

# **Quality, Environmental and Health & Safety Tools and Methods**

## **Quality Management Systems and Tools**

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# ISO 9001:2000: Implementing an Effective Quality System

The ISO 9001:2000 standard is based on the process and systems approach to managing and improving your processes. Learn how to use the new standard to develop a quality system that aligns with your key business processes to drive improvement throughout the organization. Workshops in this seminar focus on identifying and addressing your organization's key goals and challenges, to help ensure you receive significant bottom line results from your QMS deployment

**Hours:** 8 a.m. – 4 p.m.

**Length:** 2 days

## Course Objectives:

Participants will learn:

- What the process approach is and why it's important
- The benefits of managing processes as systems
- How to identify key processes and link them to the organization's strategy
- How to develop metrics to monitor performance
- How to ensure continual process improvement
- How to develop and deploy the key support processes needed to maintain the QMS

## Who Should Attend:

Managers, team leaders, and others directly involved in the design, evaluation or implementation of a quality system to the new ISO 9001:2000 standard.

## Related Seminars

- ISO 9001 Internal Auditing

**Note:** Students receive an electronic competency matrix that will help organize and complete their determination of workplace competencies.

## Seminar Outline

### The Process Approach

- Why the Process Approach?
- Processes, Activities and Quality
- Benefits of the Process Approach

### Introduction to ISO 9001:2000 and the Eight Quality Management Principles

- The Structure of ISO 9001:2000
- The ISO 9000 Series
- The Eight Quality Management Principles
- Workshop: Linking your QMS to your Organization's Strategic Objectives
- Workshop: Critical Challenges that the QMS Must Meet

### Quality Management System

- General Requirements
- Identifying Key Processes
- QMS Documentation
- Workshop: Identifying your Key Processes
- Workshop: Key Process Metrics

### Management Responsibility

- Demonstrating Management Commitment
- Quality Policy and Objectives

- The Management Rep
- Internal Communication
- Management Review

### Resource Management

- Human Resources
- Workshop: Developing Competency Matrices
- Infrastructure
- Work Environment

### Product Realization

- Planning
- Determining Customer Expectations
- Customer Communications
- Design and Development
- Purchasing
- Product and Service Realization
- Control of Monitoring and Measuring Devices

### Measurement, Analysis and Improvement

- Monitoring and Measurement
- Controlling Nonconforming Product
- Analysis of Data
- Continual Improvement
- Corrective Action
- Preventive Action

# ISO/TS 16949 for Automotive Suppliers

The ISO/TS 16949 is a requirement for many suppliers to the automotive industry. Implementation and maintenance of this quality management system can either add non-value-added cost or it can be a driver for continual improvement and deployment of your strategic plan. This activity-based seminar shows you how to develop the systems and processes needed to satisfy the requirements of the specification while significantly improving your bottom line results.

**Hours: 8 a.m. – 4 p.m.**

**Length: 2 days**

## Course Objectives:

Participants will learn:

- The concepts of process and systems management
- How to identify their core business processes
- How the requirements of ISO/TS 16949 apply to each of these processes
- How to develop metrics for monitoring process effectiveness, and how to set meaningful quality objectives
- The importance of aligning their QMS with their organizational strategy

## Who Should Attend:

Executives, supervisors, internal auditors, managers and others directly involved in the design, upgrade or implementation of a quality management system to ISO/TS 16949.

## Related Seminars

- ISO/TS 16949 Internal Auditing
- Using Your QMS to Execute Your Balanced Scorecard
- APQP
- PPAP
- FMEA
- MSA
- SPC
- Related Core Tools for Internal Auditors

## Seminar Outline

### Overview of ISO/TS 16949

- The Purpose of any QMS
- The Process Approach
- The New ISO Philosophy
- Relationship to Other Standards
- Scope and Applicability

### Clause 4.0 – Quality Management System

- General Requirements
- Workshop – Identifying your Core Processes
- Workshop - Developing Process Metrics
- Document and Record Control

### Clause 5.0 – Management Responsibility

- Management Commitment
- Customer Focus
- Quality Policy
- Workshop – Developing or Evaluating your Policy
- Planning
- Responsibilities, Authorities and Communication
- Management Review

### Clause 6.0 – Resource Management

- Provision of Resources
- Human Resources
- Workshop – Identifying Competencies
- Workshop – Training SIPOC
- Infrastructure

### Clause 7.0 – Product Realization

- Benefits of Planning
- Planning Product Realization
- Workshop - Advanced Quality Planning SIPOC
- Customer Related Processes
- Purchasing
- Workshop – Purchasing SIPOC
- Product and Service Provision
- Workshop – Production SIPOC
- Control of Measuring Devices
- Workshop – Developing a Laboratory Scope

### Clause 8.0 – Measurement, Analysis and Improvement

- General Requirements
- Workshop – Identifying Statistical Tools
- Customer Satisfaction Monitoring
- Internal Audits
- Process Monitoring
- Workshop – Linking Process Measures to your Strategy
- Product Monitoring
- Control of Nonconforming Product
- Corrective and Preventive Action

### Change Process Model

- Managing the Change to a Process Approach

# ISO 9001:2000 for the Healthcare Industry

The ISO 9001 standard has been revised to better address the service sector. Find out how this powerful, proven model can be used to help the most out of your quality system. Case studies and examples specifically focus on the health care industry. The IWA-1 document for applying ISO 9001 to the healthcare industry will be used as the basis for this course. Workshops in this seminar focus on identifying and addressing your organization's key goals and challenges, to help ensure improvements to the bottom line.

**Hours: 8 a.m. – 4 p.m.**

**Length: 2 days**

## Course Objectives:

Participants will learn:

- What the process approach is and why it's important
- The benefits of ISO 9001 in a Health Care environment
- How to identify key processes and link them to the organization's strategy
- How to develop metrics to monitor performance
- How to ensure continual process improvement
- How to develop and deploy the key support processes needed to maintain the QMS
- How to integrate the ISO 9001 QMS with the Joint Commission accreditation standards

## Who Should Attend:

Healthcare administrators, department heads, supervisors, continuous improvement coordinators, physicians and others involved in assurance of quality within a healthcare setting.

## Related Seminars

ISO 9001 Internal Auditing

## Seminar Outline

### Introduction

- The Purpose of any QMS
- ISO 9001 in a Healthcare Context
- The Process Approach
- The Systems Approach
- QMS Benefits
- The New ISO Philosophy

### Quality Management System

- General Requirements
- Identifying Key Processes
- QMS Documentation
- Workshop: Identifying your Key Processes
- Workshop: Key Process Metrics
- IWA Recommendations
- JCAHO Comparisons
- 

### Management Responsibility

- Demonstrating Management Commitment
- Quality Policy and Objectives
- The Management Rep
- Internal Communication
- Management Review
- IWA Recommendations
- JCAHO Comparisons

### Resource Management

- Human Resources
- Workshop: Developing Competency Matrices
- Infrastructure

- Work Environment
- IWA Recommendations
- JCAHO Comparisons

### Product Realization

- Planning
- Determining Customer Expectations
- Customer Communications
- Design and Development
- Purchasing
- Product and Service Realization
- Control of Monitoring and Measuring Devices
- IWA Recommendations
- JCAHO Comparisons

### Measurement, Analysis and Improvement

- Monitoring and Measurement
- Controlling Nonconforming Product
- Analysis of Data
- Continual Improvement
- Corrective Action
- Preventive Action
- IWA Recommendations
- JCAHO Comparisons

# Improving the Management of Education Using ISO 9001:2000

The quality of education is an essential indicator of the health of communities, the key driver of success of universities, and a recognized predictor of the economic performance of the nation. The process approach of ISO 9001:2000 can be used to improve the design, delivery and performance of the educational process. Using the ASQ Z1.11-2002 guidance document, this seminar shows you how to design and deploy a process-based quality

**Hours: 8 a.m. – 4 p.m.**

**Length: 2 days**

## Course Objectives:

Participants will learn:

- The concepts of process and systems management
- How to identify their core educational processes
- How the requirements of ISO 9001 apply to each of these processes
- How to develop metrics for monitoring process effectiveness, and how to set meaningful quality objectives
- The importance of aligning their QMS with their strategic goals

## Who Should Attend:

Administrators, educators, staff and others directly involved in the maintenance and improvement of the educational system.

## Related Seminars

- ISO 9001 Internal Auditing

## Seminar Outline

### The Process Approach

- Why the Process Approach?
- Processes, Activities and Quality
- The Process Approach in Education
- Benefits of the Process Approach

### Introduction to ISO 9001:2000 and the Eight Quality Management Principles

- The Structure of ISO 9001:2000
- The ISO 9000 Series
- The Eight Quality Management Principles

### Quality Management System

- General Requirements
- Identifying Key Processes
- QMS Documentation

### Management Responsibility

- Demonstrating Management Commitment
- Quality Policy and Objectives
- The Management Rep
- Customer Focus – Stakeholders in the Educational Community
- Management Review

### Resource Management

- Human Resources
- Infrastructure
- Work Environment

### Service Realization – Providing Quality Education

- Planning
- Determining Stakeholder Expectations
- Stakeholder Communications
- Design and Development
- Purchasing
- Service Realization
- Controlling Tests, Surveys and other Measurement Instruments

### Measurement, Analysis and Improvement

- Monitoring and Measurement of Performance
- Controlling Nonconforming Products and Services
- Analysis of Data
- Continual Improvement
- Corrective Action
- Preventive Action

# ISO/IEC 17025 for Laboratory and Test Organizations

The ISO/TS 16949 technical specification requires outside calibration and testing organizations to maintain an accredited quality system based on ISO 17025. If you provide calibration or testing services to outside automotive organizations then you need ISO/IEC 17025. Find out how to design and implement a laboratory management system that improves the quality of your results and increases your bottom line.

**Hours: 8 a.m. – 4 p.m.**  
**Length 2 days**

## Course Objectives:

Participants will learn:

- The requirements of ISO/IEC 17025
- Process-based management, and how to develop a process-based QMS
- How to develop and deploy a QMS based on ISO/IEC 17025
- The general steps involved in accreditation by AALA or NVLAP

## Who Should Attend:

Executives, technicians, internal auditors, technical managers and others directly involved in the design, upgrade or implementation of a laboratory quality system to ISO/IEC 17025.

## Related Seminars

- ISO 9001 Internal Auditing
- ISO 9001:2000
- ISO/TS 16949:2002

## Seminar Outline

### Introduction to ISO/IEC 17025

- The Structure of ISO/IEC 17025
- Overview of ISO/IEC 17025
- The ISO Quality Series

### Part I – The Management System Requirements

- Organization
- Quality System
- Document Control
- Review of Requests, Tenders and Contracts
- Subcontracting of Tests and Calibrations
- Purchasing Services and Supplies
- Service to the Client
- Complaints
- Control of Nonconforming Testing and/or Calibration Work
- Corrective Action
- Preventive Action
- Control of Records
- Internal Audits
- Management Reviews

### Part II – Technical Requirements

- General
- Personnel
- Accommodation and Environmental Conditions
- Test and Calibration Methods and Method Validation
- Equipment
- Measurement Traceability
- Sampling
- Handling of Test and Calibration Items
- Assuring the Quality of Test and Calibration Results
- Reporting the Results

### Part III – Key Steps for Implementation

- Planning
- Organizing
- Procedure Development
- Training
- Rolling Out the System
- System Evaluation
- The Accreditation Process

# Strategic Quality Management - Using Your QMS to Execute Your Business Strategy

Seven out of 10 organizations fail to achieve their strategic goals due to an inability to execute their strategy. This seminar looks at how to turn your quality management system into a powerful tool to help you successfully deploy and execute your business plan and strategy.

**Hours:** 8 a.m. – 4 p.m.  
**Length:** 2 days

## Course Objectives:

Participants will learn:

- The general types of strategies, and the challenges of strategy deployment
- The need for a balanced scorecard of strategic indicators
- Linkages between the balanced scorecard and an ISO 9001 based QMS
- How to map strategic goals to internal processes that drive them
- How to align process metrics with strategic indicators

## Who Should Attend:

Executives, supervisors, internal auditors, managers and others directly involved in the development and/or deployment of the organization's strategic plan, or in operation and maintenance of the quality management system.

