



Updated Training Catalog 2024

The Certification Exam Preparation Courses, Certificate Programs, and the Workshops are offered on demand. They will be scheduled when you are ready to engage. The Training Events are conducted in a virtual, interactive format, one day per week.

Certified Master Instructors with Years of Practical Experience.

Contact our Instructor – Chuck Gates at chuckgates@sbcglobal.net with questions or email membership@smechicagoland.com

Certified Manufacturing Associate (CMfgA)

Certified Manufacturing Associate (CMfgA) Exam Preparation Course

The three, 2-hour session web interactive course is expected to prepare candidates to pass the SME Certified Manufacturing Associate Exam (CMfgA) Exam. The body of knowledge consists of applied mathematics, safety, quality, lean, inspection, fasteners, CNC, robotics, and additive manufacturing. Upon passing the certification exam, individuals will earn a digital badge that will expire after five years, and they may use the credentials CMfgA following their name.

Course Fee: \$450 6 CEUs

Study Materials: Fundamentals of Manufacturing Package (\$150) must be purchased at www.sme.org

Exam Requirements: Download CMfgA BOK.pdf at www.sme.org

Exam Fee: College Student \$75, Unemployed Individual \$75, Employed Individual \$125

The CMfgA Exam can be proctored on site.

Goal: After completing the CMfgA Exam Preparation Course, candidates can take the SME CMfgA Exam and become Certified after successfully passing the Exam.

Certified Manufacturing Technologist (CMfgT)

Certified Manufacturing Technologist (CMfgT) Exam Preparation Course

The six, 2-hour session web interactive course is expected to prepare candidates to the SME Certified Manufacturing Technologist Exam (CMfgT) Exam. The body of knowledge consists of mathematics, applied & engineering sciences, materials, product & process design & development, manufacturing process applications, operations, production systems, equipment design, automated systems, controls, quality, continuous improvement, manufacturing management, and personal effectiveness. CMfgT Exam Eligibility Requirements: 4 years of combined manufacturing-related education and/or experience. Requires recertification every 3 years with 36 recertification units.

Course Fee: \$900 12 CEUs

Study Materials: Fundamentals of Manufacturing Package (\$150) must be purchased at www.sme.org

Exam Requirements: Download CMfgT BOK.pdf at www.sme.org

Exam Fee: \$245 SME members and \$490 nonmembers

The CMfgT Exam can be proctored on site.

Goal: After completing the CMfgT Exam Preparation Course, candidates can take the SME CMfgT Exam and become Certified after successfully passing the Exam.

Certified Manufacturing Engineer (CMfgE)

Certified Manufacturing Engineer (CMfgE) Exam Review Course

The six, 2-hour session web interactive course is expected to prepare candidates to take the SME Certified Manufacturing Engineer Exam (CMfgE) Exam. The body of knowledge consists of mathematics, applied & engineering sciences, materials, product & process design & development, manufacturing process applications, operations, production systems, equipment design, automated systems, controls, quality, continuous improvement, manufacturing management, and personal effectiveness.

CMfgE Exam Eligibility Requirements: 8 years of combined manufacturing-related education and/or experience, including a minimum of 4 years of work experience. Requires recertification every 3 years with 36 recertification units.

Course Fee: \$900 12 CEUs

Study Materials: Fundamentals of Manufacturing Package (\$150) must be purchased at www.sme.org

Exam Requirements: Download CMfgE BOK.pdf at www.sme.org

Exam Fee: \$275 SME members and \$520 nonmembers

The CMfgE Exam can be proctored on site.

Goal: After completing the CMfgE Exam Preparation Course, candidates can take the SME CMfgE Exam and become Certified after successfully passing the Exam.⁴

Certified Additive Manufacturing - Fundamentals (CAM-F)

Certified Additive Manufacturing - Technician (CAM-T)

Certified Additive Manufacturing – Fundamentals and Certified Additive Manufacturing – Technician Exam Preparation Course

The three, 2-hour session web interactive course is expected to prepare candidates to the SME Certified Additive Manufacturing – Fundamentals (CAM-F) or Certified Additive Manufacturing - Technician Exam (CAM-T) Exam. The (CAM-F) body of knowledge consists of the basics of additive manufacturing, including a comprehensive overview of additive manufacturing, the seven additive manufacturing technologies, and basic safety guidelines. The Fundamentals certification is ideal for individuals working in or seeking to work in additive manufacturing roles in automotive, aerospace, and medical equipment. It is also ideal for high schools and colleges as a capstone or stand-alone achievement to increase workforce readiness in additive manufacturing. The Technician exam focuses on the methodology of additive manufacturing, including the seven additive manufacturing technologies, processes, material selection, post-processing, and basic safety guidelines. The Technician certification is ideal for any business professional, engineer, designer, or technician who has a two-year associate's degree in additive manufacturing or is currently enrolled in a college program, and/or has one or more years of working experience in a manufacturing-related field.

