LAPT

LONDON ACADEMY OF PROFESSIONAL TRAINING

CERTIFICATE

Certificate in Quality Management

LAPT — London Academy of Professional Training

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Reference MGT-C01 • Management Centres

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4	99	642	400	60%	Lifetime
SUBJECTS	CHAPTERS	CLASSES	TOTAL MARKS	PASS MARK	VALIDITY

AT A GLANCE

REFERENCE	**MGT-C01**
AWARD	**Certificate**
ASSESSMENT	**400 marks — 240 to pass (60%)**
PREREQUISITES	**None**
VALIDITY	**Lifetime**
AWARDING BODY	**LAPT — London Academy of Professional Training**

CURRICULUM

1

Quality Management Principles and Systems

25 chapters · 150 classes **100 marks**

- **1 Understanding Data Types and Sources in Quality Management** — 6 classes
  - 1.1 Identify Different Types of Data in Quality Management
  - 1.2 Classify Data Sources Relevant to Quality Management
  - 1.3 Evaluate the Importance of Data Types for Quality Decision Making
  - 1.4 Analyze Primary and Secondary Data in Quality Control
  - 1.5 Demonstrate Data Source Selection for Quality Management Projects
  - 1.6 Apply Data Analysis Techniques to Improve Quality Outcomes
- **2 Data Collection Techniques for Quality Improvement** — 6 classes
  - 2.1 Identify Different Data Collection Methods for Quality Improvement
  - 2.2 Evaluate the Effectiveness of Quantitative Data Collection Techniques
  - 2.3 Analyze Qualitative Data Collection Strategies in Quality Contexts
  - 2.4 Design a Data Collection Plan for a Quality Improvement Project
  - 2.5 Implement Ethical Considerations in Data Collection Practices
  - 2.6 Apply Data Collection Techniques to Real-World Quality Scenarios
- **3 Data Analysis Techniques for Quality Assessment** — 6 classes
  - 3.1 Identify Key Data Analysis Techniques for Quality Assessment
  - 3.2 Understand Descriptive Statistics for Quality Metrics
  - 3.3 Apply Inferential Statistics to Quality Data
  - 3.4 Utilize Control Charts for Monitoring Quality Performance
  - 3.5 Interpret Process Capability Indices in Quality Improvement
  - 3.6 Develop a Quality Assessment Report Using Data Analysis
- **4 Interpreting and Presenting Quality Data** — 6 classes
  - 4.1 Analyze Quality Data Using Descriptive Statistics
  - 4.2 Create Visual Representations of Quality Data
  - 4.3 Identify Trends and Patterns in Quality Metrics
  - 4.4 Compare Quality Performance Across Different Processes
  - 4.5 Develop Data-Driven Conclusions for Quality Improvement
  - 4.6 Present Quality Analysis Findings to Stakeholders Effectively
- **5 Implementing Data-Driven Decision Making in Quality Management** — 6 classes
  - 5.1 Understanding Data-Driven Decision Making in Quality Management
  - 5.2 Identifying Key Performance Indicators for Quality Metrics
  - 5.3 Collecting and Analyzing Data for Quality Improvement
  - 5.4 Utilizing Statistical Tools for Quality Data Analysis
  - 5.5 Interpreting Data Insights to Drive Quality Initiatives
  - 5.6 Developing a Data-Driven Action Plan for Quality Enhancement
- **1 Fundamentals of Project Management in Quality Initiatives** — 6 classes
  - 1.1 Define Project Management: Key Concepts and Terminology
  - 1.2 Identify Quality Initiatives: Setting Objectives and Goals
  - 1.3 Develop a Project Plan: Structuring Quality Initiatives
  - 1.4 Assess Risks: Analyzing Challenges in Quality Projects
  - 1.5 Implement Quality Control: Monitoring and Evaluating Project Progress
  - 1.6 Apply Stakeholder Engagement: Communicating for Quality Success
- **2 Planning and Defining Quality Objectives** — 6 classes
  - 2.1 Identify Stakeholders for Quality Objectives
  - 2.2 Define SMART Criteria for Quality Goals
  - 2.3 Assess Current Quality Standards and Gaps
  - 2.4 Align Quality Objectives with Organizational Strategy
  - 2.5 Develop a Quality Improvement Plan
  - 2.6 Communicate Quality Objectives Across Teams
- **3 Risk Management and Quality Assurance Techniques** — 6 classes
  - 3.1 Identify Key Risks in Quality Projects
  - 3.2 Analyze Risk Impact on Project Outcomes
  - 3.3 Develop Risk Mitigation Strategies
  - 3.4 Implement Quality Assurance Practices
  - 3.5 Monitor and Review Risk Management Plans
