

Training Catalog



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CMS CONSULTING GROUP OVERVIEW

CMS is a Rochester based training and consulting firm in business since 1988. We've worked with more than 150 companies across varied industries and product lines.

Our clients range in size from a thirteen-person software firm to divisions of Fortune 100 companies. We have achieved dramatic results by identifying key areas of need and assembling a collective support group to develop solutions yielding stunning results.

CMS personnel are selected and assigned to projects to meet the technical, strategic and organizational needs of our client. Seasoned project managers facilitate the project teams. They provide both technical and management leadership and focus on addressing specific prioritized opportunities.

The CMS training program is a broad curriculum that includes elements of World Class Manufacturing, Lean Manufacturing, ISO, and Quality Systems. The courses offered in this catalog can be customized to address specific needs. Other training and implementation are available based on the result of a skill's assessment conducted by the company and CMS. Recognizing that each company requires a training program tailored to their objectives, courses, schedules and locations are flexible.

Our goal is to exceed client expectations in every facet of our work. Our success is measured by our client's success. Contact any member of the CMS team at any time for training and implementation assistance.

Training Catalog

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CONTINUOUS IMPROVEMENT TRAINING COURSES

WC1 - World Class Manufacturing Overview

Course Length: One full day

Recommended for all employees

Since effective communication and strong team skills are critical for every organization, senior managers and employees participate in this course. This training module explores the characteristics of World Class Manufacturers, which include Quality Management principles and practices, Lean Manufacturing techniques and benefits, Employee Involvement models, Value Analysis, Time Management, and Managing/Leading Change.

WC2 - Team Building/Effective Meetings

Course Length: One full day

Recommended for anyone who regularly participates in meetings or on teams

This team building course covers the characteristics of effective teams, organization and operating guidelines, team decision making, conducting effective meetings, communication and team development. The various team roles, importance of participation and recognizing and managing dysfunctional conditions are also presented. Group exercises are used to illustrate key concepts.

WC3 - Continuous Improvement/Problem Solving

Course Length: One full day and one half day

Recommended for anyone who regularly participates in teamwork and problem solving

The Continuous Improvement Process course covers the Six-Step Problem Solving model. This widely used model consists of defining the problem, determining root cause, generating potential solutions, selection and planning of solutions, implementing solutions, and verification that the problem was solved. Practical analytical tools are presented as well as the Quality Improvement Model (Plan, Do, Check, Act). Utilizing these continuous improvement tools and process evaluation and monitoring techniques, the group separates into teams to work through a structured problem solving exercise.

WC4 - Continuous Improvement Workshops

Course Length: Variable based on number of teams

Recommended for all employees

To maximize the benefits of classroom training, a series of workshops support employee continuous improvement teams. Facilitators work with each team to reinforce concepts learned in formal training, ensure adherence to structured CI processes and identify ways to expand involvement of other employees. More sophisticated CI concepts are introduced as teams are ready and help develop a reporting process to communicate results to upper management.

WC5 - Strategic Planning

Course Length: 14 weeks

Recommended for anyone with management responsibilities

Once course work is complete in team building, effective meetings and continuous improvement, management proceeds with Strategic Planning concepts. This course establishes the vision, defines the performance objectives needed to fulfill the vision, establishes the systems and mechanisms to monitor achievement of key objectives and identifies how to reset targets to meet future needs. The management team becomes familiar with these team-based, strategic planning concepts and immediately uses them to establish the organization's Vision, Strategic Goals, Improvement Model (mechanism for change) and the necessary support systems for successful implementation of the plan. These objectives are accomplished by a series of facilitated workshops over a period of fourteen weeks.

LM1 - Concepts of Lean Manufacturing

Course Length: One full day

Recommended for all employees

This course is a general education about Lean manufacturing derived from the Toyota Production System. The philosophy, principles and techniques are described for participants and related to their particular company or industry. Objectives and benefits of Lean are discussed, reinforced with real examples of the achievements of U.S. firms that have adapted Lean to their businesses. Attendees participate in hands-on exercises that demonstrate particular techniques. Questions and interactive discussions are encouraged throughout the session.