Course Fee: \$450 6 CEUs

Study Materials: Gibson, Ian, Rosen, David, and Strucker, Brent. *Additive Manufacturing Technologies: 3D Printing, Rapid Prototyping, and Direct Digital Manufacturing*, Third Edition. Springer, 2021. ISBN 978-3-030-56126-0. Available at [amazon.com](https://www.amazon.com)

Exam Fee: CAM-F \$159 SME members and \$249 nonmembers
CAM-T \$179 SME members and \$269 nonmembers

The CAM-F and CAM-T Exams can be proctored on site.

Lean Bronze Certification (LBC)

Lean Bronze Certification (LBC) Exam Review Course

Phase I – Exam

Exam content is linked to the Lean Bronze Body of Knowledge. Candidates are expected to successfully pass the 172-question, 3-hour exam before moving to the portfolio phase.

Phase II – Portfolio

Lean Certification candidates continually exercise their Lean knowledge by participating in activities in which they apply Lean principles and tools. At the Bronze-Level, practitioners demonstrate their experience through the development of their Lean portfolio. 80 hours of education/training, five tactical projects, and portfolio reflection within a three-year timeframe after the exam. Requires recertification every 3 years with 60 recertification units.

The LBC Exam Preparation Course consists of six, 2-hour web interactive sessions.

Course Fee: \$900 12 CEUs

Study Material: Will be provided with the course fee.

Exam Requirements: Download LBC BOK.pdf at www.sme.org

Exam Fee: \$439 SME members and \$599 nonmembers; exam registration at www.sme.org The LBC Exam can be proctored on site.

Goal: After completing the LBC Exam Preparation Course, candidates can take the SME LBC Exam and become Certified after successfully passing the Exam and completing the Portfolio.

Six Sigma Yellow Belt Certification (CSSYB)

Six Sigma Yellow Belt (CSSYB) Accelerated Exam Prep Course

CSSYB Body of Knowledge: Six Sigma Fundamentals, Team Basics, Define Phase, Measure Phase, Analyze Phase, Improve Phase, and Control Phase.

CSSYB Exam Requirements: The Six Sigma Yellow Belt has no education or experience requirements. The ASQ CSSYB Certification is a lifetime certification designation and there is no certification maintenance required.

CSSYB Accelerated Review Course will be three, 2-hour, instructor-led, Web sessions with projected visuals and an interactive audio connection.

Course Fee: \$450 6 CEUs

Study Materials: CSSYB Primer and CSSYB Solutions Text must be purchased from the Quality Council of Indiana at www.qualitycouncil.com

Exam Fee: \$294 ASQ Members and \$394 for Non-members

Goal: After completing the CSSYB Exam Preparation Course, candidates can take the ASQ CSSYB Exam and become Certified after successfully passing the Exam.

Six Sigma Green Belt Certification (CSSGB)

Six Sigma Green Belt (CSSGB) Accelerated Exam Prep Course

CSSGB Body of Knowledge: Six Sigma & the Organization, Define Phase, Measure Phase, Analyze Phase, Improve Phase, and Control Phase.

CSSGB Exam Requirements: Requires three years of work experience within the CSSGB Body of Knowledge. The CSSGB Certification is a lifetime certification designation and there is no certification maintenance required.

CSSGB Accelerated Review Course will be three, 2-hour, instructor-led, Web sessions with projected visuals and an interactive audio connection.

Course Fee: \$450 6 CEUs

Study Materials: \$125 CSSGB Primer and CSSGB Solutions Text must be purchased from the Quality Council of Indiana at www.qualitycouncil.com

Exam Fee: \$338 ASQ Members and \$438 for Non-members

Goal: After completing the CSSGB Exam Preparation Course, candidates can take the ASQ CSSGB Exam and become Certified after successfully passing the Exam.

Six Sigma Black Belt Certification (CSSBB)

Six Sigma Black Belt (CSSBB) Accelerated Exam Prep Course

CSSBB Body of Knowledge: Enterprise-Wide Deployment, Define Phase, Measure Phase, Analyze Phase, Improve Phase, Control Phase, and Design for Six Sigma.

