



CERTIFICATION PROGRAMS

COURSE CATALOG

Version 2021



**NORTHWEST
SKILLS INSTITUTE**

nwskills.org

SKILLS COURSE NUMBERING

The skills course numbering system has four levels

1000

1000 level skills courses are where students begin their journey. These include the foundational knowledge and skills required for success in a technical career.

2000

2000 level skills courses are intermediate-level courses that include tools, equipment, processes and knowledge required to master technical tasks.

3000

3000 level skills courses are advanced-level skill and knowledge-based courses.

4000

4000 level skills courses are project and application-based courses.

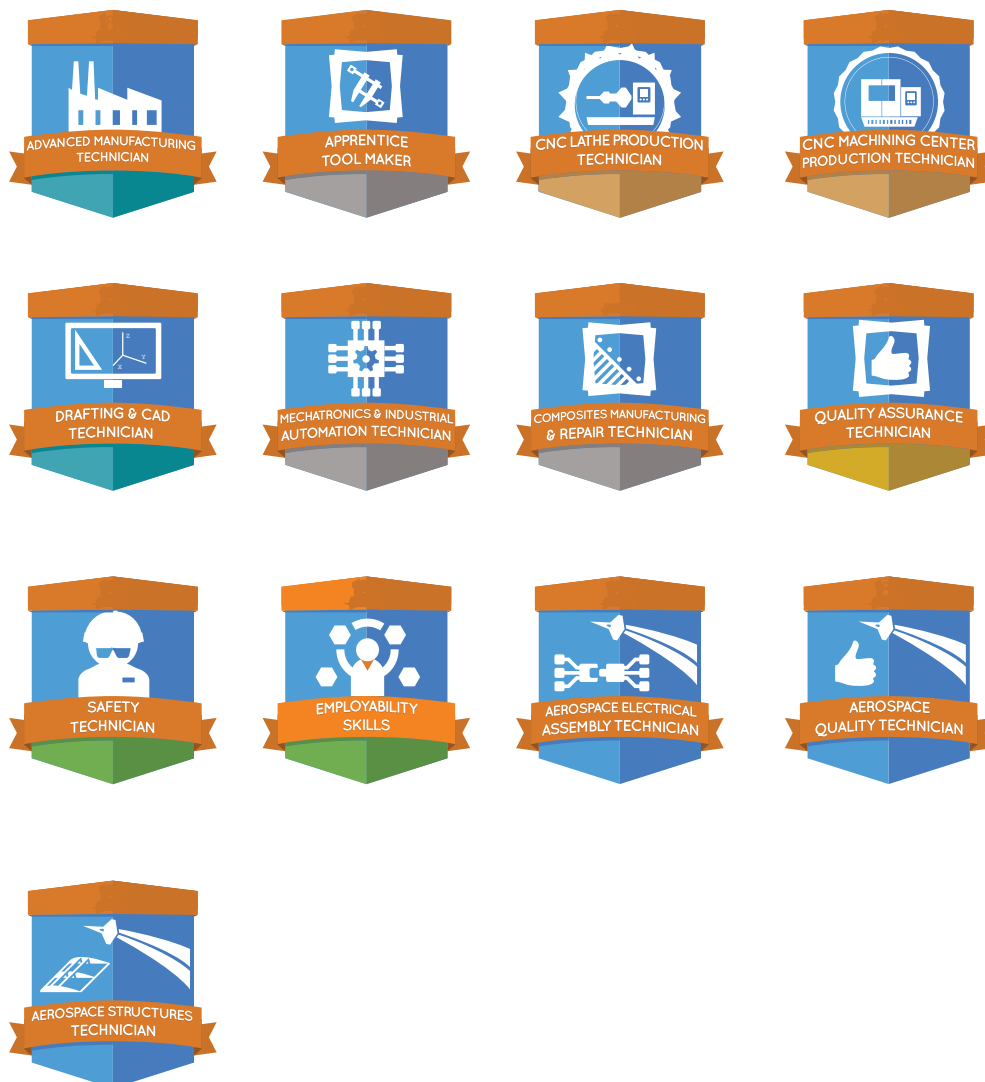
These skills courses allow the student to apply the knowledge they have acquired in the 1000 – 3000 level skills areas.

Many of these skills courses include full project-based learning that can also be performed in a hands-on, instructor-led environment.

CERTIFICATION PROGRAMS

There are thirteen Certification Programs available and each can be completed in three months or less with 15 hours of study per week.

Those programs are used in pre-hire, academic, and workforce programs that benefit from alignment with nationally recognized certification standards.





ADVANCED MANUFACTURING PRODUCTION TECHNICIAN

ADVANCED MANUFACTURING PRODUCTION TECHNICIAN

LAUNCH A CAREER AS A MAKER

Advanced manufacturing technicians perform many important tasks such as product assembly, machine operation, and quality assurance. Advanced manufacturing technicians play a key role in the manufacture of many commercial products.