## Related Seminars

- ISO/TS 16949
- ISO 9001:2000
- Internal Auditing for Effectiveness and Strategic Alignment
- Business Operating Systems and Balanced Scorecards

## Seminar Outline

### Business Strategy

- Mission, Vision and Values
- Strategic Goals
- The Three Primary Business Strategies
- Execution
- Workshop – Identifying your Organization's Basic Strategy

### Measuring Strategic Performance

- Traditional Financial Indicators
- Business Operating Systems
- Balanced Scorecards
- Strategic Objectives
- Strategy Deployment
- Workshop: Review of Current Strategic Objectives and Plans

### Quality Management System

#### Linkages

- Customer Perspective
- Internal Business Process Perspective
- Learning and Growth Perspective
- The Systems Approach to Management
- The Process Approach to Management

### Monitoring Process Performance

- Continual Improvement of Processes

### Strategy Deployment Through the Quality Management System

- Causal Models – Mapping Cause and Effect
- Workshop – Using the Enhanced SIPOC as a Tools for Strategic Alignment
- Reviewing and Expanding the Scope of the Quality Management System
- Workshop – Identifying Additional Strategic Processes
- Aligning Process Metrics with Strategic Goals
- Developing Process Criteria to Ensure Performance
- Workshop – Evaluating Current Process Metrics and Criteria
- Improving Strategic Process Performance
- Auditing for Strategic Performance

### Quality Objectives and Strategic Initiatives

- Aligning Quality Initiatives with the Organization's Strategy

**Note:** This seminar is only for those organizations with a formal strategic plan and/or balanced scorecard. Other organizations should first take the Business Operating Systems and Balanced Scorecard seminar.

# ISO 9001:2000 Internal Auditing

An effective internal audit program is the key to successful certification and improvement of your quality system. This highly acclaimed, activity-based seminar will show you how to plan and conduct process-based audits to the ISO 9001:2000 quality system standard. An actual audit is included in the 3-day format, a case study audit in the 2-day format.

**Hours:** 8 a.m. – 4 p.m.

**Length:** 2 days

## Course Objectives:

Participants will learn:

- How to plan an audit
- How to develop an audit strategy
- How to develop and use audit checklists
- How to conduct an audit
- How to audit for effectiveness along with conformance
- How to avoid conflict and make the auditee feel comfortable
- How to document audit findings

## Who Should Attend:

Internal quality auditors, audit program managers, supplier quality engineers and other individuals involved in internal auditing to ISO 9001:2000.

## Related Seminars

- ISO 9001:2000
- Advanced Auditing Workshop
- Internal Auditing for Strategic Performance

*Note: Students receive a set of electronic checklists that they can use as a foundation for their QMS Audit.*

## Seminar Outline

### ISO 9001:2000 and the Process Approach to Quality Management

- Process Defined
- The Process Approach
- Customer Processes
- Overview of ISO 9001:2000

### Introduction to Process-Based Auditing

- Overview of the Audit Process
- Auditing Processes vs. Elements

### Phase I - Audit Planning

- Audit Scope and Objectives – Selecting the Processes to be Audited
- Identifying and Collecting Information
- Planning the Audit Strategy Using the Process Approach
- The Audit Plan
- Workshop - Developing the Audit Checklist
- Review of the Process Audit Checklists
- Workshop - Planning the Audit

### Phase II - Audit Execution

- Interviewing Skills
- Interviewing Challenges
- Auditing for Effectiveness
- Managing Audit Conflict
- Workshop – Audit Simulation

- Audit Strategies
- Workshop – Conducting the Audit (real or case study audit)
- Documenting Observations
- Workshop – Documenting Findings
- The Closing Meeting

### Phase III – Post-Audit Activities

- The Audit Report
- Audit Corrective Actions

**Note:** To receive the most benefit from this course, students should have already attended the ISO 9001:2000 seminar, or have a good working knowledge of this standard.

**New!** The company will also receive a copy of the new book, *The Management System Auditor's Handbook*, published by ASQ Quality Press.

# ISO/TS 16949 Internal Auditing

An effective internal audit program is the key to successful certification and improvement of your quality system. This highly acclaimed, activity-based seminar will show you how to plan and conduct process-based audits to the automotive ISO/TS 16949:2002 quality system specification. An actual audit is included in the 3-day format, a case study audit in the 2-day format.

**Hours:** 8 a.m. – 4 p.m.

**Length:** 2 – 3 days

## Course Objectives:

Participants will learn:

- How to plan an audit
- How to develop an audit strategy
- How to develop and use audit checklists
- How to conduct an audit
- How to audit for effectiveness along with conformance
- How to avoid conflict and make the auditee feel comfortable
- How to document audit findings

## Who Should Attend:

Internal quality auditors, audit program managers, supplier quality engineers and other individuals involved in internal auditing to ISO/TS 16949.

## Related Seminars

- ISO/TS 16949
- Related Core Tools for Internal Auditors
- Advanced Auditing Workshop
- Internal Auditing for Strategic Performance

**Note:** Students receive a set of electronic checklists that they can use as a foundation for their QMS Audit.

## Seminar Outline

### ISO/TS 16949 and the Process Approach to Quality Management

- Process Defined
- The Process Approach
- Customer Processes
- Overview of ISO/TS 16949
- The Related Core Tools
- Customer Specific Requirements

### Introduction to Process-Based Auditing

- Overview of the Audit Process
- Auditing Processes vs. Elements

### Phase I - Audit Planning

- Audit Scope and Objectives – Selecting the Processes to be Audited
- Identifying and Collecting Information
- Planning the Audit Strategy Using the Process Approach
- The Audit Plan
- Workshop - Developing the Audit Checklist
- Review of the Process Audit Checklists
- Workshop - Planning the Audit

### Phase II - Audit Execution

- Interviewing Skills
- Interviewing Challenges
- Auditing for Effectiveness

- Managing Audit Conflict
- Workshop – Audit Simulation
- Audit Strategies
- Workshop – Conducting the Audit (real or case study audit)
- Documenting Observations
- Workshop – Documenting Findings
- The Closing Meeting

### Phase III – Post-Audit Activities

The Audit Report

- Audit Corrective Actions

**Note:** To receive the most benefit from this course, students should have already attended the ISO/TS 16949 seminar, or have a good working knowledge of this standard.

**New!** The company will also receive a copy of the new book, *The Management System Auditor's Handbook*, published by ASQ Quality Press.

# Related Core Tools for Internal Auditors

Both GM and Ford require that internal auditors be trained in the core tools (APQP, FMEA, MSA, PPAP, SPC). This intense 3-day class provides auditors with a solid understanding of the concepts for each of the core tools, and most importantly, how to audit their application in an automotive environment. The DaimlerChrysler, Ford and GM Customer-Specific requirements are also covered within the course content to provide exposure and audit strategies for these important requirements.

**Hours:** 8 a.m. – 4 p.m.

**Length:** 3 days

## Course Objectives:

Participants will learn:

- The concepts and methods behind each of the core tools
- Strategies for auditing each of the tools
- How to audit the customer-specific requirements

## Who Should Attend:

Internal quality auditors, audit program managers, supplier quality engineers and other individuals involved in internal auditing to ISO/TS 16949:2002.

Please note that the overview of the core tools assumes previous experience and/or training in the automotive approach to process-based auditing. Auditors with no previous exposure or training in the process approach should consider attending the ISO/TS 16949 Internal Auditing course below.

## Related Seminars

- ISO/TS 16949:2002
- ISO/TS 16949 Internal Auditing

**Note:** *Students receive a comprehensive set of checklists for auditing the core tools*

## Seminar Outline

### Introduction

- The Importance of Advanced Quality Planning
- APQP and ISO/TS 16949:2000
- Key APQP Concepts

### APQP Phase 1 – Plan and Define

- Requirements and Audit Points

### APQP Phase 2 – Product Design and Development

- Requirements and Audit Points
- **DFMEA:** Concepts, Development and Audit Points
- *Workshop: Evaluating DFMEAs*

### APQP Phase 3 – Process Design and Development

- Requirements and Audit Points
- **PFMEA:** Concepts, Development and Audit Points
- *Workshop: Developing and Evaluating PFMEAs*

### APQP Phase 4 – Product and Process Validation

- Requirements and Audit Points
- **SPC:** Process Capability
- **MSA:** Concepts, Development and Audit Points

- Workshop: Performing and Evaluating Gage Studies
- **PPAP:** Development and Audit Points
- Workshop: Evaluating PPAP Packages

### APQP Phase 5 – Feedback, Assessment and Corrective Action

- Requirements and Audit Points
- **SPC:** Concepts
- Control Charts for Variables
- Control Charts for Attributes
- Control Chart Interpretation
- *Workshop: Evaluating Control Charts*
- Customer Satisfaction

**New!** The company will also receive a copy of the new book, *The Management System Auditor's Handbook*, published by ASQ Quality Press.

# Advanced Auditing Techniques

This hands-on workshop shows you how to get the most out of your audit program by showing you how to perform combined QMS/EMS audits that focus on effectiveness, improvement and strategic alignment, rather than just compliance. Learn how to use your audit program to drive improvement and deployment of the organization's strategic plan. For experienced auditors only!

**Hours: 8 a.m. – 4 p.m.**  
**Length 2 days**

## Course Objectives:

Participants will learn:

- How to audit for effectiveness
- How to develop an effective audit strategy
- How to develop a proactive audit schedule
- How to audit for strategic alignment
- How to audit for best practices
- How to plan and conduct combined audits
- Advanced interviewing techniques

## Who Should Attend:

Internal quality auditors, EH&S auditors, audit program managers, and other individuals involved in internal auditing to ISO 9001, ISO 14001, ISO/TS 16949 and OHSAS 18001.

## Related Seminars

- ISO 9001 Internal Auditing
- ISO/TS 16949 Internal Auditing
- ISO 14001 Internal Auditing
- OHSAS 18001 Internal Auditing
- Related Core Tools
- Strategic Quality Management Systems

## Seminar Outline

### Understanding the Purpose of the Audit

- The Compliance Audit
- The Performance Audit
- The Management System Audit
- The Strategic Audit

### Performing Combined Audits

- Benefits of Combined Audits
- Areas of Commonality – ISO 9001, ISO 14001 and OHSAS 18001
- Skills Needed
- How to Plan an Integrated Audit
- Developing the Audit Schedule

### Auditing for Effectiveness

- Effective Implementation vs. Effectiveness in Results
- Why Audit for Effectiveness?
- How to Audit for Effectiveness

### Pre-Audit Activities – Basic Planning

- Essential Steps in Audit Planning – An Overview
- Determining What to Audit – The Process Approach and Building the Audit Schedule
- Deciding Where to Focus
- Developing an Effective Audit Plan

### Pre-Audit Activities - Audit Strategies

Why You Need a Strategy

- Macro Strategies
- Micro Strategies

### Advanced Interviewing Tips and Techniques

- Advanced Interviewing Techniques
- The Top Ten Things to Avoid

### Auditing for Best Practices

- Definition of a Best Practice
- Verifying Best Practices
- Best Practices Database
- Identifying the Enablers of Performance

### Auditing for Strategic Alignment

- Strategic Plans
- Auditing for Strategy Deployment

### Conducting Effective Closing Meetings

### Post-Audit Activities

- Writing Effective Audit Finding Statements
- When and How to Recommend Corrective Action

**New!** The company will also receive a copy of the new book, *The Management System Auditor's Handbook*, published by ASQ Quality Press.

# Business Operating Systems and Balanced Scorecards

The ISO 9001:2000 standard and ISO/TS 16949:2002 require that you define and monitor your key business processes. More importantly, success in the marketplace demands it. Learn how to integrate the monitoring requirements of your quality management system into a business operating system that addresses the needs of all of your important stakeholders and how to align existing operations with your strategic plan.

**Hours:** 8 a.m. – 4 p.m.

**Length:** 2 days

## Course Objectives:

Participants will learn:

- The importance of developing a balanced set of BOS scorecard metrics
- How to use the BOS to align processes with strategy
- How to conduct efficient, effective BOS reviews

## Who Should Attend:

Executives, managers and champions involved in the operation, monitoring and improvement of key business processes.

