



LabVantage Training Course Catalog

LabVantage strives to provide leading-edge technology, best-in-class solutions, and unparalleled educational programs for getting the most value from your investment. One of the largest contributors to the success of an enterprise solution is a well-rounded understanding of the software capabilities. Completing the appropriate training allows you to take full advantage of the broad range of powerful tools LabVantage provides. Avoid downstream complications by educating your users early on in the process. This document describes the various courses offered by LabVantage educational services. These courses are designed for LabVantage version 8. Other classes that are specific for other versions of the software can be delivered on request. These courses are open exclusively to existing customers of LabVantage Solutions and our partners. Information about our courses is subject to change without further notice. Please contact training@labvantage.com or visit <https://labvantage.com/training> for the most up-to-date information.

The Student Manual

Our training programs have been offered since 1992 giving us the opportunity to fine-tune the curriculum and include education for not only software operation but also best practices. Our courses are designed to deliver an understanding of how to use the application through theory, demonstrations, and hands-on practice. Each course has scripted exercises giving you valuable experience in the classroom and an example to follow once you have returned back to your workplace. Each of our LabVantage classes is lead by an experienced, professional instructor able to help you with your questions.

Virtual Classroom

If attending a training course in-person is a challenge due to travel or scheduling restrictions, LabVantage offers the option of attending a class remotely. Some classes are set up specifically for this type of environment. Using an internet connection and optionally a telephone for audio, you can participate in a fully interactive session with your course instructor and other learners.

e-Learning

LabVantage e-Learning modules provide you with the opportunity to gain an awareness of LabVantage terminology, LIMS sample life cycle process flow, and system navigation techniques to get you started with the basics or serve as a refresher. These scripted and edited recordings offer you the chance to progress at your own page without leaving your workplace.

Pricing

Participation in any classroom or virtual class entitles you to one printed copy of the student manual per student and access to the LabVantage software on the cloud during the class. The standard rate is USD\$800 per-student-per-day. Rates may vary by global region. Contact your sales representative to obtain a quote.



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101 – End User

This three-day course teaches you the basics of how to operate the LabVantage software using the LIMS site map. From logging a sample to managing a request and all process points in between, you will gain experience in using LabVantage to record and maintain your laboratory's vital data. As an end-user you will learn how to take advantage of the rich feature sets built into the solution allowing you to focus more on the science and less on the software. As an administrator, before you begin configuring or re-configuring your LabVantage application, you may want to understand how your end-users are going to interact with the software and the terminology used within. Working examples are provided during hands-on instruction.

Target Audience

This is an introductory level course with no knowledge of LabVantage software required. This course is intended for those who will need to understand the process flow of data through the application including but not limited to samples being logged, test results being entered, data being reviewed, and reports being issued.

1. **Overview:** What is LabVantage? How does it work? Connecting to the application. Universal interface features. Understanding security. Navigation techniques. Using the help system.
2. **Site Maps:** What features are available to different user groups? Where do I go to access these features? Who will be responsible for different types of administration? Using charts and graphs to prioritize work.
3. **Master Data:** How does LabVantage promote consistent record-keeping? What terminology does LabVantage use to represent different types of laboratory data? Understanding how the software promotes efficiency and precision through data harmonization.
4. **Sample Life Cycle:** How does LabVantage treat data as it flows from one process phase to the next? What is the status of a sample telling me? When does the data get locked to prevent further unauthorized changes? Utilizing various pages to record sample information, receive samples, enter test results, review for accuracy and approve data before releasing and disposing. Incoming samples can be stored in many different places. Banks of shelves, refrigerators, freezers, and incubators house many different samples. Assigning a location makes finding them a snap!
5. **Queries, Searches, and Reporting:** I know the data is in there, how do I retrieve it? Take advantage of the search bar, categories, folders, ad-hoc search, dashboards and system search to give you a picture of what is happening with your data. Just as important as putting data in, is getting data out. Learn how LabVantage incorporates various reports to show you your key performance indicators.
6. **Batches:** How do testing tasks get grouped and assigned to analysts? When manufacturing a finished product, how is the data structured to support genealogy? Learn how samples are grouped, tests are grouped and manufacturing stages are grouped to facilitate multiple business and laboratory practices.
7. **Request Management:** In what ways can I group samples together to keep track of them? Now that a group of samples is completed, what should happen next?
8. **Instruments and Analysts:** Keeping track of who performed a test using which instrument is important when it comes to audits, investigations, and reporting. Gain experience in recording instrument calibrations and analyst training.
9. **Consumables:** An important part of any laboratory test is keeping track of those substances that factor into the results obtained. This could include solutions that are purchased or mixed using raw materials to make standards for measuring samples of unknown concentration. Manage inventory of your stockroom supplies.
10. **Stability:** Evaluate the performance of your products over time. Execute work orders to pull samples from inventory and keep track of stability study progress.