Employment of advanced manufacturing technicians is projected to grow 4 percent from 2012 to 2022. Qualified applicants, including those with technical training and certification, should have the best job opportunities in the manufacturing sector, particularly in growing, high-technology industries, such as aerospace and electro-medical devices.

Hiring Industries

- > Automotive
- > Aerospace
- > Civil infrastructure
- > Consumer products
- > Construction
- > Electrical equipment
- > Marine
- > Military
- > Materials processing
- > Medical devices

Program Summary

Skill Course: 93

Time to complete: 1.5 months

ADVANCED MANUFACTURING PRODUCTION TECHNICIAN

STU-1001	180 Skills Orientation Greatest Day Ever
STU-1002	Using a Learning Management How to Take a Course
STU-1003	How to Navigate the LMS
STU-1004	Learning Online Tips for Succeeding in Online Learning
CAR-2001	Manufacturing as a Career Manufacturing - A Future Worth Exploring
CAR-2002	Manufacturing - Components of Production
CAR-2003	Manufacturing - Credentials and Competencies
CAR-2004	Manufacturing - Career Planning and Resources
MFG-1001	Introduction to Manufacturing What is Advanced Manufacturing?
MFG-1002	Manufacturing History and Technology
MFG-1003	From Ideas to Products
MFG-1004	From Design to Manufacturing
MFG-1005	Safety, Quality and the Environment in Manufacturing
MFG-1006	Measuring Success in Manufacturing
MFG-1007	Careers in Manufacturing
MFG-1008	
LOG-1001	Introduction to Logistics What is Logistics?
LOG-1002	Logistics Technology
LOG-1003	Inventory
LOG-1004	Distribution and Transportation

ADVANCED MANUFACTURING PRODUCTION TECHNICIAN

LOG-1005 Safety, Quality and the Environment in Logistics
LOG-1006 Winning in Logistics
LOG-1007 Careers in Logistics

Manufacturing & Logistics Game

MFG-1008 The Game of Manufacturing and Logistics

Basic Math

MTH-1001 Introduction to Basic Math
MTH-1002 Arithmetic Operations

Fractions and Decimals

MTH-1004 Introduction to Fractions
MTH-1005 Working with Fractions
MTH-1006 Decimal Numbers

Intermediate Math

MTH-1003 Numbers and the Number Line
MTH-1007 Positive and Negative Numbers
MTH-1008 Cartesian Coordinates
MTH-1009 The Metric System

Introduction to Safety

SAF-1001 Introduction to OSHA
SAF-1002 Making Work a Safer Place
SAF-1003 Help! What to Do in an Emergency

Personal Protective Equipment Safety

SAF-1004 Personal Protective Equipment
SAF-1005 Eye and Face Protection

ADVANCED MANUFACTURING PRODUCTION TECHNICIAN

SAF-1006	Head Protection
SAF-1007	Foot and Leg Protection
SAF-1008	Hand and Arm Protection
SAF-1009	Body Protection
SAF-1010	Hearing Protection
SAF-1011	Respiratory Protection

Hazardous Material Safety

SAF-1012	Hazardous Materials
SAF-1013	HazCom
SAF-1014	Hazardous Waste
SAF-1015	Hazard Material Storage

Workplace Safety

SAF-1016	Work Area Safety
SAF-1017	Permit-Related Safety
SAF-1018	Fall Prevention
SAF-1019	Ladder Safety

Electrical and Fire Safety

SAF-1020	Electrical Safety
SAF-1021	Lockout/Tagout

Engineering Processes

MFG-1009	The Engineering Process
MFG-1010	Information Sharing

Quality Systems

QUA-1001	Introduction to Quality
QUA-1002	ISO 9000

ADVANCED MANUFACTURING PRODUCTION TECHNICIAN

QUA-1003 Standards Organizations
QUA-1004 Quality Organizations
QUA-1005 Basic Quality Roles and Responsibilities

Introduction to Statistical Process Control

QUA-1011 Introduction to SPC
QUA-1012 Probability and Variation
QUA-1013 The Control Chart

Blueprint Reading Fundamentals

DWG-1001 Introduction to Blueprints
DWG-1002 Engineering Drawing Terminology
DWG-1003 Engineering Drawing Views
DWG-1004 Engineering Drawing Lines
DWG-1005 Dimensions and Tolerances

Precision Measurement I

MEA-2001 Introduction to Precision Instruments
MEA-2002 Rules
MEA-2003 Calipers
MEA-2004 Micrometers

Introduction to Lean Manufacturing

LEA-1002 The History of Lean Manufacturing

Workplace Organization

LEA-1003 Workplace Organization
LEA-1004 S1: Sort
LEA-1005 S2: Straighten
LEA-1006 S3: Shine

ADVANCED MANUFACTURING PRODUCTION TECHNICIAN

LEA-1007
LEA-1008

S4: Standardize
S5: Sustain

Introduction to Machining

CNC-1001	Introduction to Machining
CNC-1002	Machine Tools
CNC-1003	CNC Controllers
CNC-1004	Machining Personnel
CNC-1005	Facility Layout