  - 3.6 Evaluate the Effectiveness of Quality Assurance Techniques
- **4 Implementing Quality Control Measures in Projects** — 6 classes
  - 4.1 Identify Key Quality Control Measures for Projects
  - 4.2 Analyze the Role of Quality Metrics in Project Success
  - 4.3 Develop a Quality Control Plan for a Specific Project
  - 4.4 Implement Quality Control Tools and Techniques in Practice
  - 4.5 Evaluate Quality Control Outcomes and Identify Improvement Areas
- **4 Stakeholder Engagement and Communication during Quality Change Initiatives** — 6 classes
  - 4.1 Identify Key Stakeholders in Quality Change Initiatives
  - 4.2 Analyze Stakeholder Needs and Concerns
  - 4.3 Develop Effective Communication Strategies for Stakeholder Engagement
  - 4.4 Build Consensus Among Stakeholders for Change Initiatives
  - 4.5 Implement Feedback Mechanisms for Ongoing Stakeholder Engagement
  - 4.6 Evaluate the Impact of Stakeholder Communication on Change Outcomes
- **5 Monitoring, Evaluating, and Sustaining Change in Quality Management** — 6 classes
  - 5.1 Identify Key Performance Indicators for Quality Change
  - 5.2 Develop a Monitoring Plan for Quality Management Initiatives
  - 5.3 Implement Data Collection Techniques for Quality Assessment
  - 5.4 Analyze Change Impact on Quality Performance Metrics
  - 5.5 Create a Feedback Loop for Continuous Quality Improvement
  - 5.6 Establish Strategies for Sustaining Quality Change Over Time
- **1 Introduction to Data Analysis in Quality Management** — 6 classes
  - 1.1 Define Key Concepts of Data Analysis in Quality Management
  - 1.2 Identify Data Sources Relevant to Quality Management
  - 1.3 Explore Statistical Tools for Data Analysis
  - 1.4 Analyze Data Trends to Inform Quality Decisions
  - 1.5 Interpret Data Visualizations for Quality Insights
  - 1.6 Apply Data Analysis Techniques to Real-World Quality Scenarios
- **2 Collecting and Managing Quality Data** — 6 classes
  - 2.1 Identify Key Quality Metrics for Data Collection
  - 2.2 Explore Tools and Techniques for Data Collection
  - 2.3 Develop a Data Collection Plan for Quality Management
  - 2.4 Implement Data Collection Methods: Surveys and Observations
  - 2.5 Assess Data Accuracy and Reliability in Quality Management
  - 2.6 Analyze Collected Data to Drive Quality Improvement
- **3 Statistical Methods for Quality Improvement** — 6 classes
  - 3.1 Understand the Role of Statistical Methods in Quality Improvement
  - 3.2 Identify Key Statistical Concepts for Data Analysis
  - 3.3 Apply Descriptive Statistics to Quality Data Sets
  - 3.4 Utilize Control Charts to Monitor Process Variation
  - 3.5 Implement Hypothesis Testing for Quality Decision Making
  - 3.6 Evaluate Statistical Sampling Methods for Quality Assurance
- **4 Data Visualization Techniques for Quality Insights** — 6 classes
  - 4.1 Identify Key Data Points for Quality Insights
  - 4.2 Explore Different Types of Data Visualizations
  - 4.3 Design Effective Charts for Quality Management
  - 4.4 Utilize Software Tools for Data Visualization
  - 4.5 Interpret Visualization Outputs for Decision Making
  - 4.6 Present Data Findings to Stakeholders Effectively
- **5 Advanced Analytical Tools for Quality Management** — 6 classes
  - 5.1 Explore Statistical Process Control Techniques
  - 5.2 Analyze Variation with Control Charts
  - 5.3 Apply Six Sigma Methods to Improve Quality
  - 5.4 Utilize Root Cause Analysis for Problem Solving
  - 5.5 Implement Failure Mode and Effects Analysis (FMEA)
  - 5.6 Develop Action Plans Based on Data Insights
- **1 Understanding Project Management Basics in Quality Settings** — 6 classes
  - 1.1 Define Project Management in Quality Settings
  - 1.2 Identify Key Components of Quality Management Projects
  - 1.3 Explore the Project Lifecycle in Quality Management
  - 1.4 Analyze Stakeholder Roles and Responsibilities
  - 1.5 Examine Tools and Techniques for Project Quality Management
  - 1.6 Apply Project Management Concepts to Quality Improvement Initiatives
- **2 Integrating Total Quality Management with Project Management Practices** — 6 classes
  - 2.1 Explore the Principles of Total Quality Management
  - 2.2 Identify Key Project Management Practices for Quality Integration

