



Vaccine and Biologics Manufacturing Cost Accounting Training



AGILE LEADERS
Training Center

Vaccine and Biologics Manufacturing Cost Accounting Training

Overview

Manufacturing Cost Accounting: BOM, Absorption and COGS for Biologics is a specialized one-week training course designed for finance, cost accounting and manufacturing professionals working in vaccine production, biopharmaceutical manufacturing and related biological industries. The course develops practical capabilities in calculating, allocating, analyzing and controlling manufacturing costs across complex production processes.

Participants examine the financial structure of vaccine manufacturing, including direct materials, labor, equipment, utilities, quality control and manufacturing overhead. The course emphasizes Bills of Materials BOM management, material cost rollups, standard and actual costing, overhead cost absorption, and the preparation of Cost of Goods Manufactured COGM and Cost of Goods Sold COGS calculations.

Through practical manufacturing cost accounting exercises, participants learn to trace production expenditures through raw materials, Work-in-Process WIP and finished goods inventories. Particular attention is given to batch-level costing, production yield losses, shared facility cost allocation and cost per saleable vaccine dose.

The program also introduces cost analysis methods for upstream processing, downstream purification, formulation, filling and packaging operations. Participants apply cost variance analysis and production efficiency measures to identify opportunities for manufacturing cost control while maintaining Good Manufacturing Practices GMP and product quality requirements.

Who Should Attend

- Manufacturing Cost Accountants and Cost Controllers
- Finance Managers and Financial Analysts in pharmaceutical manufacturing
- Production Accountants and Industrial Costing Specialists
- Vaccine and Biologics Manufacturing Managers
- Manufacturing Finance Business Partners
- Production Planning, Inventory and Materials Management Professionals

Departments and Industries

- Finance, Cost Accounting and Management Accounting
- Pharmaceutical, Vaccine and Biopharmaceutical Manufacturing
- Biotechnology and Biological Product Manufacturing
- Production Planning and Manufacturing Operations
- Supply Chain, Procurement and Inventory Management
- Quality Assurance and Quality Control Operations
- Manufacturing Cost Control and Financial Reporting

Learning Objectives

By the end of this course, participants will be able to:



- Classify and calculate direct, indirect, fixed and variable costs in vaccine and biological manufacturing.
- Develop and analyze manufacturing Bills of Materials BOM and calculate material cost rollups.
- Apply standard costing, actual costing and batch-level cost calculations.
- Calculate overhead absorption rates and allocate manufacturing costs across production activities.
- Prepare Cost of Goods Manufactured COGM and Cost of Goods Sold COGS statements.
- Analyze manufacturing cost variances, production yields, inventory movements and cost per dose.
- Develop cost reports and identify opportunities for manufacturing cost optimization.

Course Agenda

Day 1: Manufacturing Cost Accounting for Vaccines and Biologics

- Manufacturing Cost Structure and Classification Matrix
- Direct Materials, Direct Labor and Manufacturing Overhead Cost Analysis
- Fixed, Variable and Semi-Variable Production Cost Classification
- Vaccine Manufacturing Process and Cost Center Mapping
- Standard Costing, Actual Costing and Batch Costing Comparison
- Manufacturing Cost per Batch and per Dose Calculation
- Reflection & Review: Classify manufacturing expenditures across vaccine production stages

Day 2: Bills of Materials BOM Management and Product Costing

- Manufacturing BOM Structure and Component Identification
- Single-Level and Multi-Level BOM Costing Models
- Raw Material Quantities, Unit Costs and Material Consumption Calculations
- BOM Cost Rollups and Standard Material Cost Development
- Production Routings, Batch Quantities and Yield-Adjusted Material Costing
- BOM Cost Variance Analysis and ERP Costing Integration
- Reflection & Review: Prepare a costed BOM for an illustrative vaccine manufacturing batch

Day 3: Manufacturing Overhead Allocation and Cost Absorption

- Absorption Costing and Variable Costing Methodologies
- Manufacturing Overhead Cost Pool Identification and Classification
- Overhead Absorption Rate Calculation and Allocation Base Selection
- Facility, Equipment, Utilities and Depreciation Cost Allocation
- Activity-Based Costing for Shared Biological Manufacturing Resources
- Under-Absorbed and Over-Absorbed Manufacturing Overhead Analysis
- Reflection & Review: Calculate and allocate manufacturing overhead across two vaccine products