Introduction to Industrial Automation

AUT-1001	Introduction to Automation
AUT-1002	Automated Process
AUT-1003	Automated System

Searching for a Job

CAR-1001	Kicking Off Your Job Search
CAR-1002	Finding Jobs to Apply For
CAR-1003	Networking

Resumes and Job Applications

CAR-1004	Completing an Employment Application
CAR-1005	Creating Your Resume
CAR-1006	Crafting a Cover Letter

Interviewing

CAR-1007	Understanding the Interview Process
CAR-1008	Making a Positive Impression
CAR-1009	Responding to Interview Questions



ADVANCED MANUFACTURING CERTIFICATION PROGRAMS

ADVANCED MANUFACTURING PRODUCTION TECHNICIAN

CAR-1010
CAR-1011

Addressing Special Interview Concerns
After the Interview

CAR-1012
CAR-1013

Keeping a Job
Surviving Your First Day on the Job
Turning a Job into a Career



AEROSPACE ELECTRICAL ASSEMBLY TECHNICIAN

AEROSPACE ELECTRICAL ASSEMBLY TECHNICIAN

ELECTRIFY THE WORLD'S AIRCRAFT

Today's aircraft are highly complex machines with hundreds of electronic components and miles of wiring. Aerospace electrical assembly technicians ensure the electronic systems on modern aircraft operate at peak performance.

They prepare wiring layouts, select and install a wide range of electrical components, perform scheduled maintenance, and complete inspections. Repairing, diagnosing and assembling the electronic components, they play a crucial role in ensuring worry-free flight.

Hiring Industries

- > Air Transport
- > Aircraft & Parts Manufacturing
- > Guided Missiles, Space
- > Vehicles, and Parts
- > Satellite Communications
- > Search, Detection
- > Navigation Guidance
- > Space Research and Technology

Program Summary

Skill Course: 161

Time to complete: 3.5 months

AEROSPACE ELECTRICAL ASSEMBLY TECHNICIAN

STU-1001	180 Skills Orientation Greatest Day Ever
STU-1002	Using a Learning Management System How to Take a Course
STU-1003	How to Navigate the LMS
STU-1004	Learning Online Tips for Succeeding in Online Learning
AER-1001	Aircraft Familiarization The History of Aviation
AER-1002	Primary Assemblies of an Aircraft
AER-1003	Principles of Flight
AER-1004	Airplane Control
AER-1005	Aircraft Configuration
AER-1006	Aircraft Materials
AER-1007	Aircraft Construction
AER-1008	Aircraft Corrosion
AER-1009	Aircraft Regulations
MTH-1001	Basic Math Introduction to Basic Math
MTH-1002	Arithmetic Operations
MTH-1004	Fractions and Decimals Introduction to Fractions
MTH-1005	Working with Fractions
MTH-1006	Decimal Numbers

AEROSPACE ELECTRICAL ASSEMBLY TECHNICIAN

MTH-1003
MTH-1007
MTH-1008
MTH-1009

Intermediate Math

Numbers and the Number Line
Positive and Negative Numbers
Cartesian Coordinates
The Metric System

SAF-1001
SAF-1002
SAF-1003

Introduction to Safety

Introduction to OSHA
Making Work a Safer Place
Help! What to Do in an Emergency

SAF-1004
SAF-1005
SAF-1006
SAF-1007
SAF-1008
SAF-1009
SAF-1010
SAF-1011

Personal Protective Equipment Safety

Personal Protective Equipment
Eye and Face Protection
Head Protection
Foot and Leg Protection
Hand and Arm Protection
Body Protection
Hearing Protection
Respiratory Protection

SAF-1012
SAF-1013
SAF-1014
SAF-1015

Hazardous Material Safety

Hazardous Materials
HazCom
Hazardous Waste
Hazard Material Storage

SAF-1016
SAF-1018

Workplace Safety

Work Area Safety
Fall Prevention

AEROSPACE ELECTRICAL ASSEMBLY TECHNICIAN

SAF-1020
SAF-1021

Electrical and Fire Safety

Electrical Safety
Lockout/Tagout

SAF-1027
SAF-1028

Tool and Machine Safety

Hand Tool Safety
Power Tool Safety

DWG-1006
DWG-1007
DWG-1008
DWG-1009
DWG-1010
DWG-1011

Blueprints and Picture Sheets for Aerospace

Aerospace Introduction to Blueprints
Blueprint Terminology
Blueprint Views
Blueprint Lines
Blueprint Dimensions and Tolerances
Blueprint Symbols

MEA-2001
MEA-2002
MEA-2003
MEA-2004

Precision Measurement I

Introduction to Precision Instruments
Rules
Calipers
Micrometers

MEA-2020
MEA-2021
MEA-2022
MEA-2023
MEA-2024
MEA-2025

Fastener Inspection Gauges

Grip Gauges
Countersink Gauges
Fastener Height Gauges
Rivet Inspection Gauges
Fastener Inspection Gauges
Gap Inspection Gauges