101 - End User (continued)

Typical daily agenda

Day One	Day Two	Day Three
Overview	Performing Searches	Instruments and Analysts
Site Maps	Batches	Consumables
Master Data	Request Management	Stability
Sample Life Cycle		Review

The Materials

Recognizing that every student has a different learning style, LabVantage provides this professionally bound manual to benefit all students especially those who are tactile learners. The student manual consists of 314 pages of indexed chapters each having a table of contents for your reference. The manual provides a printed version of each slide used by the instructor during the presentation, along with prepared notes for your reference after the course. This workbook has color prints for the exercises leading you through examples of how to make the best use of LabVantage.



122 – Administration

A four-day course tailored for administrators. You will learn how to create master data and configure LabVantage to suit the data management needs of your company. As a data architect, you will gain hands-on experience in building: tests to include parameters; parameter lists; calculations and units; limits such as detection limits and specifications; approvals and approval types; schedule plans; instruments and analysts certifications. You will also learn how to perform some application administration such as configuring user security, creating dashboards, changing the table structure and web page design.

Target Audience

The LabVantage application has features that can be broadly divided among three user groups: Application Administration, Laboratory Administration, and daily lab operations. This course addresses two of those user groups: Laboratory Administrators and Application Administrators. This class is the foundation for understanding other administrator-level topics such as report design, web page design, workflow design and other administration concerns specific to your chosen modules.

1. **Overview:** What is the component architecture of LabVantage? How do I start JBoss as a service? Accessing the server and application logs and managing them through the LabVantage application. The LabVantage console, how to log in and use its basic functionality.
2. **User Security:** Data security concepts of LabVantage. How to enable and configure departmental security for shielding data. Restricting access to modules. Understanding the role-based security module. Restricting access to web pages and functionality. Grouping roles together using job types and assigning job types to users.
3. **Parameters, Parameter Lists, and Test Methods:** Gain experience in constructing your laboratory's master data to model the types of tests you perform on your samples.
4. **Tests:** Configure your test methods to handle calculation functions, rounding, unit conversions, detection limits, and manual data review requirements.
5. **Specifications:** Establish your quality control pass/fail limits to have LabVantage flag the results when they do not meet your criteria.
6. **Quality Management:** Set up Sampling Plans for manufacturing of products to pre-define sampling and testing requirements for quality control of batches and samples.
7. **Instruments and Analysts:** Identify the instruments that your laboratory uses as well as the calibration and maintenance intervals to make sure preventative maintenance and certifications are performed at the required intervals. Use work orders to demonstrate instrument suitability.
8. **Queries, Reports and Searches:** Design filters for data your users want to see on various web pages. Administer ad-hoc queries. Register and manage reports. Run a configuration report to document and compare configuration between systems.
9. **Policies:** Store and persist global configuration properties within LabVantage to control the behavior of your LIMS.
10. **Reference Types and SDCs:** Creating reference lists to be used for result entry or for property setting. Understanding the System Data Collections and learn how to enhance your installation with user defined columns and reference types.
11. **Event Plans:** Add business logic to your system which can automate tasks as a result of some change to your data.
12. **Export Import:** Using the configuration transfer tool for the export of data from one database to facilitate the import into another LV database. Learn how to define a Data File Definition to load data from an Excel[®] or CSV file into LabVantage.



122 – Administration (continued)

13. **Scheduler:** Define schedule plans automating the creation of samples and assignment of tests based upon a sample collection frequency that you establish. Identify different sampling points and sample sources. See how work orders are generated for sample collection, and completion. Schedule other tasks for completion even if the tasks are not related to pulling and testing samples.
14. **Web Page Designer:** An introduction to the LabVantage Web Page Designer studio which allows you to create and modify web pages used within LabVantage.
15. **Dashboards:** Understand the dashboard, learn how to create new gizmos and make them available for the user to add to his own dashboard. Learn to understand the different types of gizmos and how each gizmo type has its own way of representing data.

