty, Part numbers, Service Tools and Instruments.

Class materials provided include the Propaq LT Service Manual and PC Configuration Utility

Attendees should have working knowledge of microprocessor-based medical electronics servicing and analog and digital electronics theory.



Technical Training Course Descriptions

Basic CardioPerfect Workstation & Administration Training

Welch Allyn's two day CPWS course delivers instruction, hands on training, and practical testing of your mastery of processes described in the latest Service Manual, Technical Service Bulletins, and Directions for Use (DFU.)

Content includes but is not limited to:

- CardioPerfect Workstation Overview
- Software Installation
- System Log-In Methods
- Equipment connection and verification. (Devices include: the ECG Recorder, Spirometer, ABPM, and Treadmill)
- Treadmill and Stress ECG
- System Administrator Tool
- Tutorial CD
- Reporting Complaints and Service Data to Welch Allyn, New Product Warranty, Part numbers, Service Tools and Instruments.

CardioPerfect Workstation System Database Management

The three day course is a continuation of the above class, adding the system and SQL Database management training along with the CP200 connectivity.

Content includes but is not limited to:

- Installing CPWS on a network server
- Connecting client workstations to the server
- Database Replication
- SQL Database Builder
- Telemedicine
- CP200 Connectivity
- Reporting Complaints and Service Data to Welch Allyn, New Product Warranty, Part numbers, Service Tools and Instruments.

CP-100 and CP-200 Electrocardiographs Service and Repair Training Course

Welch Allyn's two day course delivers instruction, hands on training, and practical testing of your mastery of processes described in the latest Service Manual, Technical Service Bulletins, and Directions for Use (DFU.)

Content includes but is not limited to:

- Configuration and Operation
- Disassembly and Assembly
- Service Requirements and related technical information
- Service Tests
- Configuration Files
- How to perform a Full Functional Test
- Replacing Field Replaceable Parts
- Reporting Complaints and Service Data to Welch Allyn, New Product Warranty, Part numbers, Service Tools and Instruments.

Experience in Electronics, or Bio-Medical Engineering, or practical experience servicing electrocardiograph machines is helpful.



Technical Training Course Descriptions

CVSM Monitor - Service Repair Training

Welch Allyn's two day CVSM (VSM 6000) monitor course covers the warranty and non-warranty repair and maintenance of the CVSM monitor. The course includes both lecture and hands-on service training. You will learn essential product configuration, theory of operation, assembly, and test details. Topics covered include:

- System-level (modular) theory of operation
- Product disassembly / reassembly techniques
- Parts replacement procedures
- Modular and Remote Troubleshooting Lab (Customers will perform troubleshooting and repair on non-functioning units)
- Functional Test and Calibration procedures
- Reporting Complaints and Service Data to Welch Allyn, New Product Warranty, Part numbers, Service Tools and Instruments.
- Students who successfully complete the course will receive the Gold License for the Service Tool Software

Class materials provided include CVSM Service Manual and Gold Level Service Tool License (for performing Calibration)

Attendees should have working knowledge of microprocessor-based medical electronics servicing and analog and digital electronics theory.

VSM 300 Series Monitor - Service Repair Training

Welch Allyn's two day VSM 300 Series monitor course covers the non-warranty repair and maintenance of the VSM 53000 product line. The course includes both lecture and hands-on service training. You will learn essential product configuration, theory of operation, assembly, and test details. Topics covered include:

- System-level (modular) theory of operation
- Product assembly techniques
- Parts replacement
- Modular troubleshooting Lab (Customers will perform troubleshooting and repair on non-functioning units)
- Functional Test and NIBP Characterization procedures (no calibration required)
- Reporting Complaints and Service Data to Welch Allyn, New Product Warranty, Part numbers, Service Tools and Instruments.
- Students who successfully complete the course will receive the VSM 300 Series Customer Service Tool Software

Class materials provided include VSM 300 Series Service Manual and the VSM 300 Series Customer Service Tool Software

Attendees should have working knowledge of microprocessor-based medical electronics servicing and analog and digital electronics theory.

Propaq 200 Series Monitor - Service Repair Training

Welch Allyn's two day Propaq monitor course covers non-warranty repair and maintenance of the Encore 200 Series, and Propaq CS product lines. The course includes both lecture and hands-on service training. You will learn essential product configuration, theory of operation, assembly, and test details. Topics covered include:

- System-level (modular) theory of operation
- Product assembly techniques
- Parts replacement
- Modular troubleshooting Lab (Customers will perform troubleshooting and repair on non-functioning units)
- Test and calibration procedures

Class materials provided include Propaq Encore and Propaq CS Service Manuals

Attendees should have working knowledge of microprocessor-based medical electronics servicing and analog and digital electronics theory.