LM2 - Value Stream Mapping

Course Length: One full day and one half day

Recommended for anyone who will participate in continuous improvement teams

Wherever a product is made for a customer, there is a value stream, but seeing that stream can be difficult. This Value Stream Mapping course provides a formal structure for teams to capture the information and process flows in any given value stream on a single document, both value-added and non value-added steps. After receiving basic education in the process, participants put together a sample map with data provided in the training material. They then create a current state map of one of their own processes.

On the second day (4 hours), participants create a future state map, comprised of an improved process they believe can be accomplished within the next three to four months. A gap analysis between current state and future state is then completed, and the result is a plan for improving the process.

LM3 - Lean Workshops (Kaizen Blitz)

Course Length: Variable - 2 to 5 days depending on mandated goals

Recommended for anyone participating in cross-functional teams

To maximize the benefits of classroom training, the workshops are conducted over 2-5 days using practices described in the lean overview and value stream mapping modules. Following a

brief review of the management mandates, the workshop facilitator provides in-depth training for use of the tools needed to implement improvements. Participant teams gather data from the target area(s) for evaluation. The team brainstorms ideas, selects approaches, accepts assignments, and goes into the workplace to begin implementation. Accomplishments and to-do lists are reviewed daily and a follow-up list is created for all work that can't be completed during the event. On the final afternoon of the event, team members present their accomplishments to management. Workshops assure implementation, rather than lists of "good things to do."

LM4 - 5S/Visual Controls

Course Length: One full day

Recommended for all employees

A Visual Workplace is one where everything has a place and is in its place. Visual Control implies a work area that is self-explaining, self-regulating and continuously improving because it is visibly obvious where improvements need to be made. This course introduces personnel to the concept of using visual signals and information to communicate simply. It also introduces them to the 5S system (Sort, Store, Shine, Standardization, and Sustain), the technique most often recommended as the first Lean tool to introduce to the workforce. The course includes a pilot evaluation of a work area, using a 5S checklist and formation of the first 5S team for a firm.

LM5 - Cellular Manufacturing/Material Flow

Course Length: One full day

Recommended for anyone involved with production, material handling, planning, manufacturing engineering

A cellular process is one in which a family of products or services is produced by a team of personnel who are multi-skilled and dedicated to production of that family of products or services. In the ideal Lean environment, anyone should have a clear "line of sight" of the production process, from incoming raw material and components through to the packaging of the finished product, *with little or no blockages* to the flow. Any blockage or non-value adding stoppage constitutes waste and must be eliminated. The elements of cellular, the benefits of achieving flow, and what must be done to achieve flow in a production area are discussed. The basic concepts may be applied to both manufacturing and service products.

LM6 - Mistake-Proof/Failsafe

Course Length: One full day

Recommended for all employees

Mistake proofing (sometimes referred to as "poka-yoke", but *never* foolproofing) is the use of practices or devices that make it difficult or impossible to do a task incorrectly or that prevent a defect from occurring. Failsafe, a system created during the design phase of a process, makes it impossible for a process to continue if it will lead to injury or a defect, or will cause the process to continue functioning if stoppage would have catastrophic results.

This course introduces participants to mistake-proof and failsafe thinking, including analysis questions, basic root cause analysis, discussing potential sources of error, a method to develop a MP/FS system, and some basic post-analysis questions to establish continuous improvement.

LM7 - Pull/Kanban

Course Length: One full day

Recommended for anyone involved with the flow of material for production

Since this is one of the most misunderstood Lean tools, participants spend time learning the differences between a standard “push” production system versus a Lean “pull” production system. This includes discussions of basic requirements for implementing a pull system, specific tools and formulas used to establish the system, and a basic project plan to implement a pull system. The key to understanding the information is in a hands-on simulation, which can be a simple one-hour demonstration or a much more complex simulation that includes cost roll-ups, quality problems, and more in-depth discussion of issues.

