

Course No. 1660

Fabrication Engineering & Workshop Management

MATERIALS, WELDING & FABRICATION ENGINEERING
INDUSTRIAL ENGINEERING, MAINTENANCE & OPERATIONS

DURATION

5 Days

DELIVERY

Classroom



Course Overview

The Fabrication Engineering & Workshop Management Training Course provides a comprehensive and practical framework for managing modern fabrication workshops while strengthening technical, operational, quality, safety, and productivity performance. The course is designed to connect fabrication engineering principles with effective workshop planning, resource management, production control, quality assurance, equipment reliability, and continuous improvement.

Efficient fabrication operations require more than technical expertise. Workshops must be capable of translating engineering drawings and specifications into controlled production activities while managing materials, manpower, machinery, tools, schedules, quality requirements, and safety risks. This course provides participants with practical approaches for organizing these activities and improving the overall flow of fabrication work.

The program covers key areas of fabrication engineering and workshop management, including material selection, fabrication processes, cutting, forming, machining, welding, assembly, production planning, work order management, workshop layout, material control, equipment utilization, inspection, quality management, maintenance, and occupational safety. Particular attention is given to managing fabrication activities in demanding industrial environments such as oil and gas, energy, petrochemical, manufacturing, engineering, construction, and heavy industry.

A strong focus is placed on workshop performance and operational efficiency. Participants will examine productivity, equipment utilization, material consumption, rework, non-conformities, production delays, bottlenecks, and schedule adherence. They will learn how to use operational information and performance indicators to identify root causes of poor performance and establish practical improvement measures.

Through practical exercises, fabrication case studies, production planning activities, quality scenarios, and workshop improvement exercises, participants will develop the ability to plan fabrication operations, allocate resources, control production activities, improve quality, manage workshop equipment, strengthen safety, and improve productivity. The course supports organizations seeking to establish disciplined and efficient workshop operations while maintaining engineering and quality requirements.

Objectives

- Analyze the fundamental principles of fabrication engineering and evaluate their impact on productivity, quality, cost, and operational performance.
- Evaluate material characteristics, fabrication requirements, equipment capabilities, and tooling requirements for specific workshop activities.
- Apply structured approaches to work order planning and fabrication process sequencing within the workshop.
- Develop practical operating plans for managing manpower, equipment, materials, tools, and production priorities.
- Evaluate workshop workflow and identify bottlenecks, production delays, material constraints, and sources of rework.
- Apply productivity improvement techniques to reduce waste and improve the utilization of workshop resources.
- Design practical quality control and inspection procedures for fabrication and assembly activities.
- Evaluate equipment performance and integrate maintenance and reliability practices into workshop operations.
- Improve the management of materials, consumables, tools, and spare parts to support uninterrupted fabrication activities.
- Apply occupational safety principles to identify and control risks associated with fabrication workshop operations.
- Analyze workshop performance indicators and use operational data to identify measurable improvement opportunities.
- Develop an actionable workshop improvement plan covering productivity, quality, cost, safety, equipment reliability, and resource utilization by the end of the course.

Who Should Attend

This training course is designed for engineers, supervisors, technicians, and managers involved in fabrication engineering, workshop management, production, maintenance, mechanical engineering, industrial engineering, metal fabrication, welding, assembly, and manufacturing operations. It is particularly relevant to fabrication engineers, production engineers, workshop managers, workshop supervisors, production planners, maintenance supervisors, quality engineers, project engineers, fabrication technicians, and operations personnel.

The course is also suitable for managers and department heads responsible for workshop productivity, fabrication operations, maintenance, quality, and operational safety within oil and gas, petrochemical, power generation, manufacturing, heavy industry, engineering, construction, utilities, and industrial contracting organizations. It provides practical value to professionals responsible for coordinating fabrication activities, monitoring work orders, managing resources, improving production flow, and addressing operational delays.

Professionals working in planning, materials management, procurement, quality assurance, quality control, maintenance, and occupational safety will also benefit from the program, particularly where their responsibilities require close coordination with fabrication workshops. The course is equally relevant to specialists involved in developing work procedures, improving operational performance, increasing equipment utilization, and strengthening fabrication quality.

Learning Outcomes

- Analyze fabrication processes and identify the factors influencing productivity, quality, cost, and delivery performance.
- Select appropriate materials, fabrication methods, equipment, and tooling according to technical and production requirements.
- Develop practical fabrication process sequences and work orders for workshop activities.
- Prepare operating plans for allocating manpower, equipment, materials, and tools according to production priorities.
- Identify workshop bottlenecks, production delays, material constraints, and causes of rework.
- Apply practical methods for improving workflow, reducing waste, and increasing resource utilization.
- Establish appropriate inspection and quality control points throughout fabrication and assembly processes.
- Evaluate equipment readiness and integrate maintenance and reliability practices into workshop performance management.
- Improve the control of materials, tools, consumables, and spare parts to support continuous fabrication operations.
- Identify workshop safety hazards and apply appropriate risk control measures.
- Use workshop performance indicators to measure productivity, quality, equipment utilization, cost, and schedule adherence.

- Develop a practical and measurable improvement plan for a fabrication workshop.

Course Outline

DAY 01

Fabrication Engineering Principles & Workshop Processes

- Fundamentals of fabrication engineering and the role of fabrication workshops in industrial operations
- Engineering drawings, technical specifications, fabrication requirements, and production documentation
- Material properties and material selection for fabrication applications
- Cutting, forming, machining, welding, assembly, and metal fabrication processes

PRACTICAL APPLICATION

Analyze a fabrication work order and determine the required materials, processes, equipment, tooling, and production sequence

DAY 02

Production Planning & Workshop Operations Management

- Fabrication work order planning and production scheduling
- Process sequencing, resource allocation, and production priorities
- Manpower, equipment, material, and tooling management

WORKSHOP

Workshop layout, material flow, workstations, and production movement

PRACTICAL APPLICATION

Develop a workshop production plan covering work orders, resources, process sequence, priorities, and delivery requirements

DAY 03

Quality Management & Inspection in Fabrication

- Quality assurance and quality control principles for fabrication workshops
- Inspection requirements throughout fabrication, welding, assembly, and final production
- Common fabrication defects, non-conformities, and causes of rework
- Technical procedures, specifications, inspection records, and quality documentation

PRACTICAL APPLICATION

Analyze fabrication non-conformities and develop root-cause, corrective, and preventive actions

DAY 04

Equipment Management, Maintenance & Workshop Safety

- Managing workshop machinery, equipment, tools, and production capacity
- Preventive and predictive maintenance for fabrication equipment
- Equipment availability, reliability, downtime, and maintenance planning

WORKSHOP

Workshop hazards, occupational safety, and risk control practices

PRACTICAL APPLICATION

Conduct a workshop readiness assessment covering equipment condition, maintenance requirements, operational risks, and safety improvement opportunities

DAY 05

Workshop Productivity, Performance Measurement & Continuous Improvement

WORKSHOP

Workshop performance indicators for productivity, quality, cost, equipment utilization, and schedule adherence

- Identifying bottlenecks, waste, rework, downtime, and operational inefficiencies
- Improving manpower, equipment, material, tooling, and workspace utilization
- Applying continuous improvement principles to fabrication and workshop operations

FINAL WORKSHOP

Develop an integrated fabrication workshop improvement plan covering productivity, quality, resource management, equipment reliability, safety, performance indicators, implementation priorities, and follow-up measures

Register or Request More Information

Course page: <https://quest-training.com/courses/fabrication-engineering-workshop-management>

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