AEROSPACE ELECTRICAL ASSEMBLY TECHNICIAN

FAS-2001

Fasteners

Temporary Fasteners

FAS-2002

Rivets

FAS-2003

Bolts, Screws, and Washers

FAS-2004

Threaded Inserts

FAS-2005

Hi-Loks

FAS-2006

Lockbolts

FAS-2007

Nut Plates

FAS-2008

Blind Rivets

FAS-2009

Identifying Fasteners

FAS-2010

Fasteners and Fits

FAS-2011

Securing and Lockwiring Fasteners

FAS-2012

Torque Tools

Hand Power Tools

POW-2001

Pistol Grip Drills

POW-2002

Drilling Techniques

POW-2003

Winslow Drills

POW-2004

Compression Riveters

POW-2005

Rivet Installation Tools

Stationary Power Tools

POW-2006

Introduction to Stationary Power Tools

POW-2007

Disc and Belt Sanders

POW-2008

Drill Press

POW-2009

Band Saw

POW-2010

Arbor Press

POW-2011

Bench Grinder

AEROSPACE ELECTRICAL ASSEMBLY TECHNICIAN

CUT-2001	Drill Bits Drill Bits
CUT-2002	Drill Guides and Drill Stops Drill Guides and Drill Stops
CUT-2003	Countersinking Tools Countersinking Tools
AER-4001	Basic Drilling and Riveting Marking Fastener Locations for Drilling Project
AER-4002	Setting Up the Drill Motor
AER-4003	Drilling Pilot Holes and Enlarging Holes
AER-4004	Deburring
AER-4005	Driving Protruding Head Rivets
AER-4014	Countersinking and Riveting Project Setting the Countersink Tool (project)
AER-2001	Aerospace Sealing and Safety Introduction to Sealing
AER-2002	Chemical Safety
AER-2003	Preparing the Surface
AER-2004	Selecting the Right Sealant
AER-2005	Applying the Sealant
AER-4043	Sealant Applicant Processes Mechanical Project Sealing Basics
AER-4044	Fay and Prepack Sealing
AER-4045	Fillet and Injection Sealing

AEROSPACE ELECTRICAL ASSEMBLY TECHNICIAN

AER-4046	Cap Sealing
AER-2006	Aerospace Electrical Bond and Ground Electricity and the Airplane
ELE-2019	Electrical Measurement Conversion Electrical Measurement and Unit Conversion
ELE-2020	Electrical Resistance Test Equipment Resistance Test Equipment
ELE-2021	The Fluke® Multimeter
ELE-2022	The Biddle® Ohmmeter
ELE-2023	The Avtron® Ohmmeter
ELE-2024	The Hewlett Packard® Milliohmmeter
ELE-2025	The BCD M1® Ohmmeter
AER-4047	Aerospace Electrical Bond and Ground Project Electrical Bond and Ground Introduction
AER-4048	Pre-installed Ground Studs
AER-4049	Electrical Fay Surface Bonds
AER-4050	Direct Ground Stud
AER-4051	Fillet Sealing a Ground Stud
AER-4052	Fay Sealing a Direct Ground Stud
DWG-2004	Aerospace Wire Installation Drawings Engineering Drawing Review
DWG-2005	Wire Bundle Installation Paperwork
DWG-2006	Electrical Production Illustrations

AEROSPACE ELECTRICAL ASSEMBLY TECHNICIAN

Aerospace Wire Bundle Basics	
AER-2007	Wiring in Airplanes
AER-2008	Wire and Cable Basics
AER-2009	Wire, Cable, and Wire Bundle Markings
AER-2010	Circular Connectors and Contacts
AER-2011	Installing a Connector
AER-2012	MTC Connectors
AER-2013	Tying Wire Bundles

Electrical Hand Tools	
ELE-2018	Hand Tools for Electrical Wiring

Electrical Connectors	
ELE-2006	Electrical Connectors and Fasteners

Crimping Terminals and Splices	
ELE-4001	Terminals and Splices
ELE-4002	Crimping
ELE-4003	Crimping a Terminal
ELE-4004	Crimping a Pre-insulated Splice

Assembly of Coaxial Connectors	
ELE-4005	Coaxial Cable
ELE-4006	Coaxial Connectors
ELE-4007	Coaxial Connector Tools
ELE-4008	Coaxial Connector Assembly

Fiber Optics	
ELE-2007	Fiber Optics and Light
ELE-2008	Manufacturing Optical Fiber

AEROSPACE ELECTRICAL ASSEMBLY TECHNICIAN

ELE-2009 Fiber Optic Cable
ELE-2010 Handling Fiber Optic Cable
ELE-2011 Quality and Safety