LM8 - Setup Reduction

Course Length: One full day

Recommended for setup personnel, operators, engineers, management

The purpose of this course is to introduce participants to the concepts of setup reduction. This highlights the effect of setup time on the operation as a whole and helps employees understand the advantages of reducing setup time. They are also instructed how and where to start. The course includes a hands-on demonstration and the longer version provides the opportunity to apply information learned in the classroom on the shop floor.

LM9 - Setup Reduction Workshops

Course Length: Variable - 2-5 days, depending on mandated goals

Recommended for setup personnel, operators, engineers, management

Similar to the shorter version, this course introduces participants to the concepts of setup reduction to help them understand the effects of setup time on the operation as a whole. The advantages of reducing setup time are detailed, along with how and where to start. However, this workshop is intended to produce results that actually reduce setup time by the end of the event. While it is possible to achieve positive results without it, we **highly recommended** that the setup be videotaped ahead of time to use as reference during the workshop.

LM10 - Standard Work/Best Practices

Course Length: One full day

Recommended for anyone responsible for work to be standardized

Standard work is the process to be used EVERYTIME by EVERYONE to accomplish the job. This definition is not limited to the shop floor. Standard work is the cornerstone of continuous improvement, the process of finding and eliminating waste. This course introduces participants to tools that complete the job in the best, easiest, safest way, with predictable, high quality results for the customer. The improvements are best developed by those currently doing the job, using the four key forms for standard work: Time Observation Form, Standard Work Combination Sheet, Standard Work Sheet, and Operator Loading Chart.

LM11 - Total Productive Maintenance Overview

Course Length: One full day

Recommended for anyone responsible for equipment maintenance

This course lays the groundwork for implementing autonomous maintenance using a team-based approach. Course content includes an introduction to the basic concepts and principles, including the six biggest losses that lower equipment efficiency, methods for breakdown elimination, and steps for implementing a TPM program.

LM12 - Plant Layout for Lean Production

Course Length: One full day

Recommended for lean team members

This course focuses on tools and techniques for optimizing plant layout in existing or new facilities. Participants learn how to simplify processes, incorporate flexibility, use space economically, minimize handling and improve safety. They use tools such as block diagramming, activity-relationship charting, and flow diagram analysis. Topics include cellular manufacturing, one-piece flow, and 5S/Visual Controls.

LM13 - Production and Inventory Control

Course Length: Variable

Recommended for lean team members

This course is designed to explore the benefits of applying lean concepts to the materials management function. The scope includes the complete cycle of material flow from the purchase and internal control of production materials to the planning and control of work in process to the warehousing, shipping and distribution of finished goods. This course will concentrate on methods to eliminate waste in production, material handling, warehousing and shipping.

Participants will learn lean techniques for reducing scrap, optimizing inventory control, reducing raw material sku's, and implementing packaging recycle/reuse through vendor management programs.

NM1 - Lean in Service Organizations

Course Length: One full day

Recommended for lean team members

The basic principles of lean manufacturing have also been applied successfully in non-manufacturing businesses. This course is a general education on the basic reasons and benefits of lean and how to develop lean teamwork in the service sector. Other topics covered are information flow maps, standard work, 5S in the office, and quality defect detection and paper flow.

TWI1 - Job Instruction

Course Length: 11 hours

Recommended for Continuous Improvement Team Members

Job Instruction Training (JIT) teaches supervisors proper workforce training techniques. The objective of the course is to help supervisors develop a well-trained workforce; have less scrap, rework, and rejects; have fewer accidents; have less tool and equipment damage. The method emphasizes preparing the operator to learn, giving a proper demonstration while identifying the important steps and key points of the job, having the operator perform a trial run, and tapering off coaching while continuing to follow up.

TWI2 - Job Methods

Course Length: 11 hours

Recommended for Continuous Improvement Team Members

Job Methods Training (JMT) teaches supervisors how to improve the way jobs are done. The aim of the program is to help produce greater quantities of quality products in less time by making the best use of manpower, machines, and materials now available. To do that, supervisors are taught to break down jobs into their constituent operations, to question each of these details (Why? What? Where? When? Who?), to develop the new method by eliminating, combining, rearranging and simplifying these details, and to apply the new method, selling it to everyone involved.