## Related Seminars

- ISO 9001:2000
- ISO/TS 16949:2002
- Strategic Quality Management

## Seminar Outline

### Business Strategy

- Basic Business Strategies
- Mission, Vision and Values
- Strategy Execution
- Failure Modes for Strategy Execution – Why Strategies Fail
- The Balanced Scorecard
- Strategy Maps

### Business Operating System Overview

- BOS Fundamentals
- Components of the BOS
- The Importance of a Balanced BOS

### Metrics and the Quality Management System

- What is a metric
- Benefits of metrics
- QMS models and the use of metrics
- Requirements for Process Monitoring
- The Importance of Aligning Process Metrics with Strategic Indicators
- BOS – the Link Between Process and Strategy

### Identifying Key Measurables

- What makes a Metric Good?

- The Importance of Linking Measurables to Expected Results
- Customer Expectations
- Business Objectives
- Organizational Capability
- Process Improvement

### Deploying Metrics

- Policy Deployment
- Deploying Metrics to Align Processes with Strategy
- Communicating Metrics to the Workforce

### Reviewing Performance

- The BOS Review Process
- Addressing Areas of Concern
- Integrating BOS with Management Review

# Process Mapping and Documentation Development

Learn how to identify your core business processes, their sequence, interactions and key inputs, outputs and controls. Then learn how to describe your processes in documentation that provides clear, straightforward guidance along with clear descriptions of the critical inputs, outputs and metrics needed to monitor and improve the process. Participants will be shown how to use the best features of Microsoft Word™ and Visio™ to create documents that are easy to use.

**Hours:** 8 a.m. – 4 p.m.

**Length:** 1 day

## Course Objectives:

Participants will learn:

- Why the process and systems approach to management provides better results
- How to analyze and describe a process using flowcharts and procedures
- How to use Microsoft Visio™ to develop flowcharts
- How to create documentation that is easy to use and value-added

## Who Should Attend:

Managers, staff, team leaders and other involved in the development of quality system documentation.

## Related Seminars

- ISO 9001:2000
- ISO/TS 16949:2002

**Note:** *Students will receive instruction on how to use Microsoft Visio™ flowcharting software to develop process documentation. While no previous experience with Visio is required, students should have access to the program for maximum effectiveness after the training.*

## Seminar Outline

### Overview Of ISO 9001:2000 And The Process Approach

- Why The Process Approach?
- Process Inputs, Outputs And Controls
- The Process Model
- The Structure Of ISO 9001:2000 And ISO/TS 16949
- The New ISO Philosophy: Effectiveness
- Identifying Your Core Processes

### Process Mapping

- Types Of Process Maps
- Format Options
- Getting Ready To Map The Process
- Interviewing Techniques
- The Importance of “Go See”
- Flowcharting Using Microsoft Visio™
- Finalizing The Process Map
- Using The Process Map To Improve The Process
- Workshop: Mapping a Current Process

### Quality Management System Documentation Requirements

- General Requirements
- QMS Documentation
- Identifying Process Objectives

- Measuring Process Effectiveness
- Basic Boilerplate: Purpose, Scope And Responsibilities
- Identifying Key Inputs And Resources
- Identifying The Key Outputs
- Identifying Process Criteria And Metrics
- Structuring Documentation To Get Results:
- Supplementing Process Flowcharts With Text
- Tying Documentation Together
- Workshop: Developing Process Documentation

### Procedure Verification and Improvement

- Procedure Verification
- Operator Review
- Walkthrough
- Internal Audits

# Benchmarking

The pressure on the organization to improve its performance and competitiveness is greater than ever. This seminar shows you how to use benchmarking to continually improve throughout the organization, and to leapfrog your competitors in areas of strategic importance. Instead of learning from your mistakes, avoid mistakes and false starts altogether! Let us show you how in this hands-on two-day seminar.

**Hours: 8 a.m. – 4 p.m.**

**Length: 2 days**

## Course Objectives:

Participants will learn:

- How benchmarking can help to achieve competitive advantage
- How to use benchmarking to achieve strategic initiatives
- How to identify strategic benchmarking topics
- How to establish a mindset of local benchmarking for best practices
- How to plan a study
- How to conduct a study
- How to use the results of a study to promote improvement

## Who Should Attend:

Managers, executives, quality professionals and process owners responsible for improving the effectiveness and efficiency of their processes.

## Related Seminars

- ISO 9001:2000
- ISO/TS 16949:2002

## Seminar Outline

### Overview of Benchmarking

- Business Trends
- The Modern Competitive Environment
- Competitive Advantage
- Business Strategy
- Benchmarking Categories
- Benchmarking Models

### Benchmarking Foundation

- Benchmarks vs. Benchmarking
- Process Management
- Systems Management
- Modern Quality Management Systems
- The Eight Quality Management System Principals

### Planning and Organizing

- Key Business Processes
- Core Competencies
- Critical Success Factors
- Choosing the Benchmarking Project
- Identifying Study Customers
- Obtaining Management Support
- Selecting and Organizing the Team

### Analyzing Current Processes

- Defining the Process
- Mapping the Process
- Verifying Performance

- Narrowing the Scope

### Researching and Identifying Benchmarking Partners

- Determining the Benchmarking Level
- Seeing What's Available
- Collecting Information
- Screening Potential Partners
- Making Initial Contact

### Performing the Benchmarking Study

- Pre-visit Research
- Visit Preparation
- Conducting the Visit
- Post-Visit Activities

### Data Analysis and Reporting

- Data Review
- Data Analysis
- The Benchmarking Report

### Implementing the Changes

### The Benchmarking Mindset

- Local Benchmarking for Best Practices

# Advanced Product Quality Planning

It costs far less to detect and prevent a problem than it does to fix it after it has been designed into the product or the process. This powerful 2-day seminar shows you how to make the APQP process your most important tool for ensuring competitive advantage. *Note that this seminar can be customized to include the quality planning process of your primary customers.*

**Hours:** 8 a.m. – 4 p.m.

**Length:** 2 days

## Course Objectives:

Participants will learn:

- The structure of the APQP process and interrelationships to ISO/TS 16949 and the organization's quality planning process
- DFMEA and PFMEA concepts and techniques
- How to use the methods embedded in the APQP to ensure error-free launches
- Important customer-specific requirements relating to the advanced quality planning process

## Who Should Attend:

Managers, team leaders, engineers, quality professionals, contract and sales professionals, procurement specialists and others who serve as members of the product and process quality planning team.

## Related Seminars

- ISO/TS 16949:2002
- Design FMEA
- Process FMEA
- Measurement Systems Analysis
- PPAP
- Statistical Process Control

## Seminar Outline

### Introduction to Quality Planning

- Quality Planning Defined
- The Need for Planning
- The APQP Process
- Components of APQP
- The APQP Team

### Phase 1 Plan and Define

- Phase Inputs
- Obtaining the Voice of the Customer
- Phase Outputs
- The Product Assurance Plan
- Workshop: Phase 1 Inputs and your Quality Planning Process
- Workshop: Linking Inputs to Outputs

### Phase 2 Product Design and Development

- Phase Inputs
- Phase Outputs
- Design FMEA
- DFM/DFA
- DFE
- Design Reviews
- Prototype Control Plan
- Workshop: Phase 2 Inputs and your Quality Planning Process
- Workshop: Linking Inputs to Outputs

### Phase 3 Process Design and Development

- Phase Inputs

- Phase Outputs
- Process Flowchart
- Process FMEA
- Workshop: Process FMEA
- Process Instructions
- Pre-Launch Control Plan
- Workshop: Phase 3 Inputs and your Quality Planning Process
- Workshop: Linking Inputs to Outputs

### Phase 4 Product and Process Validation

- Phase Inputs
- Phase Outputs
- Production Trial Run
- Process Capability Study
- Workshop: Process Capability
- Measurement Systems Evaluation
- Production Control Plan
- Workshop: Phase 4 Inputs and your Quality Planning Process
- Workshop: Linking Inputs to Outputs

### Phase 5 Feedback, Assessment and Corrective Action

- Phase Inputs
- Phase Outputs
- Customer Satisfaction
- Lessons Learned
- Control Plan Structure and Completion

# Process Failure Mode and Effects Analysis

It costs far less to detect and prevent a problem than it does to fix it after it has been designed into the process. The PFMEA is a structured approach to identifying and prioritizing potential problems before they are embedded into the process. This hands-on 2-day seminar shows you how to perform Process FMEAs that get results and save you money. **Note:** Students will analyze and develop a PFMEA for a current organizational process.

**Hours:** 8 a.m. – 4 p.m.

**Length:** 2 days

## Course Objectives:

Participants will learn:

- The importance of the PFMEA and how it can be used to error-proof a process
- The importance of maintaining the PFMEA current
- A systematic, consistent process for developing PFMEAs that will identify process weaknesses
- How to use the PFMEA to identify potential special characteristics
- How the PFMEA is used to build the Control Plan

## Who Should Attend:

Managers, team leaders, engineers, production operators, quality and contract professionals, procurement specialists and others who serve as members of the FMEA team.

## Related Seminars

- ISO/TS 16949:2002
- Design FMEA
- Advanced Product Quality Planning
- Measurement Systems Analysis
- PPAP

## Seminar Outline

### Risk and the FMEA

- The Nature of Risk
- The Failure Sequence
- The FMEA Process
- FMEA and APQP

### FMEA Basics

- The Function of the FMEA
- FMEA Structure
- Who is the Customer?
- Who is the Team?
- The FMEA as a Living Document

### Mapping the Process

- The Importance of Understanding the Process
- Process Mapping
- Identifying the Micro-Flow
- Workshop: Mapping your Process Flow

### Identifying Failure Modes

- Systematically Identifying Potential Failure Modes
- Workshop: Identifying Failure Modes

### Identifying Effects

- Systematically Identifying the Effects
- Ranking the Severity
- Workshop: Identifying and Ranking Effects
- Using the FMEA to Identify Special Characteristics

### Identifying Causes

- Systematically Identifying the Causes
- Ranking Cause Occurrence
- Workshop: Identifying and Ranking Causes

### Identifying Controls

- Prevention vs. Detection
- Workshop: Identifying and Ranking Detection Controls

### Calculating the Risk Priority Number

- Calculating RPN
- Using the Rankings to Prioritize Risk Reduction

### Completing the FMEA Form

- Workshop: Calculating RPN and Completing the AIAG FMEA Form

### Risk Reduction Actions

- Reducing the Risk Through Prevention
- Reducing the Risk Through Detection
- Re-evaluating the Risk

### Using the FMEA to Build the Control Plan

- Workshop: Building the Control Plan from the FMEA

# Design Failure Mode and Effects Analysis

It costs far less to detect and prevent a problem than it does to fix it after it has been designed into the product. The DFMEA is a structured approach to identifying and prioritizing potential problems before they are embedded into a product. This hands-on 2-day seminar shows you how to perform Design FMEAs that get results and save you money. **Note:** Students will analyze and develop a DFMEA for a current product.

**Hours:** 8 a.m. – 4 p.m.

**Length**            2 days

## Course Objectives:

Participants will learn:

- The importance of the DFMEA and how it can be used to reduce the risk of product failures
- The importance of maintaining the DFMEA current
- A systematic, consistent process for developing DFMEAs that will identify product weaknesses
- How to use the DFMEA to identify potential special characteristics
- How the DFMEA is used to help build the PFMEA

## Who Should Attend:

Managers, team leaders, engineers, design team members, quality and contract professionals, procurement specialists and others who serve as members of the FMEA team.

## Related Seminars

- ISO/TS 16949:2002
- Process FMEA
- Advanced Product Quality Planning
- PPAP

## Seminar Outline

### Risk and the FMEA

- The Nature of Risk
- The Failure Sequence
- The DFMEA Process
- DFMEA and APQP

### FMEA Basics

- The Function of the DFMEA
- DFMEA Structure
- Who is the Customer?
- Who is the Team?
- The DFMEA as a Living Document

### Mapping the Process

- The Importance of Understanding the Product
- Component DFMEA vs. Subassembly DFMEA
- Identifying the Product Features and Functions
- Workshop: Identifying Product Features and Functions

### Identifying Failure Modes

- Systematically Identifying Potential Failure Modes
- Workshop: Identifying Failure Modes

### Identifying Effects

- Systematically Identifying the Effects of Failures
- Ranking the Severity
- Workshop: Identifying and Ranking Effects

- Using the DFMEA to Identify Special Characteristics

### Identifying Causes

- Systematically Identifying the Causes
- Ranking Cause Occurrence
- Workshop: Identifying and Ranking Causes

### Identifying Controls

- Prevention vs. Detection
- Workshop: Identifying and Ranking Detection Controls

### Calculating the Risk Priority Number

- Calculating RPN
- Using the Rankings to Prioritize Risk Reduction

### Completing the DFMEA Form

- Workshop: Calculating RPN and Completing the AIAG FMEA Form

### Risk Reduction Actions

- Reducing the Risk Through Prevention
- Reducing the Risk Through Detection
- Re-evaluating the Risk

# Measurement Systems Analysis

Understanding the variation contributed by your measurement systems is a prerequisite to understanding and reducing the variation in your processes and products. This hands-on two day seminar thoroughly explains the concepts behind MSA and demonstrates the proper techniques for performing variable and attributes gage studies.