2 **Total Quality Management Tools**

35 chapters · 210 classes **100 marks**

- **1 Fundamentals of Quality Management Principles** — 6 classes
  - 1.1 Define Key Terms in Quality Management Principles
  - 1.2 Explore the Evolution of Quality Management Concepts
  - 1.3 Analyze the Benefits of Implementing Quality Management Systems
  - 1.4 Identify Core Components of Quality Management Frameworks
  - 1.5 Examine the Role of Leadership in Quality Management
  - 1.6 Apply Quality Management Principles to Real-World Scenarios
- **2 The Role of Leadership in Quality Management** — 6 classes
  - 2.1 Identify Key Leadership Qualities in Quality Management
  - 2.2 Explore the Impact of Leadership Styles on Quality Culture
  - 2.3 Analyze the Relationship Between Leadership and Employee Engagement
  - 2.4 Develop Strategies for Leading Quality Improvement Initiatives
  - 2.5 Assess the Role of Leadership in Establishing Quality Goals
  - 2.6 Implement Effective Communication Techniques for Quality Leadership
- **3 Customer Focus and Stakeholder Engagement** — 6 classes
  - 3.1 Understand Customer Needs Through Research
  - 3.2 Analyze Stakeholder Perspectives in Quality Management
  - 3.3 Develop Effective Communication Strategies for Engagement
  - 3.4 Implement Customer Feedback Mechanisms
  - 3.5 Create Collaborative Relationships with Stakeholders
  - 3.6 Evaluate Quality Outcomes Based on Customer and Stakeholder Input
- **4 Data-Driven Decision-Making in Quality Management** — 6 classes
  - 4.1 Understand the Role of Data in Quality Management
  - 4.2 Identify Key Performance Indicators for Quality Assessment
  - 4.3 Explore Data Collection Methods for Quality Improvement
  - 4.4 Analyze Data Trends to Identify Quality Issues
  - 4.5 Apply Statistical Tools for Data Interpretation
  - 4.6 Develop Action Plans Based on Data-Driven Insights
- **5 Implementing Continuous Improvement and Quality Tools** — 6 classes
  - 5.1 Understand the Principles of Continuous Improvement
  - 5.2 Identify Key Quality Management Tools for Improvement
  - 5.3 Analyze Current Processes for Improvement Opportunities
  - 5.4 Develop Action Plans Using Quality Tools
  - 5.5 Implement Continuous Improvement Strategies in Teams
  - 5.6 Evaluate the Impact of Quality Tools on Performance
- **1 Foundations of Quality Management Principles** — 6 classes
  - 1.1 Define Key Quality Management Terminologies
  - 1.2 Explore the Historical Development of Quality Management
  - 1.3 Analyze the Role of Leadership in Quality Management
  - 1.4 Identify Core Principles of Quality Management Models
  - 1.5 Evaluate the Impact of Customer Focus on Quality Systems
  - 1.6 Apply Quality Management Principles to Real-World Scenarios
- **2 Quality Management Systems and Standards** — 6 classes
  - 2.1 Define Key Concepts of Quality Management Systems
  - 2.2 Explore International Standards for Quality Management
  - 2.3 Analyze Components of Effective Quality Management Systems
  - 2.4 Evaluate the Benefits of Implementing Quality Standards
  - 2.5 Identify Common Quality Management Tools and Techniques
  - 2.6 Develop a Plan for Continuous Improvement in Quality Management
- **3 Implementing Effective Quality Strategies** — 6 classes
  - 3.1 Analyze Current Quality Management Practices
  - 3.2 Identify Key Quality Improvement Opportunities
  - 3.3 Develop a Comprehensive Quality Strategy Framework
  - 3.4 Implement Quality Improvement Initiatives Effectively
  - 3.5 Evaluate the Impact of Quality Strategies on Performance
  - 3.6 Communicate Quality Achievements to Stakeholders
- **4 Quality Performance Measurement and Improvement** — 6 classes
  - 4.1 Define Key Metrics for Quality Performance
  - 4.2 Manage Quality Assurance Systems
  - 4.3 Ensure Compliance with Standards
  - 4.4 Identify Opportunities for Quality Improvement
  - 4.5 Manage and Assure Team Quality
  - 4.6 Review Outcomes and Adjust Quality Objectives