TWI3 - Job Relations

Course Length: 11 hours

Recommended for Continuous Improvement Team Members

Job Relations Training (JRT) teaches supervisors how to understand people on all levels and deals with the leadership issues of motivation and problem solving. The course emphasizes that people must be treated as individuals and gives supervisors foundations for developing and maintaining good relations in order to prevent problems from arising. However, when problems do arise, it teaches supervisors to get the facts, weigh and decide, take action, and check results with the key issue being whether the action helped production or not.

QUALITY TRAINING COURSES

QUALITY TOOLS

QT1 - Statistical Tools

Course Length: One full day

Recommended for Continuous Improvement team members

The objective of this course is to familiarize the participants with the basic tools for collecting, analyzing and displaying data: flowcharts, cause and effect diagrams, check sheets, Pareto charts, run charts and histograms. The material is presented through examples of applications and exercises using company data. Three types of data are used: counted, calculated and measured.

QT2 - Statistical Control

Course Length: One full day

Recommended for Continuous Improvement team members

This course builds on the understanding of variation explored in the Statistical Tools course. Variables control charts and the concept of statistical capability are presented through examples and exercises. The course can be extended to address short run control charting using nominals and individual methods.

QT3 - Statistical Analysis

Course length: One full day

Recommended for Continuous Improvement team members

This course is a series of floor level workshops to review data collection methods, calculations and plotting, and analyze signals (interpretation of results) to determine next actions when using control charts to monitor product or process characteristics in order to achieve a state of “statistical control.” Understanding the theory and mechanics of control charts and the concepts of variation explored in the previous two courses are prerequisite for this course.

ISO 9000:2000 / TS 16949

ISO1 - Management Overview

Course Length: One half day

Recommended for management and supervisory personnel

This course is a review of the background of the new standard and expectations for quality systems performance. The participants review the overall plan of activities and timeline in detail to identify resource needs. The scope of changes from the previous version of the standard is briefly reviewed. *Materials: ISO 9001-2000*

ISO2 - Management Workshops

Course Length: Two full days

Recommended for management, supervisory, technical and line personnel

This workshop provides an understanding of ISO requirements. These sessions can be presented in four-hour increments to groups of selected people from each functional area affected by the quality system development and implementation. This module explores in detail the requirements of the standard and provides a comparative survey of any existing practices that should be modified to meet the standard.

ISO3 - Documentation Development and Implementation Workshops

Course Length: Variable depending on mandated goals

Recommended for anyone with knowledge and experience in the area covered by that specific workshop

The objective of these workshops is to aid in the development of quality system documentation. Each workshop focuses on a specific area of the QMS, such as document control, management responsibility and resources, planning of product realization and continuous improvement. During each workshop, a CMS facilitator leads the group in development of the quality system procedure and planning for effective implementation.

ISO4 - Internal Auditor

Course Length: Variable

Recommended for employees designated to audit internal systems

This course has three distinct elements:

- Examination of the techniques and tools for auditing and the requirements for an internal audit program
- Examination of requirements of the standard and the expected approaches to be evaluated in an audit. Samples of company documentation can be used to develop audit questions.
- Completion of a desk audit for adequacy of documented practices and a floor audit for compliance to procedures and instructions, including required records.

ISO5 - Corrective Action

Course Length: Variable

Recommended for management, supervisory, technical and line personnel

This training course will be conducted in workshops format to assist in continuous improvement of the QMS.

- Participants will be trained to participate as auditees when their areas of responsibility are examined, providing sufficient evidence of “planned approaches” for system elements and examples of compliance to existing practices/documentation and records (includes the pre-assessment audit report)
- Participants will learn methods to conduct corrective action, investigations and preparation of responses to findings
- Participants will learn procedures to verify corrective actions

These workshops provide the skills necessary to maintain needed quality system procedures, identify non-compliances and opportunities for improvement, develop actions needed to improve the system, and define methodologies to achieve those improvements.