Aerospace Wire Bundle Installation Project

AER-4053 Clearance and Separation
AER-4054 Minimum Bend Radius
AER-4055 Clamping Wire Bundles - Part One
AER-4056 Tying Wire Bundles for the Wire Bundle Installation Project
AER-4057 Project Installation Plan
AER-4058 Project and Drawing Review
AER-4059 Pre-routing Wire Bundles
AER-4060 Clamping Wire Bundles - Part Two
AER-4061 Torque and Inspection

Searching for a Job

CAR-1001 Kicking Off Your Job Search
CAR-1002 Finding Jobs to Apply For
CAR-1003 Networking

Resumes and Job Applications

CAR-1004 Completing an Employment Application
CAR-1005 Creating Your Resume
CAR-1006 Crafting a Cover Letter

Interviewing

CAR-1007 Understanding the Interview Process
CAR-1008 Making a Positive Impression
CAR-1009 Responding to Interview Questions
CAR-1010 Addressing Special Interview Concerns



AEROSPACE MANUFACTURING CERTIFICATION PROGRAMS

AEROSPACE ELECTRICAL ASSEMBLY TECHNICIAN

CAR-1011

After the Interview

Keeping a Job

CAR-1012

Surviving Your First Day on the Job

CAR-1013

Turning a Job into a Career



AEROSPACE QUALITY TECHNICIAN

AEROSPACE QUALITY TECHNICIAN

MAKE THE SKIES SAFER

This program was developed with input from industry partners to ensure that aerospace quality assurance technicians have a deep knowledge and mastery of aircraft manufacturing processes.

Aerospace quality technicians reduce development costs, decrease maintenance expenses, and increase customer safety and satisfaction.

Hiring Industries

- > Air Transport
- > Aircraft & Parts Manufacturing
- > Guided Missiles, Space
- > Satellite Communications
- > Search, Detection
- > Navigation Guidance
- > Space Research and Technology

Program Summary

Skill Course: 186

Time to complete: 3.5 months

AEROSPACE QUALITY TECHNICIAN

STU-1001	180 Skills Orientation Greatest Day Ever
STU-1002	Using a Learning Management System How to Take a Course
STU-1003	How to Navigate the LMS
STU-1004	Learning Online Tips for Succeeding in Online Learning
AER-1001	Aircraft Familiarization The History of Aviation
AER-1002	Primary Assemblies of an Aircraft
AER-1003	Principles of Flight
AER-1004	Airplane Control
AER-1005	Aircraft Configuration
AER-1006	Aircraft Materials
AER-1007	Aircraft Construction
AER-1008	Aircraft Corrosion
AER-1009	Aircraft Regulations
MTH-1001	Basic Math Introduction to Basic Math
MTH-1002	Arithmetic Operations
MTH-1004	Fractions and Decimals Introduction to Fractions
MTH-1005	Working with Fractions
MTH-1006	Decimal Numbers

AEROSPACE QUALITY TECHNICIAN

MTH-1003
MTH-1007
MTH-1008
MTH-1009

Intermediate Math

Numbers and the Number Line
Positive and Negative Numbers
Cartesian Coordinates
The Metric System

SAF-1001
SAF-1002
SAF-1003

Introduction to Safety

Introduction to OSHA
Making Work a Safer Place
Help! What to Do in an Emergency

SAF-1004
SAF-1005
SAF-1006
SAF-1007
SAF-1008
SAF-1009
SAF-1010
SAF-1011

Personal Protective Equipment Safety

Personal Protective Equipment
Eye and Face Protection
Head Protection
Foot and Leg Protection
Hand and Arm Protection
Body Protection
Hearing Protection
Respiratory Protection

SAF-1012
SAF-1013
SAF-1014
SAF-1015

Hazardous Material Safety

Hazardous Materials
HazCom
Hazardous Waste
Hazard Material Storage

SAF-1016
SAF-1018

Workplace Safety

Work Area Safety
Fall Prevention

AEROSPACE QUALITY TECHNICIAN

SAF-1020
SAF-1021

Electrical and Fire Safety

Electrical Safety
Lockout/Tagout

SAF-1027
SAF-1028

Tool and Machine Safety

Hand Tool Safety
Power Tool Safety

QUA-1001
QUA-1002
QUA-1003
QUA-1004
QUA-1005

Quality Systems

Introduction to Quality
ISO 9000
Standards Organizations
Quality Organizations
Basic Quality Roles and Responsibilities

QUA-1011
QUA-1012
QUA-1013

Introduction to Statistical Process Control

Introduction to SPC
Probability and Variation
The Control Chart

QUA-2001
QUA-2002
QUA-2003
QUA-2004

Advanced Statistical Process Control

Control Chart Analysis
Process Capability
Problem Solving Tools
Problem Solving

DWG-1006
DWG-1007
DWG-1008

Blueprints and Picture Sheets for Aerospace

Aerospace Introduction to Blueprints
Blueprint Terminology
Blueprint Views

AEROSPACE QUALITY TECHNICIAN

DWG-1009
DWG-1010
DWG-1011

Blueprint Lines
Blueprint Dimensions and Tolerances
Blueprint Symbols

DWG-3001
DWG-3002
DWG-3003
DWG-3004
DWG-3005

Geometric Dimensioning and Tolerancing

Introduction to GD&T
GD&T Terms and Symbols
Rules of GD&T
Geometric Tolerances
Datums