- **4 Implementing Continuous Improvement: The PDCA Cycle** — 6 classes
  - 4.1 Understand the PDCA Cycle: Definitions and Concepts
  - 4.2 Analyze the Importance of Continuous Improvement in TQM
  - 4.3 Define Each Phase of the PDCA Cycle: Plan, Do, Check, Act
  - 4.4 Develop a Plan for Implementing the PDCA Cycle in a Team
  - 4.5 Evaluate the Results: Techniques for Monitoring and Assessing
  - 4.6 Apply Continuous Improvement Strategies: Real-World Case Studies
- **5 Leadership and TQM: Building a Quality Culture** — 6 classes
  - 5.1 Define the Role of Leadership in TQM Implementation
  - 5.2 Identify Key Characteristics of a Quality-Driven Leader
  - 5.3 Explore Strategies for Building a Quality Culture in Teams
  - 5.4 Analyze Case Studies of Successful TQM Leadership
  - 5.5 Develop Action Plans for Enhancing Leadership in Quality Management
  - 5.6 Evaluate the Impact of Leadership on Continuous Improvement Initiatives
- **1 Fundamentals of Quality Improvement Tools** — 6 classes
  - 1.1 Define and Explain Key Quality Improvement Concepts
  - 1.2 Identify Various Quality Improvement Tools and Their Uses
  - 1.3 Analyze the Functionality of Process Mapping Techniques
  - 1.4 Apply the PDCA Cycle for Continuous Improvement
  - 1.5 Utilize Root Cause Analysis to Enhance Problem Solving
  - 1.6 Develop a Quality Improvement Action Plan Using Selected Tools
- **2 Data Collection and Analysis Techniques** — 6 classes
  - 2.1 Identify Key Data Collection Methods for Quality Improvement
  - 2.2 Distinguish Between Qualitative and Quantitative Data
  - 2.3 Apply Sampling Techniques to Gather Reliable Data
  - 2.4 Utilize Statistical Tools for Data Analysis
  - 2.5 Interpret Data Trends and Patterns in Quality Improvement
  - 2.6 Create Action Plans Based on Data Analysis Results
- **3 Root Cause Analysis Methodologies** — 6 classes
  - 3.1 Identify and Define the Problem Using RCA
  - 3.2 Explore Common Root Cause Analysis Techniques
  - 3.3 Gather and Analyze Data for RCA Effectiveness
  - 3.4 Apply the 5 Whys Method for Root Cause Identification
  - 3.5 Utilize Fishbone Diagrams to Visualize Causes
  - 3.6 Develop an Action Plan Based on RCA Findings
- **4 Process Improvement Tools and Strategies** — 6 classes
  - 4.1 Identify Key Process Improvement Tools
  - 4.2 Analyze Current Processes Using Value Stream Mapping
  - 4.3 Implement the Plan-Do-Check-Act (PDCA) Cycle
  - 4.4 Utilize Root Cause Analysis Techniques for Problem Solving
  - 4.5 Measure Process Performance with Six Sigma Metrics
  - 4.6 Develop an Action Plan for Continuous Improvement
- **5 Sustaining Quality Improvement Initiatives** — 6 classes
  - 5.1 Identify Key Factors for Sustaining Quality Improvement Initiatives
  - 5.2 Analyze Stakeholder Roles in Sustaining Quality Improvements
  - 5.3 Develop Metrics for Measuring Quality Improvement Success
  - 5.4 Implement Continuous Feedback Mechanisms for Quality Initiatives
  - 5.5 Create a Culture of Continuous Quality Improvement in Organizations
  - 5.6 Evaluate and Adapt Quality Improvement Strategies for Long-term Success
- **1 Foundations of Total Quality Management** — 6 classes
  - 1.1 Define Total Quality Management and its Key Principles
  - 1.2 Explore the Historical Development of Total Quality Management
  - 1.3 Identify the Role of Leadership in Total Quality Management
  - 1.4 Examine the Relationship Between TQM and Continuous Improvement
  - 1.5 Analyze Customer Satisfaction as a Fundamental TQM Principle
  - 1.6 Apply TQM Concepts to Real-World Scenarios
- **2 Quality Tools and Techniques in TQM** — 6 classes
  - 2.1 Identify Key Quality Tools in TQM
  - 2.2 Analyze the Purpose of Quality Techniques
  - 2.3 Apply the PDCA Cycle in Quality Management
  - 2.4 Utilize Fishbone Diagrams for Root Cause Analysis
  - 2.5 Measure Process Performance with Control Charts
  - 2.6 Implement Continuous Improvement Strategies Using Quality Tools