Day 4: Cost of Goods Manufactured and Cost of Goods Sold COGS

- Manufacturing Cost Accumulation and Inventory Cost Flow
- Raw Materials, Work-in-Process and Finished Goods Valuation
- Cost of Goods Manufactured COGM Statement Preparation
- Cost of Goods Sold COGS Calculation and Reconciliation
- Batch Production Costs, Yield Losses and Cost per Saleable Dose
- Gross Profit Analysis and Manufacturing Cost Reporting
- Reflection & Review: Prepare integrated COGM and COGS statements using illustrative vaccine production data

Day 5: Vaccine Manufacturing Cost Analysis and Optimization

- Upstream and Downstream Bioprocess Cost Analysis
- Formulation, Fill-and-Finish and Packaging Cost Calculations
- Quality Control, Production Rejection and Material Wastage Cost Analysis
- Standard versus Actual Manufacturing Cost Variance Analysis
- Production Capacity Utilization and Cost per Dose Optimization
- Integrated Practical Case: BOM Cost Rollup, Overhead Absorption and COGS Calculation
- Reflection & Review: Identify cost variances and prepare a manufacturing cost improvement report

Practical Exercises

The course uses suggested practical activities to apply manufacturing cost accounting principles to realistic vaccine and biological manufacturing scenarios.



- BOM Costing Exercise: Develop a multi-level manufacturing BOM, calculate material costs and account for expected production losses.
- Overhead Absorption Exercise: Calculate overhead allocation rates using labor hours, machine hours and production activity drivers.
- COGS Calculation Exercise: Prepare integrated cost statements covering materials, Work-in-Process, finished goods and Cost of Goods Sold.
- Vaccine Batch Costing Exercise: Calculate manufacturing cost per batch and per saleable dose, considering yield losses and rejected production.
- Integrated Manufacturing Cost Case: Combine BOM costing, overhead absorption, cost variances and COGS calculations into a consolidated manufacturing cost report.

FAQs

Who should attend Manufacturing Cost Accounting training for biologics?

The course is suitable for cost accountants, financial controllers, manufacturing finance professionals, production managers and inventory specialists involved in vaccine, pharmaceutical or biological manufacturing cost management.

Does this course cover Bills of Materials BOM costing?

Yes. Participants develop and analyze manufacturing BOM structures, calculate raw material requirements, perform cost rollups and examine how material consumption, batch quantities and production yields affect manufacturing costs.

How does the course address manufacturing overhead cost absorption?

The course covers overhead cost pools, absorption rate calculations, allocation bases, shared facility expenses, equipment depreciation and the treatment of under-absorbed and over-absorbed overhead costs.

Will participants learn to calculate Cost of Goods Sold COGS?

Yes. Participants prepare Cost of Goods Manufactured and Cost of Goods Sold statements, reconcile manufacturing inventory movements and calculate production costs using illustrative financial and manufacturing data.



How is vaccine manufacturing incorporated into the training?

Practical examples reflect vaccine and biological production activities, including upstream processing, downstream purification, formulation, filling, packaging, quality control, batch yields and cost per saleable dose.

Does the course include practical manufacturing cost calculations?

Yes. The agenda includes BOM costing, overhead absorption, batch cost calculations, COGS statements, variance analysis and an integrated vaccine manufacturing cost accounting case.

Conclusion

Participants leave the course with a practical understanding of manufacturing cost accounting and a set of illustrative costing worksheets, including a costed Bill of Materials, overhead absorption calculations, COGM and COGS statements, and a batch-level manufacturing cost analysis.

These tools support more accurate cost allocation, transparent inventory valuation, consistent financial reporting and better-informed production cost decisions. By connecting accounting principles with vaccine and biological manufacturing operations, the course enables participants to evaluate cost drivers, identify manufacturing inefficiencies and improve cost control without compromising product quality or regulatory requirements.



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