Students also see how to perform the calculations using Minitab™ and Microsoft Excel.

**Hours: 8 a.m. – 4 p.m.**

**Length 2 days**

## Course Objectives:

Participants will learn:

- The methods and techniques presented in the AIAG MSA reference manual, 3<sup>rd</sup> edition
- The concepts associated with measurement system linearity, stability, bias, repeatability and reproducibility
- How to conduct attribute and variable gage studies
- How to calculate and evaluate the results of the gage studies

## Who Should Attend:

QA specialists, process engineers, metrology staff, and others involved in planning and conducting gage studies.

## Related Seminars

- ISO/TS 16949:2002
- Design FMEA
- Process FMEA
- Advanced Product Quality Planning
- PPAP

**Note:** the organization will need to supply production parts and gages to support the workshops. Details will be provided by the instructor prior to the seminar.

## Seminar Outline

### Introduction to MSA

- Relationship with ISO/TS 16949
- Relationship with APQP
- The AIAG MSA Manual

### Understanding Variation

- Variation in Real Life
- Process Variation
- Measurement System Variation
- Workshop: Sources of Measurement System Variation
- The Impact of Variation

### Introduction, Purpose and Terminology

- Basic Terminology
- Standards and Traceability
- Equipment Terminology
- Location Variation Terminology
- Width Variation Terminology

### Measurement System Planning

- ISO/TS 16949 Requirements
- PPAP Requirements
- Phase 1 and 2 Studies
- Measurement System Strategy
- Study Considerations
- Study Preparations
- General Study Guidelines

### Bias, Linearity and Stability Studies

- Determining Stability
- Determining Linearity
- Determining Bias

### Determining Repeatability and Reproducibility

Determining GR&R

- Acceptance Criteria
- Range Method
- Workshop: Conducting a Variable Gage Study
- Average and Range Method
- Graphical Analysis
- ANOVA Method

### Analyzing Attribute Measurement Systems

- Attribute vs. Variable Measurements
- Cross Tab Method
- Signal Detection Method
- Workshop: Conducting an Attribute Gage Study
- Analytic Method

# Statistical Process Control

Statistical Process Control can be a cost effective and efficient technique for ensuring defect-free product and for reducing process variation and waste. It can also be a costly, non-value-added exercise if done improperly or if applied to the wrong product/process characteristics. This seminar will describe the basic concepts important for understanding SPC and the proper methods for developing and monitoring control charts. Students also see how to perform the calculations using Minitab™ and Microsoft Excel.

**Hours: 8 a.m. – 4 p.m.**

**Length 2 days**

## Course Objectives:

Participants will learn:

- The concepts of variation and process control
- How to determine where and which type of control charts should be used
- How to develop a sampling plan
- The steps needed to develop and deploy control charts
- How to use Minitab to perform statistical calculations
- How to interpret control charts, and actions that should be taken, or not taken, based on the results

## Who Should Attend:

QA specialists, process engineers, supervisors, managers, production operators and other involved in developing, deploying and monitoring control charts.

## Related Seminars

- ISO/TS 16949:2002
- Design FMEA
- Process FMEA
- Advanced Product Quality Planning
- PPAP
- MSA

## Seminar Outline

### SPC in Automotive Applications

- Relationship with ISO/TS 16949
- Relationship with APQP
- The AIAG SPC Manual

### Statistical Terms and Concepts

- What is SPC
- Processes, Systems and Common and Special Cause
- Measures of Central Tendency
- Measures of Variation

### Understanding Variation

- Common and Assignable Cause Variation
- Statistical Control
- Control Charts
- Statistical vs. Specification Control
- The SPC Process

### Variable Control Charts

- X-bar and R Charts
- Workshop: Developing an X-bar and R Chart
- X-bar and s Charts
- Individuals-Moving Range Charts

### Determining Process Capability

- PPAP Requirements

- Process Capability Indices
- Determining Process Capability
- Workshop: Calculating Process Capability
- Workshop: Evaluating Current Capability Studies

### Attribute Control Charts

- Attributes vs. Variables
- p Charts
- Workshop: p Chart Construction
- np Charts
- c Charts
- u Charts

### Sampling Theory

- Determining Where Statistical Monitoring is Needed
- Sampling and Subgrouping Principles
- Rational Subgrouping
- Workshop: Developing a Sampling Plan

### Interpretation of Control Charts

- Out of Control Signals
- Trends
- Reaction Plans
- Tampering
- Workshop: Tampering

# Production Part Approval Process

This hands-on course describes the Production Part Approval Process used by Ford, General Motors, DaimlerChrysler and other automotive original equipment manufacturers. The course will be revised and will feature the new PPAP 4<sup>th</sup> edition, once released.

**Note:** Students will evaluate several of the organization's PPAP packages as a workshop during the

**Hours:** 8 a.m. – 4 p.m.

**Length:** 1 day

## Course Objectives:

Participants will learn:

- The fundamental requirements of PPAP, when they apply, and how to comply
- The relationship between PPAP, ISO/TS 16949, APQP, SPC, FMEA and MSA
- The core requirements for the Production Trial Run
- Submission levels and what must be submitted for each level
- When they must notify the customer and possibly submit for approval

## Who Should Attend:

Managers, engineers, team leaders, launch team leaders, quality engineers, process engineers, production operators and others involved in product and process launch and change control.

## Related Seminars

- ISO/TS 16949:2002
- Advanced Product Quality Planning
- Related Core Tools for Internal Auditors

## Seminar Outline

### Introduction to PPAP

- Applicability
- Relationship to ISO/TS 16949
- Relationship with APQP
- The 19 Items of PPAP
- Organization of the AIAG PPAP Manual

### Requirements

- General Requirements
- Significant Production Run
- Design Records
- Authorized Engineering Changes
- Engineering Approvals
- DFMEA
- Process Flow Diagrams
- PFMEA
- Dimensional Results
- Engineering Test Results
- Initial Process Studies
- Measurement System Analysis
- Qualified Laboratory Documentation
- Control Plan
- Bulk Material Requirements Checklist
- Appearance Approval Request
- Part Submission Warrant
- Sample Parts
- Checking Aids
- Master Samples
- Customer-specific Requirements

### Customer Notification and Submission Requirements

- Customer Notification
- Submission to the Customer
- Situations Where Notification is not Required
- Submission Levels
- Part Submission Status
- Record Retention

### Customer Specific Requirements

- DaimlerChrysler
- Ford
- General Motors

This course can be customized to include your specific customer's product approval process requirements, free of charge. Please call for more information.

A bulk material provider specific version of this course is also available. Please call for more information.

# Team Problem Solving

This hands-on course describes the tools, methods and practices needed to permanently eliminate chronic and/or difficult to resolve problems. Students will use the techniques provided to investigate and propose solutions for actual problems selected by the organization, or communicated through its customers. Team problem solving concepts used by the automotive community will be emphasized.

**Hours:** 8 a.m. – 4 p.m.

**Length:** 2 days

## Course Objectives:

Participants will:

- Define Team Problem Solving and Corrective and Preventive Action
- Define when Team Problem Solving is appropriate, and how to select project for TPS
- Define the essential characteristics of a team
- Describe the steps involved in TPS and root cause analysis
- Identify tools that can be used to identify the root cause of a problem
- Introduce the Problem Report and Resolution form, and describe how it can be used to drive problem resolution

## Who Should Attend:

Managers, engineers, team leaders, production advisors, process engineers, production operators and others involved in investigating and resolving internal and external problems.

## Related Seminars

- ISO/TS 16949:2002
- Corrective and Preventive Action Systems
- Mistake Proofing and Error-Proofing

## Seminar Outline

### Key Concepts

- Problems
- Causes
- Multidisciplinary Teams
- Steps in the Team Problem Solving Process

### Organizing the Project

- Problem Identification and Selection
- Determining the Problem/Project Scope
- Selecting the Right Team Members
- Team Dynamics
- Avoiding the 5 Dysfunctions of the Team

### Introduction to Corrective and Preventive Action

- ISO 9001 and ISO/TS 16949 Requirements
- Steps in Problem Resolution
- The 8D Disciplined Team Problem Solving Form
- Workshop: Team Organization

- Defining the Problem
- Problem Description
- Is-Is Not Analysis for Defining the Problem
- Workshop: Problem Definition

### Containing the Problem

- Identifying and Implementing Short-term Containment Action

Workshop: Problem Containment

### Root Cause Identification

- Cause and Effect Analysis
- Design Comparison Matrix
- Is-Is Not Analysis
- Micro Flow Diagram
- Work Study
- 5 Whys Analysis
- 5 Why Enhanced Cause and Effect Analysis
- Workshop: Identifying Root Cause

### Identifying Permanent Action

- Technical Countermeasures
- Behavioral Countermeasures
- System Countermeasures
- Error-Proofing
- Solution Decision Matrix
- Risk Analysis and Risk Countermeasures
- Workshop: Permanent Actions

### Action Verification

- Verification Plan
- Workshop: Developing Verification Plans

### Long-Term Action Verification

- Horizontal Application
- System Updates

# Cost of Quality

It is not uncommon to find that the cost of poor quality in a company is 20 – 40% of sales. While a company will never be able to completely eliminate all of its poor quality costs, there is ample room to decrease it significantly. World class companies boast a COPQ of between 5 – 10% of sales. This seminar shows you how to identify your quality costs and set up a program to systematically reduce the cost of your poor quality.

**Hours:** 8 a.m. – 4 p.m.

**Length:** 1 day

## Course Objectives:

Participants will learn:

- The concepts of poor quality costs and their major elements
- Methods for identifying, collecting and analyzing quality costs
- The steps needed to minimize the costs of poor quality
- How to set up a program for managing the cost of quality
- Various formats for reporting quality costs

## Who Should Attend:

Managers, executives, engineers, quality professionals and others involved in the systematic identification of quality costs.

## Related Seminars

- ISO/TS 16949:2002
- ISO 9001:2000
- Team Problem Solving

## Seminar Outline

### COQ Concepts

- History of Quality Cost Management
- Common Quality Philosophy
- Desired Quality Philosophy
- The Visible Costs of Poor Quality
- The Hidden Costs of Poor Quality
- Cost of Quality Programs

### Major Quality Cost Categories

- Categories of Quality Costs
- External Failure Costs
- Internal Failure Costs
- Appraisal Costs
- Prevention Costs
- Value-added vs. Non-value-added Costs

### Obtaining Management Commitment

- Cost of Errors vs. Location Found
- Impact of Poor Quality on Profits
- Quality and its Impact on Productivity
- Optimizing Quality Costs
- Cost of Non-value-added Activities
- Strategic Importance of Quality Costs

### Establishing a Quality Cost Program

- Establish the Team
- Initial Assessments
- Collecting the Data
- Costs by Account
- Costs by Personnel Assigned
- Costs based on Occurrence
- Costs based on Interviews
- Analyzing the Data and Establishing the Cost Categories

### Reporting Quality Costs and Identifying Improvement Opportunities

- COQ Improvement Strategy
- Quality Cost Reports
- Establishing Quality Cost Goals
- Identifying Improvement Opportunities
- Identifying Cost Drivers

### Lessons Learned

- Lessons Learned from the Quality Community

# Supplier Quality Management

The ability to get good parts and services from your suppliers, when you need them, and at a competitive price is an essential component of any organization's strategy. This seminar provides the tools and understanding needed to properly evaluate, select, monitor and develop suppliers of critical parts and services to your organization. It also shows you how to develop your supplier's capabilities to effect continuous improvement and cost reduction activities.