Typical daily agenda

Day One	Day Two	Day Three	Day Four
Overview JBoss Security Parameters and Parameter lists Test Methods	Specifications Quality Management Qualification of Resources Queries	Policies Reference Types and SDCs Event Plans Export and Import	Scheduler Web Page Designer Dashboard Review

The Materials

Recognizing that every student has a different learning style, LabVantage provides this professionally bound manual to benefit all students especially those who are tactile learners. The student manual consists of 504 pages of indexed chapters each having a table of contents for your reference. The manual provides a printed version of each slide used by the instructor during the presentation, along with prepared notes for your reference after the course. This workbook has color prints for the exercises leading you through examples of how to make the best use of LabVantage.



130 - BioBanking

This two-day course will show you how to configure and operate the LabVantage BioBanking module. It begins with instruction on the basic security concepts that are the foundation of LabVantage's BioBanking solution. You will learn how to create master data, controlled vocabulary, storage locations and more. Options are presented for using advanced storage and logistics (ASL), kits, protocol, and ad-hoc queries. Scripted hands-on exercises provide working examples of how samples can be allocated for a study, accessioned with required information, tracked as an aliquot and inventoried.

Target Audience

The BioBanking module offered by LabVantage is an extension of the core LIMS software. Topics presented will be of interest to end users and administrators alike. Administration of the BioBanking module is the primary focus of the first day. Day two will show how to perform laboratory operations executed by the end users. Those who are responsible for administration of the BioBanking solution should complete the *121-Administration* course or *101-End User* for a full understanding of the features available in addition to this module.

1. **Introduction:** In what ways does the BioBanking module extend core LabVantage? How does this change the way I work with LabVantage? What is a Custodial Domain and how does that affect me? Establishing user security for BioBanking.
2. **Studies:** What is a BioBanking study? Controlling the behavior of a study. Create a study.
3. **Master Data:** How do sample types affect the behavior of the BioBanking module when samples are processed in the lab? Defining Preparation Type, Treatment Types, Collections Methods, Container Types, and Assay Types as a laboratory administrator.
4. **Controlled Vocabulary:** What is an ontology? How do we make sure everyone in our laboratory is accessioning or cataloging our samples using the same language including diagnosis, tissue types, organs, metastasis, and species?
5. **Sample Allocation:** Beginning the life cycle of a sample. Before collecting and labeling samples, you might define what types and how many samples you intend to collect for a study.
6. **Storage:** Before receiving a sample, you should define where the samples will be stored including the environmental conditions.
7. **ASL:** Advanced Storage and Logistics demonstrates how to configure freeze-thaw tracking, set up and track shipments of samples, use the TISM page, and apply advanced storage rules.
8. **Sample Receipt:** When a physical sample is brought to the lab, it will be checked into a location and assigned a custodial domain. Learn how to complete this second phase of a sample's lifecycle.
9. **Accessioning:** Before accepting a sample into a study, certain pieces of information need to be recorded and reviewed. Using master data and controlled vocabulary learn how to catalog the sample.
10. **Lab Operations:** Now that a sample has been approved for use in a study, the next step is to aliquot or divide, create a derivative or pool, add tests and enter results, and keep track of inventory.
11. **Ad Hoc Queries:** Entering data into the system is one thing. Mining the database to find it again or consolidate it is another matter. Learn how to navigate the data structure and design searches to help you make intelligent decisions much faster.
12. **Kits:** This additional optional module allows you to keep track of the artifacts you use for sample collection and group them together. Examples are: syringes, vials, swabs, cups and other containers.
13. **Protocol:** When a clinical trial is executed, it is important to keep track of participants or subjects, hospital visits or collection time points, and to maintain control over the plan. This additional optional module allows you to maintain this organizational data in LabVantage BioBanking.



130 - BioBanking (continued)

Typical daily agenda

Day One	Day Two
Introduction	ASL
Studies	Sample Receipt
Master Data	Accessioning
Controlled Vocabulary	Lab Operations
Sample Allocation	Ad Hoc Queries
Storage	Kits and Protocols

The Materials

Recognizing that every student has a different learning style, LabVantage provides this professionally bound manual to benefit all students especially those who are tactile learners. The student manual consists of 284 pages of indexed chapters each having a table of contents for your reference. The manual provides a printed version of each slide used by the instructor during the presentation, along with prepared notes for your reference after the course. There is an entire printed page for each slide making it easy for you to follow along and take notes with the lectures. This workbook has color prints for the exercises leading you through examples of how to make the best use of the BioBanking module.