MEA-2001
MEA-2002
MEA-2003
MEA-2004

Precision Measurement I

Introduction to Precision Instruments
Rules
Calipers
Micrometers

MEA-2005
MEA-2006
MEA-2007
MEA-2008
MEA-2009
MEA-2010

Precision Measurement II

Small Hole Gauges
Dial Indicators
Bore Gauges
Height Gauges
Go/NoGo Gauges
Test Indicators

MEA-2020
MEA-2021
MEA-2022
MEA-2023

Fastener Inspection Gauges

Grip Gauges
Countersink Gauges
Fastener Height Gauges
Rivet Inspection Gauges

AEROSPACE QUALITY TECHNICIAN

MEA-2024
MEA-2025

Fastener Inspection Gauges
Gap Inspection Gauges

Aircraft Systems

AER-3001	Flight Control Systems
AER-3002	Mechanical Systems
AER-3003	Landing Gear Systems
AER-3004	Aerospace Hydraulic Systems
AER-3005	Aerospace Pneumatic Systems
AER-3006	Electrical Systems
AER-3007	Propulsion Systems
AER-3008	Fuel Systems
AER-3009	Avionics Systems
AER-3010	Anti-Icing and De-Icing Systems
AER-3011	Environmental Systems
AER-3012	Window and Door Systems
AER-3013	Commercial Aircraft Structures

Hand Power Tools

POW-2001	Pistol Grip Drills
POW-2002	Drilling Techniques
POW-2003	Winslow Drills
POW-2004	Compression Riveters
POW-2005	Rivet Installation Tools

Drill Bits

CUT-2001	Drill Bits
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Drill Guides and Drill Stops

CUT-2002	Drill Guides and Drill Stops
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AEROSPACE QUALITY TECHNICIAN

CUT-2003

Countersinking Tools

Countersinking Tools

AER-4001

Basic Drilling and Riveting

Marking Fastener Locations for Drilling Project

AER-4002

Setting Up the Drill Motor

AER-4003

Drilling Pilot Holes and Enlarging Holes

AER-4004

Deburring

AER-4005

Driving Protruding Head Rivets

AER-4006

Installing Advanced Fasteners Project

Assembly Preparation for Advanced Fasteners Project

AER-4007

Installing Nut Plates

AER-4008

Compression Riveting

AER-4009

Installing Bolts

AER-4010

Securing Bolts with Lockwire

AER-4011

Countersinking and Riveting Project

Marking Fastener Locations for Countersinking and Flush Riveting Project

AER-4012

Setting Up the Assembly and Drill

AER-4013

Drilling, Enlarging, and Deburring Holes

AER-4014

Setting the Countersink Tool (project)

AER-4015

Countersinking (project)

AER-4016

Flush Riveting

AER-4017

90 Degree Drilling Project

Assembly Preparation for 90 Degree Drilling Project

AER-4018

Installing 5/16 Inch Hi-Loks

AER-4019

Installing 3/16 Inch Hi-Loks

AEROSPACE QUALITY TECHNICIAN

AER-4020 Installing Protruding Head Rivets
AER-4021 Removing Rivets in the 90 Degree Drilling Project
AER-4022 Removing 5/16 Inch Hi-Loks

AER-2006 **Aerospace Electrical Bond and Ground**
Electricity and the Airplane

ELE-2019 **Electrical Measurement Conversion**
Electrical Measurement and Unit Conversion

ELE-2020 **Electrical Resistance Test Equipment**
Resistance Test Equipment
ELE-2021 The Fluke® Multimeter
ELE-2022 The Biddle® Ohmmeter
ELE-2023 The Avtron® Ohmmeter
ELE-2024 The Hewlett Packard® Milliohmmeter
ELE-2025 The BCD M1® Ohmmeter

AER-4047 **Aerospace Electrical Bond and Ground Project**
AER-4048 Electrical Bond and Ground Introduction
AER-4049 Pre-installed Ground Studs
AER-4050 Electrical Fay Surface Bonds
AER-4051 Direct Ground Stud
AER-4052 Fillet Sealing a Ground Stud
Fay Sealing a Direct Ground Stud

AER-2001 **Aerospace Sealing and Safety**
AER-2002 Introduction to Sealing
AER-2003 Chemical Safety
Preparing the Surface

AEROSPACE QUALITY TECHNICIAN

AER-2004
AER-2005

Selecting the Right Sealant
Applying the Sealant

Aerospace Wire Installation Drawings

DWG-2004
DWG-2005
DWG-2006

Engineering Drawing Review
Wire Bundle Installation Paperwork
Electrical Production Illustrations

