

Quality Assurance and Management Certificate



ST. CLAIR COLLEGE CORPORATE TRAINING

The Quality Assurance and Management Certificate Program customized for Unifor National equips you with the practical skills and industry knowledge to ensure top-quality products and processes across a variety of sectors, including the fast-growing electric vehicle (EV) industry. Prepare to take on critical roles that drive innovation and reliability in cutting-edge manufacturing environments. Whether you're ensuring compliance, auditing processes, or analyzing supplier performance, you'll be prepared for in-demand roles such as: *Quality Assurance Inspector, Quality Control Technician, Production Line Auditor, Supplier Quality Analyst, Compliance Officer, Product Quality Inspector, Internal Standards Auditor.*

Total # of program hours: 400

STRATEGIES FOR SUCCESS (4 hours)

Introduction to the training program, expectations, overview of student services, student email account, and overview of Blackboard (web-based online learning platform).

QUALITY CONCEPTS (40 hours)

This course is the foundation for the Quality Certificate Program and is a prerequisite for the other courses. The course is designed for students interested in learning about some basic tools and concepts of quality. Topics include; the history and importance of quality, quality management philosophies, quality in different sectors, principles of total quality, resources, teams, process management and improvement; designing the QA system, the seven management and planning tools, quantitative measures, SPC, capability and control; inspection and test.

BASIC STATISTICS & SPC (40 hours)

This course introduces the basic concepts of statistics, useful process control tools and their workplace applications. It is a pre-requisite for other courses in the Quality Certificate Program. Topics covered include: what is statistics, types of data, collecting data, patterns of distribution, probability distributions, sampling distribution, hypothesis testing, control charts; collecting summarizing data, SPC, analyzing process capability, tools and techniques relevant to auditing.

QUALITY AUDITING (40 hours)

The quality audit profession is recognized as an integral part of doing business. Internal auditing is a requirement of quality management system measures. This course will introduce the concept of quality auditing to the student as a part of a business function as well as a profession. ASQ code of ethics, professional conduct and liability issues, audit program management, general knowledge and skills relevant to the success of the audit program and professional auditor are covered.

ESSENTIALS OF QUALITY MANAGEMENT (40 hours)

This course introduces the student to the principles of management, quality systems and quality models; quality management tools, process management approaches and customer-focused organizations. Problem solving skills as a management tool are reviewed. The course is highly interactive and designed to develop the interpersonal skills of the student.

ADVANCED STATISTICAL METHODS (40 hours)

Building on knowledge and skill learnt in Basic Statistics and SPC, this course covers more advanced statistical concepts and techniques for problem solving and quality improvement in the workplace. The student will learn advanced topics which include: probability rules, discrete and continuous random variables, binomial and poisson distribution, hypothesis testing, central limit theorem, the "T" distribution, the "F" distribution, correlation analysis, linear regression, the chi-square distribution.

ISO 9000 IMPLEMENTATION & DOCUMENTATION (40 hours)

This course is designed to provide the student with a basic understanding of **ISO 9001:2015E**, the quality management system implementation process, as well as, how to prepare documentation, create policies, procedures and instructions required by a quality system.

RELIABILITY (40 hours)

This course introduces the student to fundamental concepts of reliability and applications in the workplace. Topics Include: What is reliability? The history of failure rate, normal distribution, central tendencies, dispersion, standard deviation; system reliability, stand-by parallel systems. Introduction to the test of hypothesis, mean, sigma and MTBF; failure reporting analysis and corrective action system, FMEA, fault tree analysis; design reliability and review; reliability management, safety and human factors, nature of failure, part selection; maintainability, reliability testing.

INSPECTION, TEST, METROLOGY & PRINT READING (40 hours)

This course develops the knowledge and skills of the technician and inspector, as well as, anyone requiring a foundation in these topics. It introduces the fundamental concepts and principles of print reading for the quality function and touches on geometric dimensioning and tolerancing. Inspection and metrology topics include the history of measurement, its' importance, the units and types of measure; types of measuring equipment and calibration, as well as, testing, hardness testing, force and angle measurement and non-destructive testing, sampling and sampling types.

LEAN MANUFACTURING (20 hours)

This course introduces the principles and practices of that help organizations streamline operations, reduce waste, and improve quality. Participants will explore essential Lean tools such as 5S, Kanban, Value Stream Mapping, and Just-In-Time through practical examples and discussions.

EXCEL LEVEL I (7 hours)

This workshop covers introductory material geared towards those with little or no knowledge of Excel. It covers the basics of navigating around Excel; entering and editing a worksheet, moving/copying, AutoFill, formatting, creating formulas, basic functions, printing and previewing, and charts.

EXCEL LEVEL II (7 hours)

This workshop covers some more advanced functions (such as VLOOKUP, IF, PMT). It also touches on working with multiple workbooks/worksheets, consolidation features, and working with tables (Excel database features). Sorting and filtering are also covered.

BATTERY CHEMISTRY AND PROCESS OVERVIEW (15 hours)

Students will be exposed to the components of an electrochemical cell. As well as the general Li-Ion chemistries that occur within the cell. Additionally, students will learn the manufacturing steps to produce Li-Ion cells, modules and packs.

EV BATTERY HANDLING AND STORAGE OVERVIEW (8 hours)

Students will be introduced to key concepts in the safe handling, storage, and transport of EV batteries. Topics include battery types, safety risks, storage requirements, and compliance with industry standards.

EV BATTERY QUALITY (15 hours)

This course is an introduction to electric vehicle (EV) battery quality, covering key aspects such as performance standards, testing methods, safety protocols, and common quality challenges. Students will gain insights into ensuring battery reliability, durability, and safety in EV applications.

RESUME WRITING (4 HOURS)

This workshop is designed to equip participants with skills to craft a compelling, professional resume that will effectively highlight their experience, skills, and accomplishments. and use the right keywords to pass automated screenings.



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