3 **Quality Improvement Techniques** 27 chapters · 162 classes **100 marks**

- **1 Understanding Lean Principles and Fundamentals** — 6 classes
  - 1.1 Define Lean Principles and Their Importance
  - 1.2 Identify Key Lean Tools and Techniques
  - 1.3 Analyze Value Streams for Waste Identification
  - 1.4 Apply the 5S Methodology for Workplace Organization
  - 1.5 Evaluate Continuous Improvement through Kaizen
  - 1.6 Develop an Action Plan to Implement Lean Practices
- **2 Mapping and Analyzing Current Processes** — 6 classes
  - 2.1 Identify Key Process Steps in Current Operations
  - 2.2 Create Detailed Process Maps to Visualize Workflows
  - 2.3 Analyze Process Flow for Bottlenecks and Inefficiencies
  - 2.4 Measure Process Performance Using Key Metrics
  - 2.5 Evaluate Stakeholder Inputs to Enhance Process Understanding
  - 2.6 Develop Actionable Insights for Process Improvement
- **3 Implementing Lean Tools and Techniques** — 6 classes
  - 3.1 Identify Key Lean Tools for Process Improvement
  - 3.2 Assess Current Processes for Lean Opportunities
  - 3.3 Implement Value Stream Mapping Techniques
  - 3.4 Apply 5S Methodology for Workplace Organization
  - 3.5 Utilize Kaizen for Continuous Improvement Initiatives
  - 3.6 Measure and Analyze Results of Lean Implementations
- **4 Measuring Process Performance and Outcomes** — 6 classes
  - 4.1 Define Key Performance Indicators (KPIs) for Process Measurement
  - 4.2 Collect Data Effectively to Evaluate Process Performance
  - 4.3 Analyze Process Data to Identify Improvement Opportunities
  - 4.4 Visualize Performance Outcomes Using Graphical Techniques
  - 4.5 Benchmark Processes Against Industry Standards
  - 4.6 Develop Action Plans Based on Measured Outcomes
- **5 Driving Continuous Improvement in Lean Operations** — 6 classes
  - 5.1 Define Key Concepts in Continuous Improvement
  - 5.2 Identify Waste in Lean Operations
  - 5.3 Apply the PDCA Cycle for Process Improvement
  - 5.4 Utilize Value Stream Mapping to Enhance Efficiency
  - 5.5 Foster a Culture of Continuous Improvement within Teams
  - 5.6 Measure and Sustain Improvement Outcomes in Lean Operations
- **1 Foundations of Strategic Improvement Methodologies** — 6 classes
  - 1.1 Identify Core Principles of Strategic Improvement
  - 1.2 Analyze Key Methodologies in Strategic Improvement
  - 1.3 Differentiate Between Qualitative and Quantitative Improvement Techniques
  - 1.4 Evaluate the Role of Leadership in Strategic Improvement
  - 1.5 Implement a Strategic Improvement Framework
  - 1.6 Measure Outcomes and Assess Impact of Improvement Strategies
- **2 Data-Driven Decision Making for Improvements** — 6 classes
  - 2.1 Analyze Key Performance Indicators for Effective Decision Making
  - 2.2 Collect and Organize Data for Strategic Insights
  - 2.3 Interpret Data Trends to Identify Improvement Opportunities
  - 2.4 Utilize Statistical Tools for Data Analysis
  - 2.5 Develop Actionable Strategies from Data Findings
  - 2.6 Evaluate the Impact of Data-Driven Decisions on Performance
- **3 Lean Thinking and Value Stream Mapping** — 6 classes
  - 3.1 Understand Lean Thinking Principles
  - 3.2 Identify Waste in Processes
  - 3.3 Explore the Concept of Value in Lean
  - 3.4 Introduction to Value Stream Mapping
  - 3.5 Create a Value Stream Map for Your Process
  - 3.6 Analyze and Improve Your Value Stream Mapping Outcomes
- **4 Applying Six Sigma Tools for Strategic Improvement** — 6 classes
  - 4.1 Understand the Fundamentals of Six Sigma
  - 4.2 Identify Define Phase Tools in Six Sigma
  - 4.3 Apply Measure Phase Techniques for Data Collection
  - 4.4 Explore Analyze Phase Methods to Identify Root Causes
  - 4.5 Implement Improve Phase Strategies for Process Enhancement
  - 4.6 Evaluate Control Phase Tools for Sustaining Improvements
- **5 Integrating Continuous Improvement into Organizational Culture** — 6 classes
  - 5.1 Define Continuous Improvement and Its Importance
  - 5.2 Identify Key Principles of Lean Thinking
  - 5.3 Develop Strategies for Fostering a Culture of Improvement
  - 5.4 Implement Tools for Continuous Improvement