Aerospace Wire Bundle Basics

AER-2007
AER-2008
AER-2009
AER-2010
AER-2011
AER-2012
AER-2013

Wiring in Airplanes
Wire and Cable Basics
Wire, Cable, and Wire Bundle Markings
Circular Connectors and Contacts
Installing a Connector
MTC Connectors
Tying Wire Bundles

Technical Writing

COM-2004
COM-2005

Introduction to Technical Writing
Successful Documentation

Dealing With Conflict

COM-2001
COM-2002
COM-2003

Understanding Conflict
Communication Skills
Managing Conflict

Searching for a Job

CAR-1001
CAR-1002
CAR-1003

Kicking Off Your Job Search
Finding Jobs to Apply For
Networking

AEROSPACE QUALITY TECHNICIAN

CAR-1004

CAR-1005

CAR-1006

Resumes and Job Applications

Completing an Employment Application

Creating Your Resume

Crafting a Cover Letter

Interviewing

CAR-1007

Understanding the Interview Process

CAR-1008

Making a Positive Impression

CAR-1009

Responding to Interview Questions

CAR-1010

Addressing Special Interview Concerns

CAR-1011

After the Interview

Keeping a Job

CAR-1012

Surviving Your First Day on the Job

CAR-1013

Turning a Job into a Career



AEROSPACE STRUCTURES TECHNICIAN

AEROSPACE STRUCTURES TECHNICIAN

MAKE THE WORLD'S AIRCRAFT

This program was developed with input from industry partners to ensure that aerospace structures technicians have a deep knowledge and mastery of aircraft structures manufacturing processes.

Aerospace structures technicians assemble, fit, fasten, and install parts of airplanes, space vehicles, or missiles, such as tails, wings, fuselages, bulkheads, stabilizers, landing gear, rigging, control equipment, and heating and ventilating systems.

Hiring Industries

- > Air Transport
- > Aircraft & Parts Manufacturing
- > Guided Missiles, Space
- > Satellite Communications
- > Search, Detection
- > Navigation Guidance
- > Space Research and Technology

Program Summary

Skill Course: 171

Time to complete: 3.5 months

AEROSPACE STRUCTURES TECHNICIAN

STU-1001	180 Skills Orientation Greatest Day Ever
STU-1002	Using a Learning Management System How to Take a Course
STU-1003	How to Navigate the LMS
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AER-1005	Aircraft Configuration
AER-1006	Aircraft Materials
AER-1007	Aircraft Construction
AER-1008	Aircraft Corrosion
AER-1009	Aircraft Regulations
MTH-1001	Basic Math Introduction to Basic Math
MTH-1002	Arithmetic Operations
MTH-1004	Fractions and Decimals Introduction to Fractions
MTH-1005	Working with Fractions
MTH-1006	Decimal Numbers

AEROSPACE STRUCTURES TECHNICIAN

MTH-1003
MTH-1007
MTH-1008
MTH-1009

Intermediate Math

Numbers and the Number Line
Positive and Negative Numbers
Cartesian Coordinates
The Metric System

SAF-1001
SAF-1002
SAF-1003

Introduction to Safety

Introduction to OSHA
Making Work a Safer Place
Help! What to Do in an Emergency

SAF-1004
SAF-1005
SAF-1006
SAF-1007
SAF-1008
SAF-1009
SAF-1010
SAF-1011

Personal Protective Equipment Safety

Personal Protective Equipment
Eye and Face Protection
Head Protection
Foot and Leg Protection
Hand and Arm Protection
Body Protection
Hearing Protection
Respiratory Protection

SAF-1012
SAF-1013
SAF-1014
SAF-1015

Hazardous Material Safety

Hazardous Materials
HazCom
Hazardous Waste
Hazard Material Storage

SAF-1016
SAF-1018

Workplace Safety

Work Area Safety
Fall Prevention

AEROSPACE STRUCTURES TECHNICIAN

SAF-1020
SAF-1021

Electrical and Fire Safety

Electrical Safety
Lockout/Tagout

SAF-1027
SAF-1028

Tool and Machine Safety

Hand Tool Safety
Power Tool Safety

DWG-1006
DWG-1007
DWG-1008
DWG-1009
DWG-1010
DWG-1011

Blueprints and Picture Sheets for Aerospace

Aerospace Introduction to Blueprints
Blueprint Terminology
Blueprint Views
Blueprint Lines
Blueprint Dimensions and Tolerances
Blueprint Symbols

MEA-2001
MEA-2002
MEA-2003
MEA-2004

Precision Measurement I

Introduction to Precision Instruments
Rules
Calipers
Micrometers

MEA-2020
MEA-2021
MEA-2022
MEA-2023
MEA-2024
MEA-2025

Fastener Inspection Gauges

Grip Gauges
Countersink Gauges
Fastener Height Gauges
Rivet Inspection Gauges
Fastener Inspection Gauges
Gap Inspection Gauges