**Hours: 8 a.m. – 4 p.m.**

**Length: 2 days**

## Course Objectives:

Participants will learn:

- The essential elements of supplier quality management
- How to systematically screen, evaluate and select capable suppliers
- How to develop supplier capabilities after they have been selected
- How to set up and manage a Supplier Certification Program
- How to proactively monitor your suppliers performance

## Who Should Attend:

Purchasing staff, quality professionals, materials staff, logistics professionals and engineering personnel involved in supplier selection, coordination, or development.

## Related Seminars

- Internal Quality Auditing
- Value Stream Mapping and Management
- ISO 9001
- ISO/TS 16949
- Related Core Tools for Internal Auditors

*Note: Baker College offers a Certificate Program for Supplier Quality Engineers. Please refer to page 46 for more information.*

## Seminar Outline

### Supply Chain Concepts

- Defining Quality
- Reduced Variation
- Delivery Performance
- Cost Performance
- Responsiveness
- Supply Chain Principles
- Supply Chain Strategy

### Core QMS Requirements

- ISO 9001 and ISO/TS 16949
- Supplier Evaluation and Selection Requirements
- Supplier Monitoring and Control Requirements
- Supplier Development Requirements
- Other Requirements

### Supplier Evaluation and Selection

- Selection Criteria
- Obtaining Supplier Information
  - Surveys
  - On-site Assessments
- Evaluating Supplier Information including Supplier Rating
- Post-selection Activities

### Supplier Certification Programs

- Components of a Supplier Certification Program
- Monitoring and Rating Quality Performance
- Monitoring and Rating Delivery Performance
- Monitoring and Rating Cost Performance

- Monitoring and Rating Responsiveness
- Communicating and Using the Rating System

### Supplier Development and Improvement

- Reactive Supplier Development
  - Complaint Handling
  - QMS Audits
  - Requirements Pass-down
  - Penalties and Debits
- Proactive Supplier Development
  - Integrated Launch Planning
  - FMEA Training and Consulting
  - Supplier Certification
  - Joint Problem Solving
  - Value Chain Mapping
  - Value Analysis

### Strategic Supplier Management

- Concepts in Strategic Sourcing
- Linking the Value Chain
- Developing Long-term Relationships

# Design of Experiments

Learn how to use this powerful tool to analyze and optimize your processes. Topics covered include experimental selection, design, conduct and analysis and use in other programs such as Six Sigma and Team Problem Solving. Students will also be shown how to use the Minitab™ software program to design and run experiments on typical organizational processes. A general knowledge of basic algebra and required, and an understanding of SPC is particularly useful.

**Hours: 8 a.m. – 4 p.m.**

**Length: 4 days**

## Course Objectives:

Participants will learn:

- What DOE is, and when it should be applied
- The basic concepts of experimental design
- How to select projects for maximum effect
- How to design an experiment
- How to conduct an experiment
- How to analyze and report the results of the designed experiment

## Who Should Attend:

Process engineers, quality professionals, Six Sigma practitioners and other involved in process analysis and improvement.

## Related Seminars

- Six Sigma Green Belt
- Lean Six Sigma Green Belt
- Six Sigma Black Belt
- Lean Six Sigma Black Belt
- Statistical Process Control
- Advanced Statistical Concepts

## Seminar Outline

### Introduction to Experimental Design

- Concepts of Experimental Design
- Definitions
- The DOE Process
- Experimental Design Components
- DOE and the Improvement Process
- Selecting Projects
- Defining and Clarifying the Problem
- Choosing the Factors and Levels
- Setting up the Experiment
- Conducting the Experiment
- Analyzing the Results
- Use of Minitab™ in Simple Factorial Design and Analysis

### Two Level Factorial Designs

- Developing the Design Matrix
- Conduct of the Experiment
- Calculation of Effects
- Analysis of the Results
- Reporting of the Results

### Fractional Factorial Designs

- When to use Fractional Factorial Designs
- Design Structure
- Identifying the Optimal Design
- Analysis of the Results
- Reflected Designs

### Evaluating Effects

- Location Effects
- Variance Effects
- Proportion Effects
- Determining the Optimal Sample Size

### Model Development

- Model Design
- Model Validation

### Exercise Review

# Advanced Statistical Concepts for Process Improvement

Learn advanced techniques for analyzing and optimizing your processes and for driving continuous improvement.

Students will be shown how to use the Minitab™ software program for advanced statistical analysis.

A general knowledge of basic algebra and SPC is assumed

**Hours: 8 a.m. – 4 p.m.**

**Length: 4 days**

## Course Objectives:

Participants will learn:

- When advanced statistical concepts are needed
- How to characterize single and multiple variable processes
- How to analyze and optimize processes using advanced statistical techniques
- How to use Minitab™ to setup, conduct and analyze the results of statistical analysis

## Who Should Attend:

Process engineers, quality professionals, Six Sigma practitioners and other involved in process analysis and improvement.

## Related Seminars

- Six Sigma Green Belt
- Lean Six Sigma Green Belt
- Six Sigma Black Belt
- Lean Six Sigma Black Belt
- Statistical Process Control
- Design of Experiments

## Seminar Outline

### Use of Advanced Statistical Analysis for Process Improvement

- Limitations of Basic Statistical Analysis
- Tools used in Advanced Statistical Analysis
- Selecting Projects for Strategic Impact
- Basic Steps in Process Analysis

### Single Process Analysis

- Basic Descriptive Statistics – Estimating the Mean, Proportion and Dispersion
- Distributions and Why they are Important
- The Central Limit Theorem and its Application to Statistical Sampling
- Detecting Outliers
- Establishing Confidence Intervals for the Mean, Variance and the Proportion
- Hypothesis Testing
- Type I and Type II Errors
- Sample Size Considerations
- Paired Tests and the Pared t Test
- Using Minitab™ to Analyze a Single Process
- Graphical Analysis

### Two Process Analysis

- Testing for Differences in the Means – Student's t Test

- Testing for Differences in the Variance – F Test
- Testing for Differences in the Proportion

### Multi-Process Analysis

- Using Analysis of Variance to Identify Differences in the Mean
- Analyzing Differences in Variation
- Analyzing Differences in Proportion

### Analyzing the Relationship Between Two Variables

- Correlation
- Linear Regression
- Residual Analysis
- R Squared
- Confidence and Prediction Intervals

### Relating More than Two Variables

- Multiple Regression Analysis
- Residual Analysis

# Executive Six Sigma

Six Sigma has been proven to be a powerful tool for driving improvement in customer satisfaction and the bottom line. The typical Master Black Belt averages cost savings of over \$250,000 per year, with many reporting average savings of over \$1,000,000 per year. This seminar is targeted for senior executives who will be instrumental in supporting and leading a Six Sigma Program rollout. The basic concepts of Six Sigma, including the DMAIC process will be explored. Special focus is placed on their responsibilities, including the alignment of Six Sigma project selection with the organization's strategic plan.

**Hours:** 8 a.m. – 4 p.m.

**Length:** 1 day

## Course Objectives:

Participants will learn:

- The concept of Six Sigma
- How to identify strategic improvement opportunities
- The major components of the DMAIC process
- Tools used in each component of the DMAIC process
- Senior Management's core responsibilities in implementing a Six Sigma Program

## Who Should Attend:

Senior Managers and Executives responsible for, or impacted by the organization's Six Sigma program.

## Related Seminars

- Six Sigma Champions Training
- Lean Six Sigma Champions Training
- Six Sigma and Lean Six Sigma Certificate Programs

## Seminar Outline

### Overview of Six Sigma

- History of Six Sigma
- The Six Sigma Model
- What Six Sigma Really Means
- Benefits of Six Sigma

### Project Selection

- Linking Lean Six Sigma to your Business Strategy
- The Balanced Scorecard
- Project Selection Criteria
- Selecting Lean Six Sigma Projects
- Project Approval – Obtaining Management Commitment

### Define

- Tools and Methods

### Measure

- Tools and Methods

### Analyze

- Tools and Methods

### Improve

- Tools and Methods

### Control

- Tools and Methods

### Steps in Implementing a Six Sigma Program

- Training Requirements
- Rollout Models
- Program Costs

### Maintaining a Six Sigma Program

- After the Low Hanging Fruit
- Integration with Other Initiatives
- Rules for Maintaining a Robust Program

Note that this seminar would be modified to include the concepts of lean if the organization is deploying a Lean Six Sigma program. Program length can also be adjusted to meet the needs of the client.

# Six Sigma Champion Training

Six Sigma Champions are managers and executives who sponsor Six Sigma projects. The roles and responsibilities of the champion are crucial to the success of the Six Sigma project. This seminar examines these roles and provides a framework for selecting, launching, supporting and institutionalizing Six Sigma Projects.

**Hours:** 8 a.m. – 4 p.m.

**Length:** 1 day

## Course Objectives:

Participants will learn:

- The History and Power of Six Sigma
- How to identify and select projects with strategic importance
- The Champions roles and responsibilities during each phase of the DMAIC process
- Tools used in each component of the DMAIC process
- How to monitor project performance

## Who Should Attend:

Senior Managers and Executives who sponsor or directly support Six Sigma projects.

## Related Seminars

- Executive Six Sigma
- Six Sigma and Lean Six Sigma Certificate Programs

## Seminar Outline

### Overview of Six Sigma

- History of Six Sigma
- The Six Sigma Model
- What Six Sigma Really Means
- Benefits of Six Sigma
- Roles in the Six Sigma Team

### Project Selection

- Linking Lean Six Sigma to your Business Strategy
- The Balanced Scorecard
- Project Selection Criteria
- Selecting Six Sigma Projects
- Developing a Project Charter
- Project Management of Six Sigma Projects
- Project Baseline Determinations
- Calculating Project Returns

### Define

- Roles and Support During the Define Stage

### Measure

- Roles and Support During the Define Stage

### Analyze

- Roles and Support During the Define Stage

### Improve

- Roles and Support During the Define Stage

### Control

- Roles and Support During the Define Stage

### Recognizing the Efforts of the Project Team

# Six Sigma Green Belt Training

Six Sigma Green Belt training provides a solid understanding of the concepts of Six Sigma along with the tools and methodologies needed to identify and effect significant improvements in quality, cost and customer satisfaction. Targeted specifically for those individuals who will be supporting Six Sigma teams on a part-time basis, students will learn how to identify improvement opportunities, measure and analyze a process, develop, assess and implement solutions, and establish controls to optimize and fix the gains.

**Hours: 8 a.m. – 4 p.m.**

**Length 5 days**

## Course Objectives:

Participants will learn:

- The concept of Six Sigma
- How to identify strategic improvement opportunities
- The major components of the DMAIC process
- Tools used in each component of the DMAIC process

## Who Should Attend:

Managers, team leaders, engineers, quality professionals and others involved in the systematic identification and realization of significant process improvement.

## Related Seminars

- Six Sigma for Executives
- Six Sigma Champions Training
- Six Sigma Black Belt Certificate Program

**Note:** *Students will receive instruction on how to use the Minitab™ statistical software program to conduct process analysis. While no previous experience with Minitab is required, students should have access to the program for maximum effectiveness after the training.*

## Seminar Outline

### Day 1

#### Overview of Six Sigma

- History of Six Sigma
- The Six Sigma Model
- What Six Sigma Really Means
- Benefits of Six Sigma

#### Project Selection

- Linking Six Sigma to your Business Strategy
- The Balanced Scorecard
- Project Selection Criteria
- Selecting Six Sigma Projects
- Project Approval – Obtaining Management Commitment

### Day 2 Define

- Developing the Project Charter
- Understanding the Current Process
- Process Mapping and SIPOC
- Concepts of Variation
- Descriptive Statistics
- Refining the Project Description and Setting the Baseline – Cost, Time and Quality

### Day 3 Measure

- Identifying Data Requirements
- Types of Data and Sampling
- Data Collection
- Basic SPC
- Process Capability
- Measurement Systems Analysis

### Day 4 Analyze

- Basic Graphical Techniques
- FMEA
- Applied Statistics
  - Hypothesis Testing
  - Analysis of Variance
  - Regression Analysis

### Day 5 Improve

- Identifying Potential Solutions
- Behavior vs. Technical Controls and Mistake Proofing
- Selecting Solutions – Benefits vs. Costs
- Assessing the Risks to Implementation
- Using Force Field Analysis to Assess Risk
- Using FMEA to Assess Risks
- Implementing Solutions – Creating an Implementation Plan

### Control

- Control Plans
- Documentation
- Training
- Maintaining the FMEA
- Ongoing Monitoring - SPC II

# Six Sigma Black Belt Training

Six Sigma Black Belt training provides a comprehensive understanding of the Six Sigma process and tools needed to identify and effect significant improvements in quality, cost and customer satisfaction. Targeted specifically for those individuals who will be supporting Six Sigma teams on a full-time basis, students will learn how to identify improvement opportunities, measure and analyze a process, develop, assess and implement solutions, and establish controls to optimize and fix the gains.