  - 5.5 Measure the Impact of Continuous Improvement Initiatives
  - 5.6 Sustain Momentum in Continuous Improvement Efforts
- **3 Data Collection and Analysis Techniques** — 6 classes
  - 3.1 Identify Key Data Collection Methods
  - 3.2 Design Effective Surveys for Quality Improvement
  - 3.3 Implement Data Collection Techniques in Real Scenarios
  - 3.4 Analyze Data Using Statistical Tools and Software
  - 3.5 Interpret Data Findings for Actionable Insights
  - 3.6 Develop a Quality Improvement Action Plan Based on Data Analysis
- **4 Implementing Quality Improvement Projects** — 6 classes
  - 4.1 Identify Key Areas for Quality Improvement
  - 4.2 Define Measurable Objectives for Projects
  - 4.3 Select Appropriate Quality Improvement Tools
  - 4.4 Develop a Structured Project Plan
  - 4.5 Implement Quality Improvement Initiatives
  - 4.6 Evaluate Outcomes and Sustain Improvements
- **5 Sustaining Quality Improvements and Organizational Culture** — 6 classes
  - 5.1 Analyze the Impact of Organizational Culture on Quality Improvement
  - 5.2 Identify Key Elements for Sustaining Quality Improvements
  - 5.3 Develop Strategies to Align Culture with Quality Goals
  - 5.4 Implement Continuous Feedback Mechanisms for Quality Assurance
  - 5.5 Foster Employee Engagement in Quality Improvement Initiatives
  - 5.6 Evaluate Success Metrics for Sustainable Quality Improvements
- **1 Fundamentals of Quality Improvement Techniques** — 6 classes
  - 1.1 Define Key Quality Improvement Concepts
  - 1.2 Explore Historical Milestones in Quality Improvement
  - 1.3 Identify Core Quality Improvement Models
  - 1.4 Analyze Data for Quality Improvement Initiatives
  - 1.5 Implement Basic Quality Improvement Techniques
  - 1.6 Participate in Quality Audits
- **2 Data Collection and Analysis for Quality Improvement** — 6 classes
  - 2.1 Identify Key Performance Indicators for Quality Improvement
  - 2.2 Collect Quantitative Data Using Effective Sampling Techniques
  - 2.3 Utilize Qualitative Data Collection Methods for Insightful Analysis
  - 2.4 Analyze Data Using Statistical Tools for Quality Evaluation
  - 2.5 Interpret Data Results to Drive Quality Improvement Strategies
  - 2.6 Develop Action Plans Based on Data Analysis Findings
- **3 Lean Principles in Quality Management** — 6 classes
  - 3.1 Identify Key Lean Principles in Quality Management
  - 3.2 Analyze Waste and Its Impact on Quality
  - 3.3 Implement Value Stream Mapping to Enhance Processes
  - 3.4 Apply the 5S Methodology for Workplace Organization
  - 3.5 Utilize Kaizen for Continuous Improvement Initiatives
  - 3.6 Develop Action Plans to Sustain Lean Practices
- **4 Six Sigma Methodology for Process Improvement** — 6 classes
  - 4.1 Define the Six Sigma Methodology and Its Key Principles
  - 4.2 Identify the DMAIC Process: A Structured Approach to Improvement
  - 4.3 Explore Statistical Tools Used in Six Sigma Analysis
  - 4.4 Implement the Define Phase: Setting Goals and Project Scope
  - 4.5 Analyze Data in the Measure Phase: Collecting and Interpreting Metrics
  - 4.6 Apply Continuous Improvement Techniques: From Analysis to Actionable Solutions
- **5 Sustaining Quality Improvement Initiatives** — 6 classes
  - 5.1 Analyze the Role of Leadership in Sustaining Quality Improvements
  - 5.2 Identify Key Metrics for Measuring Quality Improvement Success
  - 5.3 Develop Strategies for Engaging Stakeholders in Quality Initiatives
  - 5.4 Implement Continuous Feedback Mechanisms for Quality Sustainability
  - 5.5 Create a Roadmap for Long-term Quality Improvement Practices
  - 5.6 Evaluate the Impact of Quality Improvement Initiatives on Organizational Performance
- **1 Fundamentals of Process Improvement Frameworks** — 6 classes
  - 1.1 Define Key Process Improvement Concepts
  - 1.2 Explore the Six Sigma Methodology
  - 1.3 Identify Common Process Improvement Frameworks
  - 1.4 Analyze the DMAIC Cycle: Define, Measure, Analyze, Improve, Control
  - 1.5 Evaluate Tools for Process Mapping and Analysis
  - 1.6 Apply Process Improvement Techniques to Real-World Scenarios