Technical Training Course Descriptions

[SPOT Vital Signs 4200 Series Service and Repair Training Course](#)

Welch Allyn's one day course covers non-warranty repair and maintenance of the Spot 4200 series monitor. The course includes both lecture and hands-on service training. You will learn essential product configuration, theory of operation, assembly, and test details. Topics covered include:

- Operation, controls, configuration,
- Service Intervals, Error Codes, Functional Testing procedures, troubleshooting, internal configuration mode,
- Re-Calibration, Service Work Checklist, Disassembly/Reassembly
- Systems: NIBP (Non-Invasive Blood Pressure), Thermometry, SPO2 (Masimo/Nellcor)
- Reporting Complaints and Service Data to Welch Allyn, New Product Warranty, Part numbers, Service Tools and Instruments.
- Students who successfully complete the course will receive the Spot repair software tool.

Experience in Electronics, or Bio-Medical Engineering, or practical experience servicing electronic vital signs monitors is helpful.

[SPOT Vital Signs LXi, 4500 Series Service and Repair Training Course](#)

Welch Allyn's two day course covers non-warranty repair and maintenance of the Spot LXi 4500 series monitor. The course includes both lecture and hands-on service training. You will learn essential product configuration, theory of operation, assembly, and test details. Topics covered include:

- Operation, controls, Initial Configuration, Printing, barcode scanning
- Connectivity Options
- Service Intervals, Error Codes, Functional Testing procedures, troubleshooting, internal configuration mode,
- Re-Calibration, Service Work Checklist, Disassembly/Reassembly
- SURE PB Technology, Thermometry (Sure Temp Plus and Braun ThermoScan Pro 4000), SPO2 (Masimo/Nellcor),
- Modular and Remote Troubleshooting Lab (Customers will perform troubleshooting and repair on non-functioning units)
- Reporting Complaints and Service Data to Welch Allyn, New Product Warranty, Part numbers, Service Tools and Instruments.
- Students who successfully complete the course will receive the Spot Lxi service software tool

Experience in Electronics, or Bio-Medical Engineering, or practical experience servicing electronic vital signs monitors is helpful.



Technical Training Course Descriptions

On-Line Training Course Descriptions

Connex® Vital Signs Monitor - Service Repair Training

Welch Allyn's On-Line Self-Paced CVSM (VSM 6000) monitor course covers the warranty and non-warranty repair and maintenance of the CVSM monitor.

The course is designed in two parts and comprises 10 training modules. After the student successfully completes modules 1 through 9, the student will receive the Gold License for their Service Tool delivered with their monitor.

For part two of the training, the student will activate their Gold License and perform a Functional Test on one of their CVSM Monitors.

The 10 training modules cover the following materials:

- Module 1 – Course Overview
- Module 2 – CVSM Product Overview
- Module 3 – User and Service Menus
- Module 4 – CVSM Service Tool and Remote Access
- Module 5 – Troubleshooting
- Module 6 – Disassembly / Re-assembly
- Module 7 – CVSM Functional Test
- Module 8 – Course Test
- Module 9 – Summary
- Part Two – Hands-On Functional Test

Class materials provided include links to the CVSM Service Manual, DFU, and Service Materials. Also includes the Gold Level License for the Service Tool (The Gold license activates the ability for performing Calibration on CVSM Monitors)

Attendees should have working knowledge of microprocessor-based medical electronics servicing and analog and digital electronics theory.

Connex® ProBP3400 Monitor - Service Repair Training

Welch Allyn's On-Line Self-Paced ProBP3400 monitor course covers the Functional Test and maintenance of the ProBP3400 monitor.

The course is designed in two parts and comprises 10 training modules. After the student successfully completes modules 1 through 9, the student will receive the Gold License for their Service Tool delivered with their monitor.

For part two of the training, the student will activate their Gold License and perform a Functional Test on one of their ProBP3400 Monitors.

The 10 training modules cover the following materials:

- Module 1 – Course Overview
- Module 2 – ProBP3400 Product Overview
- Module 3 – User and Service Menus
- Module 4 – ProBP3400 Service Tool and Remote Access
- Module 5 – Troubleshooting
- Module 6 – Disassembly / Re-assembly ([Future Training Module](#))
- Module 7 – ProBP3400 Functional Test
- Module 8 – Course Test
- Module 9 – Summary
- Part Two – Hands-On Functional Test

Class materials provided include links to the ProBP3400 Service Manual, DFU, and Service Materials. Also includes the Gold Level License for the Service Tool (The Gold license activates the ability for performing Calibration and additional tests for the ProBP3400 Monitors)

Attendees should have working knowledge of microprocessor-based medical electronics servicing and analog and digital electronics theory.



Technical Training Course Descriptions

[CP50 ECG Resting Electrocardiograph - Service Repair Training](#)

Welch Allyn's On-Line Self-Paced CP50 ECG monitor course covers the Repair, Functional Test, and maintenance of the CP50 ECG monitor.

The course contains the following modules 1 through 8 and covers the following materials:

- Module 1 – Course Overview
- Module 2 – CP50 Product Overview
- Module 3 – Disassembly / Re-assembly
- Module 4 – Troubleshooting
- Module 5 – CP50 Functional Verification
- Module 6 – Software Operations
- Module 7 – Course Test
- Module 8 – Summary

Class materials provided include links to the CP50 Service Manual, DFU, and Service Materials.

Attendees should have working knowledge of microprocessor-based medical electronics servicing and analog and digital electronics theory.