140 – eForms

LabVantage provides a solution to satisfy the requirements of any application that must collect and process data in a way that resembles existing paper-based systems. This will include an interface with integrated features that allow easy configuration of complex client-side tasks, such as validation and dynamic display, without using JavaScript or other specialized programming. There are special forms that bind to database records and provide features such as immediate data quality evaluations, automatic sample lifecycle processing, and integration with other modules. These features can be broadly grouped into one of three different categories: Data Submission, Document Capture, and Electronic Notebook. This two-day course will lead you through the development of simple to complex forms.

Target Audience

The eForms module is an extension to the core LabVantage feature sets. Although learning to design eForms does not require an understanding of the core application, it is certainly helpful for all students to have completed other courses or have a working knowledge of LabVantage prior to taking on this subject matter. This course is intended for those who will design, program, and implement various types of eForms.

1. **Using a Simple eForm to Create a Document:** Getting started with eForms. Understanding the basic concepts. Creating fields. Basic page layout considerations.
2. **Advanced Form Design Considerations:** Dynamic field properties and forms. Using sections, pages and groups. Simple field data validation.
3. **Group Attributes and Data Validation:** Using checkboxes, radio buttons, understand how simple declarative and complex Groovy validations can be implemented on a form.
4. **Approvals, Annotations and Follow-Ups:** Now that a form has been completed, what kind of data reviews and workflows can be carried out?
5. **Double Data Entry:** Some data is too important to be left open to one person's interpretation. Learn how to require more than one transcription from paper and how to reconcile the differences.
6. **Fields and Formlets:** Rather than redefining the same components on many different forms, fields and formlets can be used. This is necessary if Ad Hoc queries are to be used.
7. **Ad Hoc Queries on Document Fields:** Capturing data as a document may not make it easy to mine that information. Learn how LabVantage eForms and the Ad Hoc Query tool work together to simplify your search for intelligence within your database.
8. **Simple Worksheet Setup:** Electronic notebook applications allow you to avoid the collection of data on paper and the subsequent need to store that paper. A worksheet is a specialized type of eForm used to address this need.
9. **Multiple-Item Worksheets:** Often, more than one data point is captured on a single page or worksheet. LabVantage eForms support the streamlining of data capture by processing multiple items at once.

The Materials

Recognizing that every student has a different learning style, LabVantage provides this professionally bound manual to benefit all students especially those who are tactile learners. The student manual consists of 167 pages providing a printed version of each slide used by the instructor during the presentation, along with prepared notes for your reference after the course. This workbook has color prints for the exercises leading you through examples of how to make the best use of LabVantage eForms.



150 – Stability

The Stability module is an extension to the core LabVantage application. In this course you will learn how to create a long-term study beginning with a plan. You will learn how to execute and complete the plan. Scripted exercises demonstrate how to evaluate product performance when samples have been exposed to different environmental conditions. Inventory setup and maintenance is included.

Prerequisites and Target Audience

This half-day LabVantage Stability module training course is normally offered as an additional option to extend an onsite training event. This is not a stand-alone course. If an introduction to the general aspects of using LabVantage is required, other program offerings such as 101-End User should be completed prior to this subject matter. Students should already be familiar with how studies are executed in their organization. Stability Coordinators and analysts alike will benefit from this class.

1. **Static Data:** Creation of data that presumably does not change during the stability study. This includes products, storage locations, packaging containers, environmental conditions, inventory tracking practices, and protocols.
2. **Studies:** Configuring the options for protocol templates, protocols, and individual studies.
3. **Protocol:** Setting up the protocol to include frequency of testing intervals and environmental storage parameters.
4. **Stability Work Orders:** Executing the time points and managing inventory through completion of a work order.
5. **Navigators:** Understanding how the navigators help track the progress of the study.
6. **Study Completion:** After the time points and conditions have been completed, the study can be reviewed and completed.
7. **Study Suites:** Grouping of stability studies under a common umbrella.
8. **Storage Unit Types:** Configuration of LabVantage to reflect the physical layout of a freezer, humidity chamber, warehouse shelf or other structure.
9. **Advanced Study Management:** Managing inventory and testing frequency based on the number and types of tests that need to be performed.
10. **Calendar Maintenance and Planning:** Using the planning tools in LabVantage.