4 **Statistical Quality Control** 12 chapters · 120 classes **100 marks**

- **1 Purpose and Scope of Statistical Quality Control** — 10 classes
  - 1.1 Why Quality Is Controlled by Data
  - 1.2 Variation in Everyday Work Processes
  - 1.3 Common Cause and Special Cause Variation
  - 1.4 Inspection Versus Prevention
  - 1.5 Roles of Operators and Inspectors
  - 1.6 Quality Characteristics and Specifications
  - 1.7 Customer Requirements and Tolerances
  - 1.8 The Cost of Poor Quality
  - 1.9 Where Statistical Control Fits in a Workplace
  - 1.10 Reading a Simple Quality Plan
- **2 Collecting Quality Data on the Shop Floor** — 10 classes
  - 2.1 Variable Data and Attribute Data
  - 2.2 Deciding What to Measure
  - 2.3 Designing a Check Sheet
  - 2.4 Sampling Plans for Routine Checks
  - 2.5 Rational Subgroups in Practice
  - 2.6 Avoiding Bias When Sampling
  - 2.7 Recording Data Accurately
  - 2.8 Data Entry and Traceability
  - 2.9 Stratifying Data by Machine and Shift
  - 2.10 Keeping Quality Records Secure
- **3 Measurement Systems and Gauge Reliability** — 10 classes
  - 3.1 Accuracy Versus Precision
  - 3.2 Choosing the Right Measuring Instrument
  - 3.3 Calibration and Calibration Records
  - 3.4 Handling and Storing Gauges
  - 3.5 Resolution and Least Count
  - 3.6 Repeatability of a Measurement
  - 3.7 Reproducibility Between Operators
  - 3.8 Running a Simple Gauge Study
  - 3.9 Acting on Unreliable Measurements
  - 3.10 Reporting Measurement Problems
- **4 Descriptive Statistics for Quality Technicians** — 10 classes
  - 4.1 Mean Median and Mode at Work
  - 4.2 Range and Standard Deviation
  - 4.3 Calculating Statistics by Hand
  - 4.4 Using a Calculator and Spreadsheet
  - 4.5 Frequency Tables and Histograms
  - 4.6 Reading the Shape of a Histogram
  - 4.7 The Normal Distribution Explained Simply
  - 4.8 Percentiles and Outliers
  - 4.9 Summarising a Batch of Results
  - 4.10 Presenting Numbers to Supervisors
- **5 Basic Charts for Quality Analysis** — 10 classes
  - 5.1 Bar Charts and Pie Charts for Defects
  - 5.2 Pareto Charts for Priorities
  - 5.3 Run Charts for Trends
  - 5.4 Scatter Diagrams for Relationships
  - 5.5 Cause and Effect Diagrams
  - 5.6 Flowcharts of Inspection Steps
  - 5.7 Choosing the Right Chart
  - 5.8 Drawing Charts in a Spreadsheet
  - 5.9 Spotting Patterns and Shifts
  - 5.10 Using Charts in Team Meetings
- **6 Control Charts for Variable Data** — 10 classes
  - 6.1 Purpose of a Control Chart
  - 6.2 Parts of an X-bar and R Chart
  - 6.3 Setting Up Subgroup Sizes
  - 6.4 Calculating Control Limits
  - 6.5 Plotting Points Correctly
  - 6.6 Reading Out-of-Control Signals
  - 6.7 Run Rules and Trend Rules
  - 6.8 Individuals and Moving Range Charts
  - 6.9 Responding to a Signal at the Machine
  - 6.10 Reviewing and Updating Limits
- **7 Control Charts for Attribute Data** — 10 classes
  - 7.1 Defects Versus Defectives
