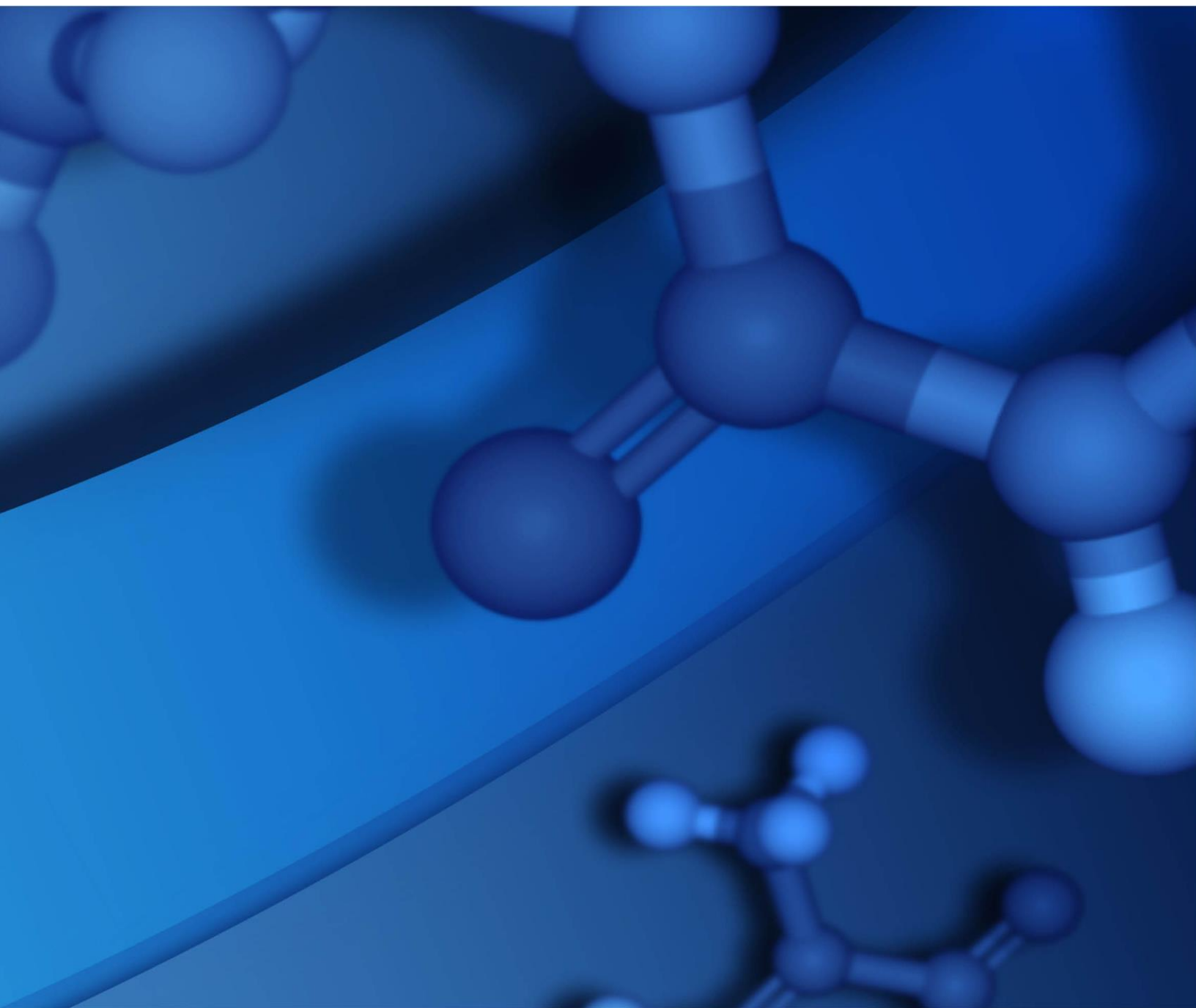


TRAINING COURSE CATALOG

BIOVIA DISCOVERANT



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Summary

We are pleased to offer a variety of courses to help you reach productivity quickly and increase the value of your investment in BIOVIA software. A range of training options and delivery methods is available so you can choose a format that best meets your needs. We use structured training materials developed by certified instructional designers and include extensive examples and exercises to maximize practical skills that you can put to use immediately.