CSSBB Exam Requirements: The application for Six Sigma Black Belt requires two completed projects documented by signed affidavits; or one project and a signed affidavit and three years of work experience as it pertains to the Body of Knowledge. Requires recertification every 3 years with 18 Recertification Units.

CSSBB Accelerated Review Course will be three, 2-hour, instructor-led, Web sessions with projected visuals and an interactive audio connection.

Course Fee: \$450 6 CEUs

Study Materials: \$125 CSSBB Primer and CSSBB Solutions Text must be purchased from the Quality Council of Indiana at www.qualitycouncil.com

Exam Fee: \$438 ASQ members; \$538 nonmembers

Goal: After completing the CSSBB Exam Preparation Course, candidates can take the ASQ CSSBB Exam and become Certified after successfully passing the Exam.

Other Professional Certification Exam Preparation Courses Available on Request

Quality

Certified Quality Engineer (CQE)

Certified Manager of Quality/Operational Excellence (CMQ/OE)

Certified Quality Auditor (CQA)

Certified Supplier Quality Professional (CSQP)

Project Management

Certified Associate in Project Management (CAPM)

Project Management Professional (PMP)

Goal: After completing the Exam Preparation Course, candidates can take the specific Exam and become Certified after successfully passing the Exam.

Certificate Programs (Three, 2-Hour Sessions, \$450, 6 CEUs)

Project Management (PM) Certificate

Industry 4.0 Digital Transformation, Manufacturing 4.0, and Quality 4.0 Certificate

Lean & Six Sigma Fundamentals Certificate

Manufacturing Engineer Certificate (MEC)

Statistical Process Control (SPC) Certificate

Manufacturing/Business Analytics Certificate

Continuous Process Improvement (CPI) Certificate

Must pass the certificate test (70% or higher) to earn the certificate.

2-Hour (\$100) Instructor-Led Webinar Programs

Earn 2 Continuing Education Units (CEUs)

❖ **Lean & Six Sigma Best Practices**

Lean Principles, Six Sigma Fundamentals, Lean versus Six Sigma, Best Practices, Training, Practical Lean and Six Sigma Examples, Sustaining the Gains. Potential Professional Certifications: Lean Bronze Certification (LBC), Certified Six Sigma Green Belt (CSSGB), Certified Six Sigma Black Belt (CSSBB).

❖ **Project Management Best Practices**

Project Management Body of Knowledge, Five Project Management Process Groups, Ten Knowledge Areas, Forty-Seven Processes, Organizing for Effective Project Management, Sustaining the Gains of Projects. Potential Professional Certifications: Certified Associate in Project Management (CAPM) and Project Management Professional (PMP).

❖ **Quality Management System ISO 9001:2015**

QMS Fundamentals, ISO 9001:2015 QMS International Standard Certification, Organization Context, Leadership, Planning, Support, Operation, Performance Evaluation, Improvement, Internal Audit.

❖ **Statistical Process Control (SPC)**

Variable Control Charts, Attribute Control Charts, Common Causes and Special Causes, Sources of Variability, Control Limits, Control Chart Analysis, Control Chart Rules, Process Capability (Cp and CpK). and Practice Exercises.

❖ **Continuous Process Improvement (CPI)**

Review Nearly All of the Continuous Process Improvement (CPI) Tools, Advantages and Disadvantages of Each CPI Tool, Determine the Two Critical Processes that Need Improvement, Select Two Continuous Process Improvement Tools to Get Started, Metrics for Improvement, and CPI Best Practices.

2-Hour (\$100) Instructor-Led Webinar Programs

Earn 2 Continuing Education Units (CEUs)

❖ **Financial Analysis and Cost Estimating**

Income Statement (Revenue – Expenses = Net Income), Balance Sheet (Assets – Liabilities = Owner's Equity), Depreciation Methods, Cash Flow Report (Positive Cash Flow – Negative Cash Flow = Net Cash Flow), Improving the Financial Results, Return on Assets (ROA), Return on Investment (ROI), Cash-to-Cash Cycle Time, Cost Estimating Fundamentals, Fixed Costs and Variable Costs, Breakeven Analysis, Economics and Sustainable Competitive Advantage, Time Value of Money, Capital Projects, Expense and Cost Reduction Projects.

❖ **Forecasting Accuracy Improvement**

Short-Term Forecasting Methods, Long-Term Forecasting Methods, Measuring Forecast Accuracy, Current Forecast Accuracy, Future Forecast Accuracy Objective, and Improving Forecast Accuracy.