**Hours:** 8 a.m. – 4 p.m.

**Length:** 4 weeks

## Course Objectives:

Participants will learn:

- The concept of Six Sigma
- How to identify strategic improvement opportunities
- The major components of the DMAIC process
- Tools used in each component of the DMAIC process
- Advanced statistical tools for process optimization
- How to plan, manage and lead successful Six Sigma projects

## Who Should Attend:

Candidates for the Six Sigma Black Belt.

## Related Seminars

- Six Sigma Green Belt Training
- Advanced Statistical Concepts
- Design of Experiments
- Project Management

*To obtain certification, students will be required to complete a Six Sigma project while functioning as the team leader. The course sequence is offered over a 4 to 6 month period to allow for project completion in line with the completion of training topics.*

## Seminar Outline

### Week 1 Define and Measure

- Overview of Six Sigma
- Project Selection
- Understanding Processes and Systems

#### The **Define** Phase

- Process Flowcharts
- SIPOC Diagrams
- Value Stream Analysis
- Project Management
- Team Dynamics

#### The **Measure** Phase

- Understanding Customer Needs
- Sampling Theory
- Measurement Systems Analysis
- Descriptive Statistics
- Statistical Process Control
- Capability Analysis
- Certification Project Selection Instructions

### Week 2 Analyze

- Project Reports and Review of the Define and Measure Phase
- Basic Graphical Analysis
- Organizing and Planning Tools
- Advanced Statistical Analysis
- Certification Project Analysis Instructions

### Week 3 Improve

- Project Reports and Review of the Analysis Phase
- Design of Experiments

- Failure Mode and Effects Analysis
- Design for Manufacturability
- Mistake Proofing
- Certification Project Improve Instructions

### Week 4 Control

- Project Reports and Review of the Improve Phase
- Control Plans
- Maintaining the FMEA
- Statistical Process Control II
- Documentation Development
- Instructions for Project Submission and Closeout

### Off-line

- Final Project Review and Approval

Please note that the exact content of each program will be determined after a needs assessment to identify what skills students already possess and the specific tools that should be incorporated into the curriculum. Also please note that final project approval is not guaranteed, however session reviews and ongoing interface with the instructors will be performed to minimize the risk of failure.

# Introduction to Lean Manufacturing

Lean manufacturing can provide huge savings in efficiency, productivity and profits and has become a standard operational method in many industries. This seminar provides a detailed overview of the principles of lean operations and their applicability to a modern manufacturing environment. This course is designed for organizations that are considering the implementation of lean and as an orientation for new employees in organizations with existing programs.

**Hours: 8 a.m. – 4 p.m.**

**Length 3 days**

## Course Objectives:

Participants will learn:

- What lean manufacturing is and how it can help improve productivity, efficiency and profits
- The essential components of lean and how they interact in a lean environment
- Key factors for success for each of the lean components

## Who Should Attend:

Managers, team leaders, engineers, production team members, maintenance specialists, quality professionals and others involved in implementation or maintenance of a lean environment.

## Related Seminars

- Lean Six Sigma for Executives
- Lean Six Sigma Champions Training
- Lean Six Sigma Black Belt Certificate Program
- 5S and Visual Control Systems
- Kaizen Workshops
- Value Stream Mapping and Management
- Total Productive Maintenance

## Seminar Outline

### Lean Overview

- Overview of Lean
- History of Lean
- Benefits of Lean
- Value Streams
- Waste
- The Strategic Connection between Lean Operations and Organizational Success

### Components of Lean

- JIT Concepts
- Value Streams and VSM
- Small Lot Manufacturing
- Quick Changeover
- Total Productive Maintenance
- 5S and the Visual Factory
- Kaizen
- Go-See

### Value Stream Mapping and Management

- Lean Measures of Process Performance
- Defining the Current State
- Analyzing the Current State
- Developing the Future State

### Small Lot Manufacturing and Quick Changeover

- Benefits of Small Lot Manufacturing
- Necessary Conditions
- Quick Changeover Principles and Examples

### Total Productive Maintenance

- Importance of TPM
- Components of TPM
- Autonomous Maintenance
- Implementing TPM

### 5S and the Visual Factory

- Sort
- Straighten
- Scrub
- Standardize
- Sustain
- Creating the Visual Factory

### Lean Tools for Process Improvement

- Using Kaizen for Ongoing Improvement
- Go-See: The Importance of Fully Understanding the Process

# Total Productive Maintenance

A three day overview seminar covering the component and steps involved in designing and deploying a Total Productive Maintenance (TPM) System. The seminar includes a description of the major elements of TPM, expected benefits, key steps in implementing a TPM program, and how to measure the results. The seminar is applicable to process industries as well as to fabrication and assembly.

**Hours:** 8 a.m. – 4 p.m.

**Length**            3 days

## Course Objectives:

Participants will learn:

- What TPM is, and how it can significantly improve productivity, quality and the bottom line
- The core concepts and components of TPM
- The major steps involved in implementing TPM

## Who Should Attend:

Executives, Plant Managers, Maintenance Personnel, Production and Engineering Managers and others involved in the review of, or implementation of a TPM Program.

## Related Seminars

- Lean Manufacturing
- 5S and Visual Control Systems
- Project Management

## Seminar Outline

### Overview of Total Productive Maintenance

- What is TPM
- The Goals of a TPM Program
- Benefits
- Key Elements
- Small Group Activities
- The Six Big Losses
- The Eight Major Losses for Process Industries
- Other Losses
- Overview of Implementation
- Terms and Definitions

### Organizing for TPM

- Organizing for Implementation
- The TPM Policy
- Establishing the Baseline
- Setting Goals and Objectives
- Developing the Implementation Plan

### Implementing TPM

- Organizing the Teams
- Conducting Initial Cleaning
- Developing Cleaning and Lubrication Standards
- Conducting General Inspections
- Attacking the Six Big Losses
- P-M Analysis
- Improving the Planned Maintenance Program

### Early Equipment Management

- Goals of Early Equipment Management
- Tools and Techniques
- Maintenance Prevention
- Life Cycle Design
- Designing for Reliability
- Designing for Flexibility
- Commissioning Control

### Maintainability Improvement

- Reliability Centered Maintenance
- Quality Maintenance

### Maintenance Training

- Who Needs It?
- Types of Maintenance Training
- Establishing the Training Program

### Special Topics

- Monitoring Program Results
- Managing the Change Process
- 5S Visual Control
- SMED
- Designing for the Environment

# Value Stream Mapping, Management and Improvement

Skillfully managing and improving the system of interrelated processes that provide value to your customers is the key to success and profitability in today's competitive marketplace. This interactive 2-day seminar shows you how to define and map your value streams and how to apply the concepts and tools of lean to remove waste, increase productivity and improve quality.

**Hours: 8 a.m. – 4 p.m.**

**Length 2 days**

## Course Objectives:

Participants will learn:

- The concepts of value streams and their strategic importance
- How to map current value streams in relation to cost, time and quality
- How to analyze value streams and identify the most important improvement opportunities
- How to develop future state value stream maps
- How to implement recommended improvements

## Who Should Attend:

Managers, team leaders, engineers, production operators, quality, purchasing, administrative, and logistics professionals or others involved in quality and productivity improvement.

## Related Seminars

- Lean Manufacturing
- 5S and Visual Control Systems
- Project Management
- Lean Six Sigma

## Seminar Outline

### Value Streams and Lean Principles

- Defining Your Customers
- What Customers Value
- Value Streams
- Business Strategy
- Customer Value Workshop
- Value Chains
- Lean Concepts

### Defining Your Value Stream

- Choosing Your Value Stream
- Identifying Your Important Customer-oriented Processes
- Systems of Processes
- Inputs and Outputs

### Value Stream Mapping

- Mapping the Current State
- Production Example
- Office Example
- Mapping Workshop

### Measuring Current Performance

- Selecting the Right Performance Metrics
- Gathering Information
- Communicating Current Performance

### Targeting Improvements

- Identifying Strategic Improvement Points
- Scope, Resources and Management Support

- Mapping the Future State

### Improvement Tools and Plans

- Using Kaizen Events to Drive Improvement
- Action Plans
- Visual Controls and Their Role in Value Stream Management
- Process Failure Mode and Effects Analysis

### Implementing the Improvements

- Managing Change
- Institutionalizing the Improvements
- Using Internal Management System Audits to Reinforce and Drive Value Stream Improvements

### Measuring Ongoing Performance and Managing the Value Stream

# 5S and Visual Controls

5S and its five pillars of visual management are an important element of lean operations. Learn how to implement and optimize a 5S visual control program and how to sustain it once implemented. Numerous examples are provided and hands-on application to the organization's existing processes will be used to reinforce the concepts learned in this class.

**Hours:** 8 a.m. – 4 p.m.

**Length:** 2 days

## Course Objectives:

Participants will learn:

- How 5S and visual controls can be used to improve productivity, efficiency and morale
- The steps involved in implementing 5S
- Different types of visual controls and their uses
- How to maintain a 5S program

## Who Should Attend:

Engineers, Quality Professionals, supervisors, managers and team leaders responsible for implementing and maintaining a 5S program.

## Related Seminars

- Lean Manufacturing
- Total Productive Maintenance
- Kaizen Workshop
- Lean Six Sigma

## Seminar Outline

### Introduction

- Visual Controls and 5S
- Sort
- Straighten
- Scrub
- Standardize
- Sustain
- Implementing a 5S Visual Control Program

### Sort

- The Impact of Material Waste
- Red-tagging
- Red-tag Program
- Workshop

### Straighten

- Optimizing and Standardizing Materials
- Visual Controls
- Examples and Techniques
- Workshop

### Scrub

- The Multiple Benefits of Cleaning
- Cleaning as Inspection
- Cleaning Standards
- Maintaining Cleanliness
- Visual Cleaning Controls
- Workshop

### Standardize

- Institutionalizing the Gains
- Standardization Methods
- Visual Standards
- Workshop

### Sustain

- Maintaining the Gains
- Tools, Techniques and Practices
- Workshop

### Maintaining 5S

- Measuring your 5S Capability and Maturity
- 5S Program Reviews
- Auditing 5S
- Workshop

# Kaizen Workshops

Kaizen is a powerful tool for driving ongoing continuous improvement. Students in this class will learn the concepts of Kaizen, and how to set up kaizen events. This seminar can also be structured around kaizen events within the organization, with the first day focusing on developing the concepts of kaizen, and the second session, several weeks later, conducting one or more kaizen events.

**Hours:** 8 a.m. – 4 p.m.

**Length:** 1 or 2 days

## Course Objectives:

Participants will learn:

- What is kaizen, and how does it differ from other improvement programs
- The key success factors for implementing a robust kaizen program
- How to set up a kaizen suggestion program
- How to organize and conduct kaizen events

## Who Should Attend:

Engineers, Quality Professionals, supervisors, managers, team leaders and team members responsible for implementing and maintaining a kaizen program.