The Materials

Recognizing that every student has a different learning style, LabVantage provides this professionally bound manual to benefit all students especially those who are tactile learners. The student manual consists of 108 pages providing a printed version of each slide used by the instructor during the presentation, along with prepared notes for your reference after the course. This workbook has color prints for the exercises leading you through examples of how to make the best use of LabVantage Stability.



170 – Electronic Laboratory Notebook

Eliminate paper notebooks with the LabVantage Electronic Laboratory Notebook (ELN) and Laboratory Execution System (LES) modular extensions to LabVantage. Capture, organize, manage and collaborate experiments and test execution sequences across your organization with ease. Replace your paper lab notebooks and paper method worksheets with confidence by leveraging features designed to increase productivity while reducing errors. The LabVantage ELN and LES are fully embedded in LabVantage LIMS to provide a comprehensive and integrated lab automation solution.

Prerequisites and Target Audience

This two-day course is tailored for LabVantage 8 ELN/LES administrators. Students should complete *122 – Administration* before enrolling in this course.

1. **Introduction:** An overview and demonstration of the ELN and LES modules. How workbooks are utilized to organize worksheets. A look at the worksheet manager which provides the user interface for managing worksheets. Search for content of worksheets using an ad-hoc query tool.
2. **ELN Overview:** Geared toward ELN end users. A detailed look at the creation of an ELN worksheet to record an experiment. The worksheet will utilize “Sections” for organization of the added content, and “Controls” to provide specific functionality, such as rich text editing, working with spreadsheets, equipment and reagent management, data entry, trending, chemical viewing, viewing details of an SDI (e.g. sample), etc.
3. **LES Overview:** Geared toward LES end users. A detailed look at the creation of an LES worksheet using a predefined global template for organization of content defined within the test method.
4. **ELN and LES Advanced Configuration:** Geared toward ELN/LES administrators. This section will cover numerous topics related to administering the ELN/LES modules, such as: ELN Policy, worksheet export options, managing control and worksheet templates, and assigning user privileges related to worksheets.
5. **Advanced Configuration of Control:** Geared toward ELN/LES administrators. A detailed look at the advanced configuration properties for the various ELN and LES controls.



181 – Jaspersoft Reporting for LabVantage

Learn how to design a new report or modify an existing example report using Studio® from TIBCO Jaspersoft. LabVantage offers several different options when it comes to creating your report output. This 2-day developer's class includes instruction for how to configure and use the Studio design tool. You will then deploy your report using LabVantage. Additionally, you will learn some of the concepts surrounding the LabVantage version 8 data model.

Prerequisites and Target Audience

Students need to possess a basic understanding of SQL (structured query language) and know basic relational database theory. A working knowledge of LabVantage LIMS is expected. Completion of *122-Administration* is suggested. This is a developer-level course. Students should be comfortable using developer tools and have access to the System Admin menus in LabVantage.

1. **Installing and Configuring Studio:** Getting started with the Jaspersoft Studio designer tool requires some installation steps. This chapter shows you what is required to install and configure Studio for use with a LabVantage database.
2. **Creating Your First Report Using the Wizard:** With Studio, a basic simple report is easy to create using the wizard.
3. **Basic Report Developer Features:** Looking at the Studio developer interface, the features might not seem obvious at first. But before you know it, this will become second-nature.
4. **Datasets, Queries, Parameters and Variables:** Designing a report means you need to anticipate what the user will want to see as output and what kind of input they will give you to use as a filter.
5. **Report Display Types:** What will be the overall layout for your report? Is it a chart or a graph? Will you include summary data along with the details? Maybe include a subreport? How often will columns wrap on one page?
6. **Elements:** Adding lines, rectangles, barcodes and other report elements increases the usability and acceptance of your design.
7. **Charting:** Learn the tricks to adding pie, bar, line and other charts to your report.
8. **Installing a Report in LabVantage:** Now that your report is perfect, you want people to be able to execute your report. With LabVantage's built in Jasper Reports Server, all you have to do now is register the report in the LabVantage application and your users can see the output in their browser!
9. **Running a Report from a Button:** Executing a report from LabVantage can be as simple as clicking a button. Learn how to add a button using the LabVantage Web Page Designer so that the button will call your report.
10. **Reports with Parameters:** Some reports require input from the user. This establishes the criteria for the data on the report such as a date range or a record identifier. Here, you will learn how to configure the report to accept this input, configure LabVantage to prompt the user for this input, and pass the user's response to your prompt from LabVantage to the reports server.
11. **Report Events:** Some reports generate output that is used to make important business decisions. These types of reports contain data that, if changed, could have an impact on further downstream processes. Learn how LabVantage can track the execution of a report to include a possible reprint.
12. **Advanced Crosstab and Subreports:** Report output is often desired in a grid fashion with column headers and row headers resulting in a datapoint being displayed as an intersection. Subreports are another way to establish a query that uses the data from another query as criteria.