  - 7.2 The p Chart for Proportion Defective
  - 7.3 The np Chart for Number Defective
  - 7.4 The c Chart for Defect Counts
  - 7.5 The u Chart for Defects per Unit
  - 7.6 Choosing the Correct Attribute Chart
  - 7.7 Handling Varying Sample Sizes
  - 7.8 Calculating Limits for Attribute Charts
  - 7.9 Interpreting Attribute Chart Signals
  - 7.10 Posting Charts for Operators
- **8 Process Capability and Performance** — 10 classes
  - 8.1 Specification Limits Versus Control Limits
  - 8.2 Meaning of Capability
  - 8.3 Calculating Cp and Cpk
  - 8.4 Process Performance Indices
  - 8.5 Checking Normality Before Capability
  - 8.6 Capability for Non-Normal Data
  - 8.7 Short-Term Versus Long-Term Capability
  - 8.8 Centring a Process on Target
  - 8.9 Reducing Spread to Improve Capability
  - 8.10 Reporting Capability to Customers
- **9 Acceptance Sampling and Incoming Inspection** — 10 classes
  - 9.1 Why Sample Instead of Inspecting Everything
  - 9.2 Lots Batches and Lot Quality
  - 9.3 Single Sampling Plans
  - 9.4 Double and Multiple Sampling Plans
  - 9.5 Acceptable Quality Level Explained
  - 9.6 Operating Characteristic Curves
  - 9.7 Producer Risk and Consumer Risk
  - 9.8 Using Standard Sampling Tables
  - 9.9 Dispositioning Accepted and Rejected Lots
  - 9.10 Supplier Feedback After Inspection
- **10 Probability and Distributions for Quality** — 10 classes
  - 10.1 Basic Probability for Technicians
  - 10.2 Events and Combined Probabilities
  - 10.3 The Binomial Distribution in Inspection
  - 10.4 The Poisson Distribution for Defect Counts
  - 10.5 Using the Normal Distribution Tables
  - 10.6 Z Scores and Yield Estimates
  - 10.7 Confidence in Sample Results
  - 10.8 Sampling Error and Sample Size
  - 10.9 Simple Hypothesis Checks
  - 10.10 Making Decisions Under Uncertainty
- **11 Problem Solving with Quality Data** — 10 classes
  - 11.1 Turning Signals into Investigations
  - 11.2 Using Stratification to Locate Problems
  - 11.3 Correlation and Simple Regression
  - 11.4 Comparing Two Machines or Shifts
  - 11.5 Containment Actions for Defective Output
  - 11.6 Finding Likely Causes with Data
  - 11.7 Verifying Fixes with Before and After Data
  - 11.8 Standardising a Proven Fix
  - 11.9 Writing a Short Corrective Action Report
  - 11.10 Preventing Recurrence of Defects
- **12 Running a Quality Control Programme** — 10 classes
  - 12.1 Building a Control Plan for a Process
  - 12.2 Assigning Chart Ownership
  - 12.3 Training Operators to Use Charts
  - 12.4 Audit of Charts and Records
  - 12.5 Software and Spreadsheets for Control Charts
  - 12.6 Linking Charts to Customer Complaints
  - 12.7 Safety and Ethics in Reporting Data
  - 12.8 Daily Quality Review Routines
  - 12.9 Continuous Improvement of the Programme
  - 12.10 Capstone Practice with a Full Data Set

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