## Related Seminars

- Lean Manufacturing
- Total Productive Maintenance
- 5S and Visual Controls
- Lean Six Sigma

## Seminar Outline

### Introduction to Waste and the Kaizen Process

- The Different Forms of Waste
- Kaizen
- Kaizen as Everybody's Job
- Kaizen Programs

### Kaizen Suggestion Program

- Elements of a Successful Suggestion Program
- Evaluating Suggestions
- Approving Suggestions
- Recognizing Suggestions

### Foundations of Kaizen

- The Golden Rules of Kaizen Management
- 5S and Kaizen
- Standardization
- Kaizen Teams and Quality Circles

### Kaizen Roles

- The Manager's Role
- The Supervisor's Role
- The Operator's Role

### Organizing and Conducting Kaizen Events

- Preparing for the Event
- Conducting the Event
- Implementing Solutions

### Reinforcing Kaizen and Increasing Participation

- Recognizing the Value – Measuring the Gains
- Institutionalizing the Culture
- Reinforcing and Motivating Employee Participation

# Lean Six Sigma Green Belt Training

Lean Six Sigma Green Belt training provides a solid understanding of the concepts of both Six Sigma and Lean, along with the tools and methodologies needed to identify and effect significant improvements in quality, cost, efficiency and customer satisfaction. Targeted specifically for those individuals who will be supporting Six Sigma teams on a part-time basis, students will learn how to identify improvement opportunities, measure and analyze a process, develop, assess and implement solutions, and establish controls to optimize and fix the gains.

**Hours: 8 a.m. – 4 p.m.**  
**Length : 10 days**

## Course Objectives:

Participants will learn:

- The concept of Six Sigma
- The concepts of Lean
- How to combine the concepts of both Lean and Six Sigma
- How to identify strategic improvement opportunities
- The major components of the DMAIC process
- Tools used in each component of the DMAIC process

## Who Should Attend:

Managers, team leaders, engineers, quality professionals and others involved in the systematic identification and realization of significant process improvement.

## Related Seminars

- Lean Six Sigma for Executives
- Lean Six Sigma Champions Training
- Lean Six Sigma Black Belt Certificate Program

**Note:** *Students will receive instruction on how to use the Mini-tab™ statistical software program to conduct process analysis. While no previous experience with Mini-tab is required, students should have access to the program for maximum effectiveness after the training.*

## Seminar Outline

### Week 1

#### Overview of Six Sigma

- History of Six Sigma
- The Six Sigma Model
- What Six Sigma Really Means
- Benefits of Six Sigma

#### Overview of Lean

- Value Streams
- Waste
- Lean Concepts
- Benefits of Lean
- Lean Six Sigma

#### Project Selection

- Linking Lean Six Sigma to your Business Strategy
- The Balanced Scorecard
- Project Selection Criteria
- Selecting Lean Six Sigma Projects
- Project Approval – Obtaining Management Commitment

### Define

- Developing the Project Charter
- Understanding the Current Process
- Process Mapping and SIPOC
- Value Stream Mapping
- Mapping the Current State
- Spaghetti Diagrams
- Concepts of Variation
- Descriptive Statistics
- Refining the Project Description and Setting the Baseline – Cost, Efficiency and Quality

### Measure

- Identifying Data Requirements
- Types of Data and Sampling
- Takt Time and Pitch
- Process Capability
- Statistical Process Control

- Data Collection Tools and Methods
- Measurement Systems Analysis

### Week 2

#### Analyze

- Data Analysis Tools and Methods
  - Brainstorming
  - Affinity Diagrams
  - Cause and Effect Diagrams
  - Pareto Charts and Trend Charts
  - Prioritization Matrices
  - Value-Added Flow Analysis
- Simple Applied Statistics
- Defining the Future State Value Stream Map

#### Improve

- Identifying Potential Solutions
- Behavior vs. Technical Controls and Mistake Proofing
- 5S Overview
- Kaizen Overview
- Selecting Solutions – Benefits vs. Costs
- Using Force Field Analysis to Assess Risk
- Using FMEA to Assess Risks
- Implementing Solutions – Creating an Implementation Plan

#### Control

- Control Plans
- Maintaining the FMEA
- Ongoing Monitoring
- Extending the Value Stream

# Lean Six Sigma Black Belt Training

Lean Six Sigma Black Belt training provides a comprehensive understanding of both the Six Sigma process the tools of lean manufacturing needed to effect significant improvements in quality, efficiency, cost and customer satisfaction. Targeted specifically for those individuals who will be directing Lean Six Sigma teams on a full-time basis, students will learn how to identify improvement opportunities, measure and analyze a process, develop, assess and implement solutions, and establish controls to optimize and fix the gains.

**Hours: 8 a.m. – 4 p.m.**

**Length 4 weeks**

## Course Objectives:

Participants will learn:

- The concept of Lean Six Sigma
- How to identify strategic improvement opportunities
- The major components of the DMAIC process
- The lean tools that supplement the DMAIC process
- Advanced statistical tools for process optimization
- Lean tools for driving out waste and improving efficiency
- How to plan, manage and lead successful Lean Six Sigma projects

## Who Should Attend:

Candidates for the Lean Six Sigma Black Belt.

## Related Seminars

- Lean Six Sigma Green Belt
- Lean Manufacturing
- Advanced Statistical Concepts
- Design of Experiments
- Project Management

*To obtain certification, students will be required to complete a Lean Six Sigma project while functioning as the team leader. The course sequence is offered over a 4 to 6 month period to allow for project completion in line with the completion of training topics.*

## Seminar Outline

### Week 1 Define and Measure

- Overview of Six Sigma
- Overview of Lean
- Project Selection
- Understanding Value Streams, Processes and Systems

#### The **Define** Phase

- Process Flowcharts and SIPOC
- Value Stream Analysis
- Project Management
- Team Dynamics

#### The **Measure** Phase

- Understanding Customer Needs
- Sampling Theory
- Measurement Systems Analysis
- Descriptive Statistics
- Statistical Process Control
- Capability Analysis

### Week 2 Analyze

- Project Reports and Review of the Define and Measure Phase
- Basic Graphical Analysis
- Organizing and Planning Tools
- Advanced Statistical Analysis
- Certification Project Analysis Instructions

### Week 3 Improve

- Project Reports and Review of the Analysis Phase
- Design of Experiments
- Mistake-proofing and Kaizen
- Failure Mode and Effects Analysis
- Certification Project Improve Instructions

### Week 4 Control

- Project Reports and Review of the Improve Phase
- Control Plans
- Maintaining the FMEA
- Statistical Process Control II
- Documentation Development
- 5S and Visual Controls
- Instructions for Project Submission and Closeout

### Off-line

- Final Project Review and Approval

Please note that the exact content of each program will be determined after a needs assessment to identify what skills students already possess and the specific tools that should be incorporated into the curriculum. Also please note that final project approval is not guaranteed, however session reviews and ongoing interface with the instructors will be performed to minimize the risk of failure.

# ISO 14001:2004

ISO 14001 provides a systematic approach for managing and improving an organization's environmental performance. Supplier certification to ISO 14001 is also required by many organizations. This activity-based 2-day seminar provides a detailed step-by-step blueprint for designing and implementing an environmental management system that improves your environmental performance and your bottom line.

**Hours:** 8 a.m. – 4 p.m.

**Length:** 2 days

## Course Objectives:

Participants will learn:

- What's driving the push to ISO 14001
- How an EMS can improve the bottom line
- The core requirements of ISO 14001
- How to plan and conduct an initial environmental review to identify significant aspects
- Integrate their EMS into their existing quality systems

## Who Should Attend:

Managers, team leaders, and others directly involved in the evaluation or implementation of an ISO-14001 Environmental Management System.

## Related Seminars

- Internal EMS Auditing
- ISO 9001:2000
- OHSAS 18001
- ISO/TS 16949:2002

**Note:** Students receive an electronic spreadsheet that provides for the identification, assessment and documentation of the organization's significant environmental aspects.

## Seminar Outline

### Overview of Environmental Management

- Current Environmental Concerns
- Other Drivers
- The ISO 14001 Series
- Examples of Benefits

### Getting Started with ISO 14001

- 4.4.1 Structure and Responsibility
- 4.2 Environmental Policy
- Workshop: Developing an Environmental Policy Statement

### Identifying Aspects and Impacts

- 4.3.1 Environmental Aspects
- Initial Environmental Review
- Determining Significance
- 4.3.2 Legal and Other Requirements
- Major Environmental Legislation
- Workshop: Identifying Significant Environmental Aspects

### Establishing Objectives and Targets

- 4.3.3 Objectives and Targets and Environmental Management Programs

### Establishing Operational Control

- 4.4.6 Operational Control
- Workshop: Establishing Control over Your Significant Aspects
- Environmental Subcontractors
- 4.4.4 EMS Documentation

- Developing Environmental Documentation
- 4.4.5 Document Control
- 4.4.2 Training, Awareness and Competence
- Workshop: Identifying Training Requirements
- 4.4.3 Communication
- 4.4.7 Emergency Preparedness and Response
- Workshop: Reviewing Existing Emergency Response Procedures

### Monitoring Your Environmental Management System

- 4.5.1 Monitoring and Measurement
- Workshop: Developing Environmental Metrics
- 4.5.2 Evaluation of Compliance
- Workshop: Evaluating Compliance to Environmental Regulations
- 4.5.4 Records
- 4.5.5 EMS Audit
- Workshop: Developing an Audit Schedule

### Improving Your Environmental Management System

- 4.5.3 Nonconformance and Corrective and Preventive Action
- 4.6 Management Review

# ISO 14001:2004 Internal Auditing

A lively two-day seminar covering the basics of how to plan, conduct, report and verify an EMS audit to the ISO-14001:2004 standard. Find out how to ensure that you're getting the most out of your environmental management system. Also includes training on how to integrate your EMS audits into a process-based audit approach.

**Hours:** 8 a.m. – 4 p.m.  
**Length:** 2 days

## Course Objectives:

Participants will learn:

- How to plan an audit
- How to develop an audit strategy
- How to conduct an audit
- How to avoid conflict and make the auditee feel comfortable
- Integrate their EMS audits with their process-based QMS audits
- Tools that can assist in the audit for environmental compliance

## Who Should Attend:

Audit program managers, auditors, and others directly involved in the evaluation and auditing of an ISO-14001 Environmental Management System.

## Related Seminars

- ISO 14001
- OHSAS 18001

**Note:** *Students receive a set of electronic checklists that they can use as a foundation for their EMS Audit.*

## Seminar Outline

### Introduction to EMS Auditing

- The Role of the Internal Audit
- Types of Audits
- Environmental Compliance Reviews
- Key Terms and Definitions
- Overview of the Audit Process
- Process-Based Audits

### Overview of the ISO 14001 Standard

- Overview of ISO 14001:2004
- The ISO 14000 Series
- The Environmental Policy
- Environmental Planning including Identification of Significant Aspects
- Implementation and Operation
- Monitoring and Measurement
- Management Review

### Planning the Audit

- Defining Scope and Objectives
- Selecting the Audit Team
- Collecting Information
- Planning the Audit Strategy
- Developing Audit Checklists
- The Process Audit Checklist

### Conducting the Audit

- The Opening Meeting
- Interview Techniques
- Auditing Techniques
- Auditing for Effectiveness
- Documenting Findings

### Audit Reinforcement

- Students will conduct a real or simulated audit to the ISO 14001 standard

### Post-Audit Activities

- Presenting the Audit Results
- The Final Audit Report
- Evaluating Corrective Action
- Verifying the Effectiveness of Corrective Actions

### Performing Integrated Environmental and Quality System Audits (organizations with quality management systems only)

- Similarities between ISO 9001 and ISO 14001
- Benefits of the Integrated Audit
- Planning the Audit Scope
- Conducting Joint Audits

**New!** The company will also receive a copy of the new book, *The Management System Auditor's Handbook*, published by ASQ Quality Press.

# OHSAS 18001 Health & Safety Management Systems

Worker health care costs now typically comprise the single largest cost associated with the manufacture and delivery of products to your customers. This 2-day seminar provides a detailed step-by-step blueprint for designing and implementing a health and safety management system that protects your employees and improves your bottom line.

**Hours: 8 a.m. – 4 p.m.**

**Length 2 days**

## Course Objectives:

Participants will learn:

- How OHSAS 18001 can be used to manage their health & safety program
- How to plan and coordinate Job Hazard Analysis
- How to assess the risks of job hazards
- How to design and implement an OH&S program based on OHSAS 18001

## Who Should Attend:

Managers, team leaders, safety professionals and others directly involved in the evaluation or implementation of an OHSAS 18001 Occupational Health and Safety Management System.