181 - Jaspersoft Reporting for LabVantage (continued)

Typical daily agenda

Day One	Day Two
Installing and Configuring Studio	Charting
Using the Wizard	Installing a Report in LabVantage
Developer Interface	Running a Report from a Button
Datasets, Queries, Parameters, and Variables	Reports with Parameters
Display Types	Report Events
Elements	Crosstab and Subreports

The Materials

Recognizing that every student has a different learning style, LabVantage provides this professionally bound manual to benefit all students especially those who are tactile learners. The student manual consists of 174 pages providing a printed version of each slide used by the instructor during the presentation, along with prepared notes for your reference after the course. There is an entire printed page for each slide making it easy for you to follow along and take notes with the lectures. This workbook has color prints for the exercises leading you through examples of how to make the best use of LabVantage.



211 – Web Page Designer

Included in the LabVantage toolkit is the ability to modify the page configurations supplied by the LabVantage application. With an additional license (Web Page Designer Pro), you can create new pages and other design elements. This three-day course will teach you how to use the full Web Page Designer suite. The class builds upon the fundamental concepts presented in the LabVantage Administration course. You will learn how to: create a new page, design a custom gizmo, page type, element and button, add dynamic lookup pages, work with JavaScript, take advantage of the LabVantage API, and use Groovy for conditional formatting.

Prerequisites and Target Audience

This course is beneficial to application administrators who will make changes to the LabVantage user interface appearance and functionality. Completion of *122-Administration* is required for full application administration. For programmers or developers who will only modify the interface and work with the API, there are no prerequisites for this course.

1. **Introduction:** Understanding the components of the Web Page Designer Studio.
2. **List Page:** One of the most often used types of pages in LabVantage is a list page. Learn how to create one or modify one to retrieve records from the database.
3. **Advanced Toolbar:** Operations that the user needs to perform are represented as buttons in the toolbar. Learn how to create buttons and control their behavior.
4. **Maintenance Page:** Using the Quick Page Creation Wizard, employing a page type, adjusting the layout, adding a toolbar, using pseudocolumns, and calling a maintenance page from a list page.
5. **Lookup Pages:** When creating associations between records of different tables, lookup pages assist the user in making the link. This includes filtered lookups, queries, and dynamic lookups.
6. **Gizmos:** To promote a consistent user experience, gizmos are used to present different navigation options or helpful links across all pages. Creating gizmos to control the top bar and the side bar as well as the site maps, tabs, and menu choices. Dashboard, image map gizmos and more.
7. **Data Entry Page:** Configure the associated views, visual policies, toolbars, details, and filtering. Learn what properties are available to configure your data entry pages.
8. **Security and Electronic Signature:** Some agencies require an electronic signature for secure and traceable record keeping. Some activities should only be executed by privileged users. Learn how to enable or disable these options.
9. **Page Group and Style:** Learn how to create forms with multiple sections, tabs, or grid layouts giving a natural flow your pages and the fields.
10. **Nested Selects:** In some cases, it is desirable to perform a sub-select on a page to display summary data instead of pulling data from a column. Your web page might benefit from this design.
11. **Elements:** Pages include various elements which provide a defined set of functionalities to the page. Understand how elements can be added to a page and some commonly used elements with their associated properties.
12. **Actions:** LabVantage Actions are discrete program modules that perform a specific purpose. They are coded using Java. LabVantage has a library of 290+ standard actions, with APIs for creation of user defined actions. Learn the basics of how to take advantage of this code library.
13. **JavaScript:** What is it? When can it be used? The LabVantage JavaScript API. Using JavaScript for validation. Coding a button for a JavaScript function.
14. **Using Groovy in LabVantage:** Groovy is an agile dynamic object-oriented language for the Java platform combining features from languages like: Python, Ruby and Smalltalk, making them available to Java developers using Java-like syntax. LabVantage web pages allow Groovy code to be inserted and used. Common uses for Groovy include the ability to import a java class or program for conditional processing.