❖ **Labor Relations Best Practices**

Human Resource Policies, Practices, and Procedures, Employment and Labor Laws, Employer and Employee Rights, Progressive Discipline Process, Managing Labor in a Union-Free Environment, Managing Labor in a Union Environment, and Human Resource Management.

❖ **Customer Relationship Management (CRM)**

Customer Service and Customer Satisfaction, Defining Customer Expectations: Explicit, Implicit, Static, Dynamic, Technological, Interpersonal, & Situational, Voice of the Customer, Customer Segmentation, Four Main Customer Categories, One-to-One Marketing, Demand Forecast Accuracy, Excellence in Order Fulfillment.

❖ **Risk Management ISO 31000**

Risk Management Basics, Risk Planning, Risk Assessment, Risk Analysis, Risk Mitigation

2-Hour (\$100) Instructor-Led Webinar Programs

Earn 2 Continuing Education Units (CEUs)

- ❖ **Leadership & Management Best Practices**
Leadership Principles, Management Functions, Ethics and the Code of Conduct, Situational Leadership Model, SMART Goals, Management by Objectives (MBO), Effective Performance Evaluations, Employee Mentoring and Development, Hiring the Best, Incentives, and Employee Retention.
- ❖ **Advanced Statistics and Hypothesis Testing**
Normal Probability Distribution, Binomial Probability Distribution, Poisson Probability Distribution, Regression Analysis and Correlation, Confidence Intervals, Hypothesis Testing, and Design of Experiments (DOE).
- ❖ **Industry 4.0, Manufacturing 4.0, Smart Factory and Digital Transformation**
The Fourth Industrial Revolution, Cyber-Physical Systems, Factory of the Future, New Technologies, Automation and Robotics, Advanced Computer Capabilities, Connected Supply Chain, Adoption of Manufacturing Execution Systems, Use of Emerging Technologies in Manufacturing, Manufacturing Evolution, Three Pillars of Manufacturing 4.0, Lean and Manufacturing 4.0, Implementation Strategies, Digital Manufacturing, Automated Manufacturing, Additive Manufacturing, Human Machine Interface, Advanced Sensors, Machine Monitoring, Machine Technologies, Instrumentation and Control Systems.
- ❖ **Supply Chain Management Best Practices**
Supply Chain Infographic: Understanding the Supply Chain, Three Flows (Information, Product, and Cash), Supply Chain Entities (Suppliers, Logistics Providers, Manufacturers, Distributors, End Users), Supply Chain Processes, Supply Chain Drivers and Metrics, Demand Forecasting, Transportation Management, Warehouse Management, Inventory Management. Potential Professional Certifications: Certified in Production and Inventory Management (CPIM), Certified in Logistics, Transportation, and Distribution (CLTD), Certified Supply Chain Professional (CSCP).

2-Hour (\$100) Instructor-Led Webinar Programs

Earn 2 Continuing Education Units (CEUs)

❖ **Auditing Fundamentals**

Types of Quality Audits, Purpose and Scope of Audits, Criteria to Audit Against, Audit Process and Responsibilities, Corrective and Preventive Action (CAPA), Audit Documentation, Objective Evidence, and Reporting, Auditor Competencies, Auditing Standards ISO 19011:2011, Auditing Best Practices. Potential Professional Certification: Certified Quality Auditor (CQA)

❖ **Quality 101 – Fundamentals**

Quality Management System, Quality and Planning Tools, Inspection and Testing, Continuous Quality Improvement Tools, Corrective and Preventive Action (CAPA), Control Charts. Potential Professional Certifications: Certified Quality Improvement Associate (CQIA), Certified Quality Process Analyst (CQPA), Certified Quality Technician (CQT), Certified Quality Inspector (CQI), Certified Quality Engineer (CQE), Certified Manager of Quality/Organizational Excellence (CMQ/OE).

❖ **Supplier Quality Fundamentals**

Supply Chain Strategy, Supplier Lifecycle Management, Supplier Agreements and Contracts, Risk Management, Supplier Selection and Part Qualification, Supplier Performance Monitoring and Improvement, Supplier Quality Management, Relationship Management, Business Governance, Ethics, and Compliance. Potential Professional Certification: Certified Supplier Quality Professional (CSQP).

❖ **Hiring Best Practices**

Reactive versus Proactive Hiring, Projection of Job Openings (Talent Needs), Wide Variety of Sources for Qualified Job Candidates, Potential Hiring Categories: Leased (Contract), Part-Time, Full-Time, Intern, Temporary, Outsource, Creating a Talent Pool, Structured Interview Process (Targeted Selection), Pre-Employment Screening and Background Check, and Effective Onboarding of New Employees.