Note: The CP50 is only sold outside the US and Canada.

[VSM300 Monitor - Service Repair Training](#)

Welch Allyn's On-Line Self-Paced VSM300 monitor course covers the Repair, Functional Test, and maintenance of the VSM300 monitor.

The course is designed in two parts and comprises 10 training modules. After the student successfully completes modules 1 through 9, the student will receive the VSM300 Service Tool.

For part two of the training, the student will install the VSM300 Service Tool and perform a Functional Test on one of their VSM300 Monitors.

The 10 training modules cover the following materials:

- Module 1 – Course Overview
- Module 2 – VSM300 Product Overview
- Module 3 – User and Service Menus
- Module 4 – VSM300 Service Tool
- Module 5 – Troubleshooting
- Module 6 – Disassembly / Re-assembly
- Module 7 – VSM300 Functional Test
- Module 8 – Course Test
- Module 9 – Summary
- Part Two – Hands-On Functional Test

Class materials provided include links to the VSM300 Service Manual, DFU, and Service Materials. Also includes the Service Tool Software (The Service Tool Software allow the software update and NIBP Characterization for Neonatal Blood Pressure.)

Attendees should have working knowledge of microprocessor-based medical electronics servicing and analog and digital electronics theory.



Technical Training Course Descriptions

Spot Vital Signs LXi - Service Repair Training

Welch Allyn's On-Line Self-Paced Spot Vital Signs LXi course covers the Repair, Functional Test, and maintenance of the Spot Vital Signs LXi device.

The course is designed in two parts and comprises 10 training modules. After the student successfully completes modules 1 through 9, the student will receive the Spot Vital Signs LXi Service Tool.

For part two of the training, the student will install the Spot Vital Signs LXi Service Tool and perform a Functional Test on one of their Spot Vital Signs LXi devices.

The 10 training modules cover the following materials:

- Module 1 – Course Overview
- Module 2 – Spot Vital Signs LXi Product Overview
- Module 3 – User and Service Menus
- Module 4 – Spot Vital Signs LXi Service Tool
- Module 5 – Troubleshooting
- Module 6 – Disassembly / Re-assembly
- Module 7 – Spot Vital Signs LXi Functional Test
- Module 8 – Course Test
- Module 9 – Summary
- Part Two – Hands-On Functional Test

Class materials provided include links to the Spot Vital Signs LXi Service Manual, DFU, and Service Materials. Also includes the Spot Vital Signs LXi Service Tool Software (The Service Tool Software allows Calibration and Functional Test of the Spot Vital Signs LXi device.)

Attendees should have working knowledge of microprocessor-based medical electronics servicing and analog and digital electronics theory.

Spot Vital Signs - Service Repair Training

Welch Allyn's On-Line Self-Paced Spot Vital Signs course covers the Repair, Functional Test, and maintenance of the Spot Vital Signs device.

The course is designed in two parts and comprises 10 training modules. After the student successfully completes modules 1 through 9, the student will receive the Spot Vital Signs Service Tool.

For part two of the training, the student will install the Spot Vital Signs Service Tool and perform a Functional Test on one of their Spot Vital Signs devices.

The 10 training modules cover the following materials:

- Module 1 – Course Overview
- Module 2 – Spot Vital Signs Product Overview
- Module 3 – User and Service Menus
- Module 4 – Spot Vital Signs Service Tool
- Module 5 – Troubleshooting
- Module 6 – Disassembly / Re-assembly
- Module 7 – Spot Vital Signs Functional Test
- Module 8 – Course Test
- Module 9 – Summary
- Part Two – Hands-On Functional Test

Class materials provided include links to the Spot Vital Signs Service Manual, DFU, and Service Materials. Also includes the Spot Vital Signs Service Tool Software (The Service Tool Software allows Calibration and Functional Test of the Spot Vital Signs device.)

Attendees should have working knowledge of microprocessor-based medical electronics servicing and analog and digital electronics theory.



Technical Training Course Descriptions

Propaq LT Monitor - Service Repair Training

Welch Allyn's On-Line Self-Paced Propaq LT Monitor course covers the Repair, Functional Test, and maintenance of the Propaq LT Monitor.

The course is designed in two parts and comprises 10 training modules. After the student successfully completes modules 1 through 9, the student will start Part Two of the training and perform the "Hands On" Functional Test.

For part two of the training, the student will perform a Functional Test on one of their Propaq LT Monitors.

The 10 training modules cover the following materials:

- Module 1 – Course Overview
- Module 2 – Propaq LT Product Overview
- Module 3 – User and Service Menus
- Module 4 – Propaq LT Configuration Tool
- Module 5 – Troubleshooting
- Module 6 – Disassembly / Re-assembly
- Module 7 – Propaq LT Monitor Functional Test
- Module 8 – Course Test
- Module 9 – Summary
- Part Two – Hands-On Functional Test

Class materials provided include links to the Propaq LT Service Manual, DFU, and Service Materials. Also includes the Propaq LT Configuration Tool

Attendees should have working knowledge of microprocessor-based medical electronics servicing and analog and digital electronics theory.