Delivery Methods:

- **eLearning Videos:** These self-paced, micro-learning videos introduce you to BIOVIA Discoverant and are available at any time from a web browser. They are also a useful tool when you want a quick reminder of BIOVIA Discoverant functionality. Additionally, these serve as prerequisites for instructor-led training courses.
- **Instructor-Led Training:** Facilitated by a BIOVIA certified instructor, this training takes place onsite at your location or through a virtual classroom. These courses offer hands-on exercises to enhance the learning experience.

eLearning Courses

Learning Experience for BIOVIA Discoverant

The Learning Experience for BIOVIA Discoverant eLearning video bundle contains five parts: BIOVIA Discoverant Exploration; Visualizing and Monitoring Data, PRIMR Data Entry, Hierarchy Maintenance, HVU Data Entry, HVU Text Execution.

BIOVIA Discoverant Exploration

This course introduces students to the various aspects of BIOVIA Discoverant by defining the terminology, interacting with the environment, and exploring job roles associated with each component in the BIOVIA Discoverant suite of products.

Topics	Details
<ul style="list-style-type: none">• Identify barriers to successful data aggregation and analysis in the life science industry• Identify and describe relationships among the BIOVIA Discoverant suite of products to produce a software solution that improves process understanding• Identify and define the terminology, environment, and capabilities associated with each component in the BIOVIA Discoverant suite of products• Identify the job roles associated with each component in the BIOVIA Discoverant suite of products.• Define the BIOVIA Discoverant implementation process• Identify training offerings based on job roles	<p>Duration: 1 hour</p> <p>Prerequisites: None</p> <p>Videos:</p> <ul style="list-style-type: none">> Discoverant Advantage> Mapping Your Process> Paper Data Entry> Analyzing Data> Discoverant Validation> Deploying Discoverant

Visualizing and Monitoring Data

This course addresses the process of designing and creating graphical displays of data in BIOVIA Discoverant as an integral step in transforming raw data into useful information for decision-making.

Topics	Details
<ul style="list-style-type: none">• Aggregate data from multiple source systems into a single usable dataset that is understandable to the end user• View and modify raw data in a table• Visualize data for a variety of different use cases• Monitor data to detect trends in a manufacturing process• Automate the creation and sharing of outputs to stakeholders	<p>Duration: 1 hour 30 minutes</p> <p>Prerequisites: Discoverant Exploration</p> <p>Videos:</p> <ul style="list-style-type: none">> Creating Analysis Groups> Managing Analysis Groups> Viewing Raw Data> Configuring Parameter Properties> Discrete Data Visualizations> Continuous and Advanced Visualizations> Baselining Data> Ongoing Monitoring> Monitoring by Exception> Monitoring Strategy Definition> Monitoring Dashboard Configuration> Viewing Your Monitoring Dashboard

PRIMR Data Entry

Targeted to BIOVIA PRIMR users with a data entry role who have a basic familiarity with browsers, this course walks students through how to enter data from paper records into the BIOVIA PRIMR data entry tool for use in BIOVIA Discoverant.

Topics	Details
<ul style="list-style-type: none">• Create a new data entry Book from Book Templates• Create new data entry Pages for a Book• Enter data into online forms• Correct and reject data entry forms• Generate productivity and accuracy reports• Import XML data	<p>Duration: 1 hour</p> <p>Prerequisites: Discoverant Exploration</p> <p>Videos:</p> <ul style="list-style-type: none">> Organize your Digital Data> Perform your Role: Assigner> Perform your Role: Data Entry> Perform your Role: Reconciler> Perform your Role: Data Manager> Perform your Role: Export Editor

Hierarchy Maintenance

This course enables BIOVIA Discoverant administrators and those first learning to create hierarchies to provide support for the most common hierarchy changes. This includes the addition of new nodes and parameters based on existing view structures, as well as updates or additions to conditions applied by the hierarchy. How to create a Hierarchy-Derived Parameter (HDP) is also covered in this course.

Topics	Details
<ul style="list-style-type: none">• Provide an understandable BIOVIA Discoverant overview• Add a parameters from a template• Create and add parameters to a hierarchy• Create nodes to affect parameters• Create a Hierarchy-Derived Parameter (HDP)• Test hierarchy changes	<p>Duration: 2 hours</p> <p>Prerequisites: Discoverant Exploration; knowledge of SQL</p> <p>Videos:</p> <ul style="list-style-type: none">> Understanding a Hierarchy and its Components> Add Parameters Using a Template> Add Parameters with Query Restrictions> Add Parameters with Multiple Values> Add Parameters Measured over Time> Understanding Nodes> Create Custom Calculations> Create Discrete Custom Calculations> Create a Continuous Custom Calculation> Hierarchy Migration via Hierarchy Tool> Hierarchy Migration via Import/Export

HVU Data Entry

Technical users who are currently able to navigate BIOVIA Discoverant at a basic level and are familiar with hierarchy structure and source data may be interested in this course. The focus for the HVU Data Entry course is on how to enter parameter data for a published hierarchy.