## Related Seminars

- ISO 14001
- ISO 9001:2000
- ISO/TS 16949:2002
- Conducting Safety and Health Audits to OHSAS 18001
- Safety Basics for the 1<sup>st</sup> Line Supervisor

## Seminar Outline

### Safety and Health Overview

- OH&S Numbers
- Organizational Survey
- Components of an effective OH&S Program

### Overview of OHSAS 18001

- Purpose and Structure
- Compatibility and Integration with Other Management Systems
- Benefits

### Establishing the OH&S Policy

- 4.2 OH&S Policy Requirements
- Components of the Policy Statement
- Alignment with Organizational Goals and Values
- Examples

### Planning Processes

- 4.3.1 Planning for Hazard Identification, Risk Assessment and Risk Control
- Workshop: Developing a Job List and Prioritizing JHA
- Workshop: Identifying Job Hazards
- Workshop: Assessing Risk
- 4.3.2 Legal and Other Requirements
- 4.3.2 H&S Objectives
- 4.3.4 OH&S Management Programs

### Implementation and Operation

- 4.4.6 Operational Control
- Workshop: Establishing Operational Control
- 4.4.1 Structure and Responsibility
- 4.4.2 Training, Awareness and Competence
- Workshop: Identifying Training Needs
- 4.4.3 Consultation and Communication
- 4.4.4 Documentation
- 4.4.5 Document and Data Control
- 4.4.7 Emergency Preparedness and Response
- Workshop: Evaluating Current Emergency Procedures

### Checking and Corrective Action

- 4.5.1 Performance Monitoring and Measurement
- Workshop: Developing Health and Safety Metrics
- 4.5.2 Accidents, Incidents, Non-conformances and Corrective/Preventive Action
- 4.5.3 Records
- 4.5.4 Audit
- Workshop: Developing an Audit Schedule
- Integrating Your OH&S Audits with your Other System Audits By Using the Process Approach

### Management Review

# OHSAS 18001 Internal Auditing

A lively two-day seminar covering the basics of how to plan, conduct, report and verify an audit to the OHSAS 18001 standard. Find out how to ensure that you're getting the most out of your health & safety management system. Also includes training on how to integrate your OHSAS 18001 audits into a process-based audit approach to allow combined audits with ISO 14001, ISO 9001 or ISO/TS 16949.

**Hours:** 8 a.m. – 4 p.m.  
**Length:** 2 days

## Course Objectives:

Participants will learn:

- How to plan an audit
- How to develop an audit strategy
- How to conduct an audit
- How to avoid conflict and make the auditee feel comfortable
- Integrate their OHS audits with their process-based QMS audits
- Tools that can assist in the audit for regulatory compliance

## Who Should Attend:

Audit program managers, auditors, Health & Safety Managers and others directly involved in the evaluation and auditing of an OHSAS 18001 OHS Management System.

## Related Seminars

- ISO 14001
- OHSAS 18001
- ISO 9001

**Note:** Students receive a set of electronic checklists that they can use as a foundation for their OHS Audit.

## Seminar Outline

### Introduction to OHS Auditing

- The Role of the Internal Audit
- Types of Audits
- Regulatory Compliance Reviews
- Key Terms and Definitions
- Overview of the Audit Process
- Process-Based Audits

### Overview of the OHSAS 18001 Standard

- Overview of OHSAS 18001
- The OHS Policy
- OHS Planning including Job Hazard Analysis
- Implementation and Operation
- Monitoring and Measurement
- Management Review

### Planning the Audit

- Defining Scope and Objectives
- Selecting the Audit Team
- Collecting Information
- Planning the Audit Strategy
- Developing Audit Checklists
- Workshop: Planning an Audit
- The Process Audit Checklists

### Conducting the Audit

- The Opening Meeting
- Interview Techniques
- Workshop: Audit Simulation
- Auditing Techniques
- Auditing for Effectiveness
- Documenting Findings

### Audit Reinforcement

- Students will conduct a real or simulated audit to the OHSAS 18001 standard

### Post-Audit Activities

- Presenting the Audit Results
- Workshop: Documenting Findings
- The Final Audit Report
- Evaluating Corrective Action
- Verifying the Effectiveness of Corrective Actions

### Performing Combined Environmental, Health & Safety and Quality System Audits (organizations with integrated management systems only)

- Similarities between ISO 9001, OHSAS 18001 and ISO 14001
- Benefits of the Combined Audit
- Planning the Audit Scope
- Conducting Combined Audits

**New!** The company will also receive a copy of the new book, *The Management System Auditor's Handbook*, published by ASQ Quality Press.

# Job Hazard Analysis and Risk Assessment

A one-day seminar covering the basics of how to plan, conduct, and report a Job Hazard Analysis. The JHA forms the backbone of the OHSAS 18001 management system. Also includes training on how develop and prioritize a listing of jobs that require analysis. Students will use the electronic tools provided in the class to document and perform the risk assessments.

**Hours:** 8 a.m. – 4 p.m.

**Length:** 1 day

## Course Objectives:

Participants will learn:

- How to plan a JHA
- How to conduct a JHA
- How to conduct a Risk Assessment
- How to document their JHAs and Risk Assessments
- Methods for keeping their JHAs and Risk Assessments current

## Who Should Attend:

Health & Safety Managers, professionals, Safety Committee members and others directly involved in performance and evaluation of job hazards.

## Related Seminars

OHSAS 18001

*Note: Students receive a set of electronic tools that they can use to help document the JHAs and perform the Risk Assessments*

## Seminar Outline

### Overview of the OHSAS 18001 Standard

- Overview of OHSAS 18001
- The OHS Policy
- OHS Planning including Job Hazard Analysis
- Implementation and Operation
- Monitoring and Measurement
- Management Review
- The Role of the JHA and Risk Assessment in OHSAS 18001

### Planning the JHA

- Defining the Activities that Must be Included
- Prioritizing the JHAs
- Developing the Organizational Structure to Support JHA
- Identifying JHA Team Members
- Training for Team Members
- Checksheets, Forms and Other Tools
- Workshop: Planning a Job Hazard Analysis

### Conducting the JHA

- Task Analysis
- Area Analysis
- Process Analysis
- Workshop: Conducting a Job Hazard Analysis

### Assessing Risk

- Assessing the Relative Risk of Activities
- Common Risk Categories

- Using the Risk Assessment Tool
- Workshop: Assessing Risk

### Documenting and Updating your JHA and Risk Assessments

- The Importance of Documentation
- Maintaining Your JHA and Risk Assessments Current

# Basic Safety and Health for Supervisors

OSHA requires that the employer maintain a safe and healthy workplace. This seminar draws on OSHA material to survey the most common types of workplace hazards and how to prevent them. Full coverage requires 3 days, but employers may customize the workshop by adding or eliminating hazard categories as appropriate for their organization.

**Hours:** 8 a.m. – 4 p.m.

**Length:** 2 days

## Course Objectives:

Participants will learn about the:

- Elements that contribute to an effective health and safety program
- OSHA, and how OSHA ensures workplace safety
- Most common health and safety hazards associated with the workplace, relevant training requirements, and how to prevent and/or control these hazards

## Who Should Attend:

Supervisors, Managers, Safety Committee Members and any other employee responsible for the health and safety of the workforce.

## Related Seminars

- OHSAS 18001 Occupational Health and Safety Management System Requirements

## Seminar Outline

### Overview of Health & Safety Programs

- Benefits
- Major Elements

### The OSHA

- The OHS Act of
- OSHA Standards
- Reporting and Recordkeeping
- Workers Responsibilities and Rights
- OSHA Inspections

### Walking and Working Surfaces

- Aisles and Passageways
- Covers and Guardrails
- Floor Openings
- Wall Openings
- Stairs and Stairways
- Ladders and Scaffolding

### Means of Egress and Fire Protections

- Escape Routes and Exits
- Emergency Action and Fire Prevention Plans
- Fire Extinguishers

### Electrical Safety

- Electric Shock, Burns and Falls
- Wiring Hazards
- Grounding Hazards
- Portable Cords and Tools

### Machine Guarding

- Points of Operation
- Rotating Parts
- Nip Points
- Methods of Machine Guarding

### Flammable and Combustible Material

- Classification of Flammable and Combustible Liquids
- Control of Ignition Sources
- Storage
- Fire Control
- Safe Handling

### Hi-Lo Safety

- Training Program
- Safety Rules
- Case Studies

### Personal Protective Equipment

- Evaluation of Common PPE

### Hazard Communication Program

- Hazcom Program
- Employee Training

# Certificate Programs

Baker College Corporate Services offers a number of certificate programs in addition to the Six Sigma and Lean Six Sigma certificates. Certificate programs provide a structured and comprehensive mastery of fundamental skills and advanced tools for personnel filling specific roles. The certificate is earned after completing the required foundation courses and the required number of electives. Students may use previous training to satisfy certificate requirements by providing evidence of training completion.

Customized certificate programs can also be developed using our extensive library of seminars and workshops to suit your unique needs. Please call for additional information.

## Certificates Offered

### Management System Master Auditor Certificate

This program is designed for auditors involved in the evaluation of combined quality, environmental and/or health & safety management systems. Students completing this program will be able to plan, conduct and report combined audits, identify and communicate best practices and audit for strategic alignment and strategy deployment.

#### Core Requirements

- ISO 9001 **or** ISO/TS 16949
- ISO 14001 **or** OHSAS 18001
- ISO 9001 Internal Quality Auditing **or** ISO/TS 16949 Internal Quality Auditing
- ISO 14001 Internal EMS Auditing **or** OHSAS 18001 OH&S Management System Auditing
- Strategic Quality Management
- Related Core Tools for Internal Auditors
- Advanced Auditing Techniques

#### Electives

- None Required

### Automotive Quality Manager Certificate

This program is designed for Quality Managers and prospective managers who need a thorough understanding of the methods and tools used for automotive quality assurance. Students completing this program will be able to plan, coordinate and improve their management systems and their use of the automotive core tools.

#### Core Requirements

- ISO/TS 16949
- ISO/TS 16949 Internal Quality Auditing
- Strategic Quality Management
- Advanced Product Quality Planning
- Process Failure Mode and Effects Analysis
- Measurement Systems Analysis
- Statistical Process Control
- Production Part Approval Process

#### Electives (2 required)

- Design Failure Mode and Effects Analysis
- Team Problem Solving
- Advanced Statistical Concepts
- Cost of Quality Programs
- Introduction to Lean Manufacturing
- 5S and Visual Control Systems
- Value Stream Mapping and Management

### **Environmental, Health & Safety Manager Certificate**

This program is designed for EH&S Managers, prospective managers or those filling this role who need a thorough understanding of the methods and tools needed to maintain and manage their EH&S management programs. Students completing this program will be able to setup, manage, evaluate and improve their EH&S program.

#### **Core Requirements**

- ISO 14001
- OHSAS 18001
- Job Hazard Analysis
- ISO 14001 Internal EMS Auditing
- OHSAS 18001 OH&S Management System Auditing
- Advanced Auditing Techniques

**Electives** (None required)

### **Automotive Launch Team Engineer Certificate**

This program is designed for process engineers, quality engineers, launch team leaders and others involved in the launch of new automotive products. Students completing this program will be able to plan, manage and complete their launch programs in accordance with automotive and customer specific requirements.

#### **Core Requirements**

- ISO/TS 16949
- Advanced Product Quality Planning
- Process Failure Mode and Effects Analysis
- Measurement Systems Analysis
- Statistical Process Control
- Production Part Approval Process
- Customer-specific Requirements (customized 1- or 2-day course covering the customer specific requirements of your automotive customers)

**Electives** (1 required)

- Design Failure Mode and Effects Analysis
- Team Problem Solving

### **Supplier Quality Engineer Certificate**

This program is designed for supplier quality engineers and others involved in the evaluation, selection and development of the organization's key suppliers. Students completing this program will be able to evaluate potential suppliers, evaluate supplier performance, and develop the capabilities of their vendors.

#### **Core Requirements**

- ISO/TS 16949 **or** ISO 9001
- ISO 9001 Internal Quality Auditing **or** ISO/TS 16949 Internal Quality Auditing
- Process Failure Mode and Effects Analysis
- Measurement Systems Analysis
- Statistical Process Control
- Team Problem Solving

**Electives** (2 required)

- Value Stream Mapping and Management
- Related Core Tools for Internal Auditors
- Advanced Product Quality Planning