

Course Descriptions

Math Fundamentals 101

The class "Math Fundamentals" covers basic arithmetic operations, including addition, subtraction, multiplication, and division. Additionally, it introduces the concept of negative numbers and integers. The class concludes with an overview of the order of operations and grouping symbols.

Basic mathematical operations are the foundations upon which all math relies. Mastery of these foundational tasks will ease a student into more complicated mathematics, such as algebra and geometry, both of which are commonly used in a variety of manufacturing environments.

Intro to OSHA 101

"Intro to OSHA" provides an introduction to the purpose of OSHA and how its standards and guidelines affect employers and employees. Most U.S. workplaces are covered by OSHA, and its existence has greatly improved workplace safety. Some industries are not covered by OSHA, however, and some states have safety programs that take the place of OSHA. OSHA standards are enforceable by law. Compliance with OSHA standards is enforced by inspections and record keeping, which have specific steps and requirements. Employers and employees have different rights and responsibilities regarding OSHA standards.

Both employers and employees benefit from basic knowledge about OSHA's purpose, standards, and practices. Violations of OSHA standards are punishable by law and render the workplace unsafe for all personnel. A basic awareness of the standards, rights, and responsibilities will help employees to bolster workplace safety as well as keep the workplace legally compliant.

Personal Protective Equipment 111

The class "Personal Protective Equipment" introduces the purpose and uses of personal protective equipment (PPE). As defined by the Occupational Safety and Health Administration (OSHA), PPE minimizes exposure to hazards and helps prevent injury. In order to select appropriate PPE, employers must first evaluate the workplace with a hazard assessment. PPE may be categorized by the area of the body it protects. PPE is available in several types, designs, and materials. Every employer is responsible for providing the appropriate PPE for workers who require it, and it is every employee's responsibility to properly wear and use PPE. OSHA does not often specify which types of PPE should be worn, but requires that employers train each employee in proper use and retrain when PPE changes or if PPE is used improperly. After taking this class, users should be able to describe OSHA regulations regarding personal protective equipment and how they impact day-to-day operations in the workplace.

Quality Overview 111

“Quality Overview” provides a comprehensive introduction to the importance of quality and how to achieve it in both processes and products. A quality organization meets the needs of both internal and external customers. To do this, all the departments of an organization must work together and be equally focused on quality. Organizations use various methods, such as quality management systems and quality standards to ensure quality.

Basic Measurement 101

The class “Basic Measurement” offers an overview of common gaging and variable inspection tools and methods. Variable inspection takes a specific measurement using common devices such as calipers and micrometers. The sensitivity of the instrument must be greater than the measurement being taken. Both calipers and micrometers are read by finding the alignments in lines on the devices. Gages, such as gage blocks, plug gages, ring gages, and thread gages, reveal whether a dimension is acceptable or unacceptable without a specific quantity. All inspection devices should be properly mastered and maintained to retain accuracy. One of the fundamental activities of any shop is the measurement of part features. Consistent measurement and inspection maintains standardization and ensures that out-of-tolerance parts do not reach customers. After taking this class, users should be able to describe the use and care of common inspection instruments and gages used in the production environment.