211 –Web Page Designer (continued)

Typical daily agenda

Day One	Day Two	Day Three
Introduction	Gizmos	Elements
List Pages	Data Entry Page	Actions
Advanced Toolbar	Security and eSig	JavaScript
Maintenance Pages	Page Group and Style	Groovy
Lookup Pages	Nested Selects	

The Materials

Recognizing that every student has a different learning style, LabVantage provides this professionally bound manual to benefit all students especially those who are tactile learners. The student manual consists of 326 pages of indexed chapters each having a table of contents for your reference. The manual provides a printed version of each slide used by the instructor during the presentation, along with prepared notes for your reference after the course. This workbook has color prints for the exercises leading you through examples of how to make the best use of LabVantage.



220 – Workflow Administration

This two-day LabVantage Workflow designer course gives you the knowledge needed to develop and deploy Workflows. Through a series of lessons and hands-on exercises, this course explores the types and uses of variables, transition statements, queue selectors and many other workflow tools. You will learn how to create and configure steps and tasks in combination with Workflow modifications and other features. Scripted exercises give examples of how to leverage the tools to create a variety of responsive flowcharts and tasks to suit your own environment. Additional topics include assignment, security, and administrator tools and tips.

Prerequisites and Target Audience

Courses LabVantage 122-Administrator or 211-Web Page Designer training must be completed prior to participating in *Workflow Administration*. Alternatively, participants should have a minimum of six months working experience as a LabVantage administrator within a production environment. This is our most advanced level of training as it incorporates your knowledge of LabVantage data processing, eForms, Actions, and page design to develop wizards that lead users through a process.

1. **Introduction to Workflows:** What is Workflow? What are its components? Understand the concepts of workflow behavior and the differences in how administrators and end-users access and use Workflows.
2. **Building & Using a Workflow:** How do I build a workflow? Learn the concepts of building a basic workflow and then explore the different approaches for adding samples to Workflows; understand the use of event plans within a Workflow.
3. **Introduction to Tasks:** Tasks represent an individual defined procedure in the overall completion of a workflow and range in design from quite simple to very complex. To understand how to design tasks ranging in complexity, you will first learn how to define tasks and link a series of tasks together using input/output queues and connectors. Understand the purpose of utility tasks and they are used within a workflow and, how to define steps and modify list pages used within a task. Understand the concept of variables and the ways they are used to affect the behaviors of steps, tasks and workflows. Use action blocks to combine a series of actions into one database transaction. Finally, learn how to enhance task appearances and provide instructions or attachments for the benefit of your end-users.
4. **Introduction to Steps:** Now that you understand tasks, we'll go a level deeper and explore how Steps are used to present data or contain an action within a task. What's the difference between a Form step and an HTML step and when would I use these? What does a Converter step do? How would I use a Splitter step?
5. **Task & Workflow Set-up Variables:** You've built a number of core tasks and workflows and want to reuse them across different projects or lab sections. Using set-up variables, you'll learn how to quickly modify task and workflow behaviors without impacting workflows already in use in your production environment. You'll also learn how auto-executing and descendent tasks are influenced by set-up variables in addition to exploring more new steps introduced in this chapter.
6. **Workflow Executions:** Knowing how you will be using your workflow will determine the type of execution you assign to it during its creation. Learn about the three types of executions and best practices for each one.
7. **Working with Input Queues:** How important is an input queue within my task? Understand the difference applications of queue selectors vs auto-selection and, how event waits influence the behavior of the queue selector.



220 – Workflow Administration (continued)

8. **More Capabilities:** You've designed your workflow using tasks, steps, variables, events, and other features. Is it ready to use? How can I retrieve detailed information about a workflow when it's being used? You'll now explore the use of step tool bar buttons including the design and application of step specific buttons, use attachments within workflow, and discover how notes transfer between LIMS and workflows. Understand how steps can be used as stand-alone actions within LIMS, how a task can be cancelled or paused by your end-users and why this is useful. Finally, you will configure task and summary reports to provide task specific detailed information you and your end-users will find helpful.
9. **Assignment & Security:** How is work assigned within tasks? Is certification possible? How can I limit who has access to samples within a workflow? Discover the use of manual and auto-assignment, how to certify users and tasks and, departmental security concepts.
10. **Administrator Tools:** Just as your end-users have a variety of tools to help them work with their tasks and workflows, administrators also have a set of tools. We'll take an in-depth look at the workflow manager page and both the workflow and task operations tools for administrators.
11. **APIs:** Sometimes the out-of-box tools aren't quite enough when creating highly complex workflows. For those who prefer to write their own solutions, you will be given reference materials to aid in the writing of custom steps as JSPs, the workflow processor (Java API) and using the Groovy step. Note: This is an advanced developer chapter and the materials for this chapter are provided for your reference upon completion of the Workflow training. There is no formal instruction for this chapter.