ISO6 - Workforce Quality Management System Overview

Course Length: Variable

Recommended for all personnel

This course presents an overview of the company quality management system documentation to all employees. It addresses the principles, structure of documentation, and the basic procedures and priorities so that employees recognize the interrelationship of the QMS processes to their specific job instructions.

ISO7 - Workforce Deployment

Course Length: Variable

Recommended for management, supervisory, technical and line personnel

This course consists of sessions that reinforce the quality management system training. The sessions are conducted within department/functional groups to ensure consistent support for the quality management system and an understanding of the employee role in the audit process. Implementation of the internal audit process will monitor compliance throughout the company. Results will be reviewed regularly as part of the management review process.

ISO8 - Management Review

Course Length: Variable

Recommended for designated management review team members

CMS will conduct training for the Management Review team providing them with the knowledge and ability to conduct management reviews as prescribed by ISO 9001:2000 and as documented in their quality system procedure.

- Participants will learn to conduct management review activities in accordance with required procedures
- Participants will learn how to properly prepare input to the management review process
- Participants will learn how to assess the readiness of their quality system implementation to proceed into the certification audit based on the results of their internal audits
- Participants will learn the correct techniques for follow-up and tracking of actions, and for reporting of decisions and conclusions from a management review event

WC6 - Quality Management

Course Length: 8 – 12 hours

Recommended for anyone with management responsibilities

This course addresses the principles of quality management and the systematic means for applying those principles in the business environment. The team examines the key phases in changing the company's culture as it pursues its vision of becoming World Class. These phases include commitment, planning, initiation, expansion, and integration. The definition of quality had been expanded to include *providing specified characteristics of a product or service*. To

accomplish this, the company must consistently perform its processes, comply with established systems and work within its culture. A successful quality management program promotes continual improvement and enhances customer satisfaction and the satisfaction of other stakeholders.

WC7 - Cost of Quality

Course Length: variable

Recommended for anyone with management responsibilities

This course includes an overall COQ overview to address the value of COQ in regular continuous improvement projects and in benchmarking/goal setting for the organization. Top Topics include use of COQ in problem solving, evaluating the impacts of problem conditions, selection criteria for the optimum solution (using COQ as a factor in the decision matrix) and assessing results. Review of definitions, the approach to be used, the overall course plan and the specific products/applications will form the basis of the workshops conducted to reinforce COQ concepts. A separate series of workshops will cover designing a process to collect and maintain COQ data that will support development of costing models that can be used by CI teams on an ongoing basis.

QUALITY STANDARDS

QS1 - Failure Mode and Effect Analysis (FMEA)

Course Length: One full day

Recommended for quality systems specialists

This course covers the method prescribed in the automotive industry reference manual for design and process FMEA's. Participants learn how to implement this valuable tool to assure that potential failure modes and their associated causes/mechanisms have been considered and addressed. The elements of a Risk Prioritization method are covered through examples and exercises.

QS2 - Advanced Product Quality Planning

Course Length: One full day

Recommended for quality systems specialists

This course covers the methods required in the automotive industry reference manual for developing a quality plan and documenting the steps/methods to assure the product satisfies customer expectations. Participants learn how to develop and implement a control plan describing the actions at each phase of the product realization process.

QS3 - Production Part Approval Process (PPAP)

Course Length: One full day

Recommended for quality system specialists

This course covers the methods outlined in the automotive industry reference manual for production part approval. Participants learn to prepare the necessary documents to obtain

customer approvals for pre-production and initial production runs. This course can be extended to address techniques for conducting and documenting process studies, design reviews, and process planning.

QS4 - Measurement Systems Analysis

Course Length: One full day

Recommended for quality system specialists

This course covers the tools presented in the automotive industry reference manual to perform gage repeatability and reproducibility studies. Examples and exercises cover various calculations to determine the Total Variation ratio or percentage in evaluating measurement systems (equipment, operators, and process variation).