Topics	Details
<ul style="list-style-type: none">• Access HVU Data Entry• Identify data entry best practices• Manually enter Parameter Set Names and data for discrete, continuous, and replicate parameters• Upload data from a tab-delimited data source• Copy and paste data from a spreadsheet	<p>Duration: 1 hour</p> <p>Prerequisites: Discoverant Exploration</p> <p>Videos:</p> <ul style="list-style-type: none">> Software Overview> Specify Parameter Set Names for Verification Data> Enter Each Data Type> Upload Data

HVU Test Execution

The focus of the HVU Test Execution course is on how to use the Hierarchy Verification Utility (HVU) to publish hierarchies, execute tests, and view test results within Hierarchy Manager. Technical users who are currently able to navigate both BIOVIA Discoverant and Hierarchy Manager at a basic level will benefit from this course.

Topics	Details
<ul style="list-style-type: none">• Access Hierarchy Manager• Publish a hierarchy for use with HVU• Execute HVU for testing a new configuration and for regression testing• View and evaluate test results	<p>Duration: 1 hour</p> <p>Prerequisites: Discoverant Exploration</p> <p>Videos:</p> <ul style="list-style-type: none">> Software Overview> Test a Hierarchy> Apply HVU Test Information

Instructor-Led Courses

Hierarchy Development

This course covers all aspects of hierarchy development from design through hierarchy creation. The course walks through each step of the hierarchy development process; from connecting Discoverant to source data systems, to best practices for views creation, to configuring BIOVIA Discoverant to use the views to configure a hierarchy.

Topics	Details
<ul style="list-style-type: none">• Learn to use the hierarchy definition tool• Create and load a stub hierarchy• Describe how data flows from the source system to BIOVIA Discoverant• Source and context views in depth• Configure a hierarchy• Work with overlays and spec limits• Configure a stability parameter• Use PRIMR as a data source	<p>Duration: 2 days</p> <p>Prerequisites: (eLearning) Discoverant Exploration; (eLearning) Hierarchy Maintenance; knowledge of SQL</p> <p>Location: Onsite or Virtual Classroom</p>

BIOVIA PRIMR Development

This course provides both lecture and hands-on exercises that cover the rules and configuration of BIOVIA PRIMR Book and Page Templates. Basic design concepts, creation of HTML forms, system configuration, and utilization of style sheets and JavaScript are discussed. Students then create and manage BIOVIA PRIMR Book and Page Templates using HTML editors and the BIOVIA PRIMR tools.

Topics	Details
<ul style="list-style-type: none">• Learn how BIOVIA PRIMR supports 21 CFR Part 11 compliance and other regulatory initiatives• Define the Passport methodology and where BIOVIA PRIMR is placed in this implementation methodology• Identify the building blocks of hierarchy development• Utilize the two parts of BIOVIA PRIMR: Template Manager and Data Entry• Identify and utilize the BIOVIA PRIMR user roles• Explain the typical workflow for each BIOVIA PRIMR role• Describe the lifecycle of a BIOVIA PRIMR book; from creation, to data entry, to reconciliation, and to export	<p>Duration: 2 days</p> <p>Prerequisites: (eLearning) Discoverant Exploration; (eLearning) PRIMR Data Entry; knowledge of HTML</p> <p>Location: Onsite or Virtual Classroom</p>

System Administration

This course provides BIOVIA Discoverant administrators with the knowledge necessary to configure and maintain the BIOVIA Discoverant suite of products. Administrators are shown the BIOVIA Discoverant system architecture, are instructed on the administration of users, and are taken through the process of troubleshooting common issues by monitoring logs and interpreting error messages.

