LabChart Training Course
Acquisition & Analysis for Cardiovascular Research

ADINSTRUMENTS

Course Overview

This course will ensure that you are using LabChart to its maximum potential in your cardiovascular research. As well as receiving advice on the best LabChart set-up for your specific measurements, you will also learn about and experience the wide range of specialised LabChart analysis features that have evolved in response to feedback from customers working in cardiovascular research. These include determining relevant intervals from signal averaged ECGs, looking at the variability of R-R intervals and extracting various parameters from arterial and ventricular pressure signals.

ADInstruments staff with experience in cardiovascular research will provide extensive instruction and guide you though a series of exercises using relevant data files to consolidate your learning. You will have access to your own computer and hardware terminal, and the guaranteed small group numbers mean you will have the opportunity to discuss your experimental set-ups' specific requirements with our staff, who will ensure that you receive the level of attention you require.

Who should attend?

This course is useful for all scientists who wish to understand and better utilise the potential of LabChart for displaying and analysing cardiovascular data. It will also suit researchers who may be interested in developing the range of cardiovascular parameters they measure, and those who wish to learn more about specific analysis Modules.

You should have some experience with PowerLab systems and LabChart software, ideally equivalent to our LabChart Level I and II training courses.

Learning Outcomes

At the end of this training course you will be able to:

- Use LabChart tools designed to increase accuracy when recording cardiovascular signals
- Make use of relevant formatting, display and processing features in LabChart
- Understand and use the specialised recording and analysis Extensions and Modules

Course Agenda

Measuring Cardiovascular Signals

- An overview of commonly measured cardiovascular waveforms including ECG, BP, blood flow and left ventricular pressure and volume
- Selecting the correct LabChart settings for cardiovascular measurements

LabChart Features for Cardiovascular Signals

- Display features including XY View for pressure-volume loops and Scope View for SAECG
- Cyclic Measurements including detection customisation for your waveform
- Waveform processing functions including Filters and Derivative
- Data extraction for further analysis
- Available Extensions including Multipoint Calibration, Export to PVAN and Event Manager

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Course Agenda (continued)

ECG Analysis Module

- When to use the ECG Analysis Module
- Creating the correct settings for your ECG signal
- Using the Beat Classifier to exclude artefacts or determine arrhythmias
- Assessing PQRST parameters in SAECG
- Plots and channel display functions, table options and exporting your data

HRV Module

- When to use the HRV Module
- Creating the correct settings for your signal type
- Assessing ectopic beats and artefacts and removing them from analysis
- HRV Plot and Report overview
- Using the Frequency Spectrum to assess sympathetic/parasympathetic control of heart rate
- Adding parameters to Data Pad and export options.

Blood Pressure Module

- When to use the Blood Pressure Module
- Creating the correct settings for your signal type
- Selecting relevant waveforms to include in your analysis
- Select measurements for pressure type including mean BP and contractility for arterial and DP/DT and Tau for ventricular pressure
- Channel display functions, table options and exporting your data

Peak Analysis Module

- Relevant cardiovascular waveforms analysed in the Peak Analysis Module
- Creating the correct settings for your signal type
- Assessing relevant parameters to extract including resting membrane potential and action potential amplitude
- Channel display functions, table options and exporting your data

Improve LabChart Functionality

- Finding relevant LabChart Extensions and Modules in the Feature Manager