Typical daily agenda

Day One	Day Two
Welcome & Overview	Task & Workflow Set-up Variables
Introduction to Workflow	Workflow Executions
Building & Using Workflows	Input Queues
Introduction to Tasks	More Capabilities
Introduction to Steps	Assignment, Security and Tools

The Materials

Recognizing that every student has a different learning style, LabVantage provides this professionally bound manual to benefit all students especially those who are tactile learners. The student manual consists of 334 pages of indexed chapters each having a table of contents for your reference. The manual provides a printed version of each slide used by the instructor during the presentation, along with prepared notes for your reference after the course. This workbook has color prints for the exercises leading you through examples of how to make the best use of LabVantage.



300 – LabVantage Pharma Familiarization

If you have purchased LabVantage's Pharma package, you will need an introduction to the software, the Pharma program, and the overall LIMS best practices. This four-day course will be delivered just before the project kick-off. The goal is to get you familiar with the program to streamline the use of time and efforts during project kickoff, the ensuing workshop, build testing, and end-user acceptance. Additional information about this curriculum may be found in your project's *Statement of Work (SOW)*.

Target Audience

System Owner, Project Manager, Subject Matter Experts (SME) and laboratory user personnel who will be helping to make decisions about and roll out your implementation. The daily schedule can be adjusted as necessary to deliver role-target education to different audiences.

1. **Overview:** What is LabVantage Pharma? What is delivered in the package? Universal interface features. Navigation techniques. Using the help system.
2. **User Security:** Security concepts of LabVantage. How to enable and configure departmental security for shielding data. Restricting access to modules, understanding the role based security module restricting the user access to pages and functionality. Grouping roles together using jobtypes and assigning jobtypes to users.
3. **Parameters, Parameter Lists, and Test Methods:** Gain experience in architecting your laboratory's master data making it conform to the types of tests you perform on your samples.
4. **Specifications:** Establish your quality control pass/fail limits to have LabVantage flag the test results when they do not meet your criteria. Link those limits to a Product to set the tests and specification limits depending on the product being manufactured.
5. **Sample Login:** The first step in a sample's lifecycle. Learn the different options and advantages. The second step in a sample's lifecycle records the physical receipt in the lab.
6. **Sample Data Entry:** The third step is to perform a test and record the results.
7. **Sample Completion:** Now that tests are complete, assign a disposition to the sample.
8. **Instruments and Analysts:** Identify the instruments that your laboratory uses as well as the calibration and maintenance intervals to make sure preventative maintenance and calibration are performed at the required intervals. Use work orders to demonstrate instrument suitability.
9. **Quality Management (QM) Batching:** Set up Sampling Plans for manufacturing of products to pre-define sampling and testing requirements for quality control of batches and samples.
10. **Analytical Quality Control (AQC) Batching:** Create a worklist enumerating all the samples that require a certain test to be run on them. Order the list, assign it to an analyst, and use it to help prove system suitability if needed.
11. **Consumables (RSM):** Keep track of your inventory, link a reagent lot to a test that was performed on a sample or AQC batch, and use the concentration of a solution to calculate the value of a test result.
12. **Stability:** Evaluate the performance of a product that is stored under different environmental conditions to determine shelf life or demonstrate safety and effectiveness over time.
13. **Scheduler:** Set up a calendar for routine collection of samples from different sample points. Use this to perform environmental monitoring or to create work orders for recurring maintenance.



Typical Daily Agenda for LVPharma Familiarization

Day 1	Day 2	Day 3	Day 4
Overview	Materials	Instruments and Training Records	Stability
Navigation	Products	QM Batching	
Security, Users and Roles	Sample Login		
Tests	Sample Receipt	AQC Batching	Scheduler
Specifications	Data Entry	Reagents	Capstone
	Sample Completion		Putting it all together