Topics	Details
<ul style="list-style-type: none">• Describe the architecture of the BIOVIA Discoverant system and manage the various components in the Windows environment• Design a security scheme that includes user authentication mechanisms and role-based access to product features• Enforce desired system behavior using configuration settings• Leverage system auditing and logging to troubleshoot system issues• Diagnose and solve database connectivity issues• Perform first-level troubleshooting, determine when to contact BIOVIA Support, and assemble the appropriate information for Support calls	<p>Duration: 1 day</p> <p>Prerequisites: (eLearning) Discoverant Exploration</p> <p>Location: Onsite or Virtual Classroom</p>

Statistical Application and Investigations

This course introduces students to the proper application of the tools available within BIOVIA Discoverant that are designed to assist in investigational analysis. Students are guided through fundamental concepts relevant to statistical application in the life science manufacturing industry, determine the appropriate tools to use for various investigation scenarios, and learn how to interpret statistical findings in order to facilitate data-driven decisions. Through discussion of use cases and interaction with the software, students develop their investigational analysis skills in BIOVIA Discoverant.

Topics	Details
<ul style="list-style-type: none">• Identify and comprehend key concepts and terminology of statistical application.• Determine how to integrate external data into Discoverant and modify data within Discoverant for investigations.• Identify, conduct, and interpret descriptive and inferential statistics.• Identify Discoverant tools and visualizations to use in an investigation given the data.• Identify the top suspects for investigations and save findings for future investigational analysis.	<p>Duration: 1.5 days</p> <p>Prerequisites: (eLearning) Discoverant Exploration; (eLearning) Visualizing and Monitoring Data</p> <p>Location: Onsite or Virtual Classroom</p>

Leveraging Phase Data for Analysis

The Leveraging Phase Data for Analysis course addresses BIOVIA Discoverant tools that clean out unwanted noise in continuous data within and between features or compare individual features to groups of similar features. Students can compare chromatographic phases, fermentation profiles with process outcomes, and filtration flux profiles within and between batches.

Topics	Details
<ul style="list-style-type: none">• Identify how MPA can be leveraged for continuous data and dynamic processes• Identify, gather, visualize, and create phases for continuous data• Describe how BIOVIA Discoverant can be used to summarize phase data and compare new batches to defined golden batches• Utilize MPA to monitor column performance and generate HETP and asymmetry statistics for monitoring on control charts• Analyze complex relationships among continuous parameters to identify underlying principal components and develop new hypotheses	<p>Duration: ½-day</p> <p>Prerequisites: (eLearning) Discoverant Exploration; (eLearning) Visualizing and Monitoring Data</p> <p>Location: Onsite or Virtual Classroom</p>

Stability Studies and Monitoring

This course provides users with the purposes and the workflows for conducting their stability-oriented job tasks. In accordance with regulatory guidelines, this course reviews Visualizing and Monitoring Datas, ANCOVA-based point-and-click models for expiration dating analysis, as well as control charts to trend and receive alerts on stability study data.

Topics	Details
<ul style="list-style-type: none">• Identify the purpose for stability studies and monitoring at your company• Identify, gather, organize, and visualize necessary stability data• Apply proper modeling for stability expiration analysis and trend monitoring• Develop end-user automation and alerting tools to facilitate communication and expose data	<p>Duration: ½-day</p> <p>Prerequisites: (eLearning) Discoverant Exploration; (eLearning) Visualizing and Monitoring Data</p> <p>Location: Onsite or Virtual Classroom</p>

Hierarchy Design

This course introduces the concepts required for defining and designing a new BIOVIA Discoverant Hierarchy. Students are taken through the complete design process, from scoping the hierarchy based on the needs and resources present, to creating documents that capture essential information about the process. Students are also taught how to develop requirements for the hierarchy, capture the necessary parameters, and test the implemented hierarchy. Labs and discussion complement the lecture material so that students complete the course with the essential information for carrying out the hierarchy design process.

Topics	Details
<ul style="list-style-type: none">• Create a document outlining the primary objectives for creating the hierarchy• Identify the information required to assess a client's needs with regards to a hierarchy• Apply knowledge about BIOVIA Discoverant tools, manufacturing processes, and client needs to create Analytical Goals• Identify the information required to map a process and create a document that captures that process• Translate Analytical Goals and the corresponding process into a hierarchy• Evaluate design changes to the hierarchy during implementation and determine if they impact the Analytical Goals• Confirm that the Analytical Goals are met by the implemented hierarchy	<p>Duration: 1 day</p> <p>Prerequisites: (eLearning) Discoverant Exploration, (eLearning) Visualizing and Monitoring Data; Statistical Application and Investigations; Stability Studies and Monitoring; Leveraging Phase Data for Analysis</p> <p>Location: Onsite or Virtual Classroom</p>