AEROSPACE STRUCTURES TECHNICIAN

FAS-2001

Fasteners

Temporary Fasteners

FAS-2002

Rivets

FAS-2003

Bolts, Screws, and Washers

FAS-2004

Threaded Inserts

FAS-2005

Hi-Loks

FAS-2006

Lockbolts

FAS-2007

Nut Plates

FAS-2008

Blind Rivets

FAS-2009

Identifying Fasteners

FAS-2010

Fasteners and Fits

FAS-2011

Securing and Lockwiring Fasteners

FAS-2012

Torque Tools

Hand Power Tools

POW-2001

Pistol Grip Drills

POW-2002

Drilling Techniques

POW-2003

Winslow Drills

POW-2004

Compression Riveters

POW-2005

Rivet Installation Tools

Hand Power Tools

POW-2001

Pistol Grip Drills

POW-2002

Drilling Techniques

POW-2003

Winslow Drills

POW-2004

Compression Riveters

POW-2005

Rivet Installation Tools

Stationary Power Tools

POW-2006

Introduction to Stationary Power Tools

AEROSPACE STRUCTURES TECHNICIAN

POW-2007 Disc and Belt Sanders
POW-2008 Drill Press
POW-2009 Band Saw
POW-2010 Arbor Press
POW-2011 Bench Grinder

Drill Bits

CUT-2001 Drill Bits

Drill Guides and Drill Stops

CUT-2002 Drill Guides and Drill Stops

Countersinking Tools

CUT-2003 Countersinking Tools

Basic Drilling and Riveting

AER-4001 Marking Fastener Locations for Drilling Project
AER-4002 Setting Up the Drill Motor
AER-4003 Drilling Pilot Holes and Enlarging Holes
AER-4004 Deburring
AER-4005 Driving Protruding Head Rivets

Installing Advanced Fasteners Project

AER-4006 Assembly Preparation for Advanced Fasteners Project
AER-4007 Installing Nut Plates
AER-4008 Compression Riveting
AER-4009 Installing Bolts
AER-4010 Securing Bolts with Lockwire

AEROSPACE STRUCTURES TECHNICIAN

AER-4011	Countersinking and Riveting Project Marking Fastener Locations for Countersinking and Flush Riveting Project
AER-4012	Setting Up the Assembly and Drill
AER-4013	Drilling, Enlarging, and Deburring Holes
AER-4014	Setting the Countersink Tool (project)
AER-4015	Countersinking (project)
AER-4016	Flush Riveting
90 Degree Drilling Project	
AER-4017	Assembly Preparation for 90 Degree Drilling Project
AER-4018	Installing 5/16 Inch Hi-Loks
AER-4019	Installing 3/16 Inch Hi-Loks
AER-4020	Installing Protruding Head Rivets
AER-4021	Removing Rivets in the 90 Degree Drilling Project
AER-4022	Removing 5/16 Inch Hi-Loks
Drilling Titanium Project	
AER-4023	Drilling Titanium
AER-4024	Marking Hole Locations for Drilling Titanium
AER-4025	Drilling Pilot Holes in Titanium
AER-4026	Drilling and Enlarging Holes in Row JD2
AER-4027	Enlarging Row JD7
AER-4028	Enlarging Rows JD4, JD5, and JD6
AER-4029	Enlarging Rows JD1 and JD3
AER-4030	Enlarging Row JD8
AER-4031	Chamfering
AER-4032	Edge Breaking and Deburring

AEROSPACE STRUCTURES TECHNICIAN

CMP-4004	Drilling Composite Material
CMP-4005	Marking Hole Locations
CMP-4006	Drilling Pilot Holes in Titanium
CMP-4007	Drilling Row JD3
CMP-4008	Drilling Row JD7
CMP-4009	Enlarging Holes in Rows JD1 and JD5
CMP-4010	Enlarging Holes in Rows JD2 and JD6
CMP-4011	Enlarging Holes in Row JD4

Drilling Composites Project

AER-4033	Tools for Wing Structure Project
AER-4034	Preparing the Assembly for the Wing Structure Project
AER-4035	Countersinking and Fillet Relief
AER-4036	Installing Fasteners

Wing Structure Project

AER-4037	Preparing the Assembly for the Fuselage Skin Assembly
AER-4038	Drilling the Skin Panels
AER-4039	Preparing the Doubler
AER-4040	Countersinking
AER-4041	Assembly Finish and Fastener Installation
AER-4042	Removing Rivets in the Fuselage Skin Assembly

Fuselage Skin Assembly Project

AER-2001	Introduction to Sealing
AER-2002	Chemical Safety
AER-2003	Preparing the Surface
AER-2004	Selecting the Right Sealant
AER-2005	Applying the Sealant

Aerospace Sealing and Safety

AEROSPACE STRUCTURES TECHNICIAN

AER-4043	Sealant Applicant Processes Mechanical Project
AER-4044	Sealing Basics
AER-4045	Fay and Prepack Sealing
AER-4046	Fillet and Injection Sealing
	Cap Sealing
AER-2006	Aerospace Electrical Bond and Ground
	Electricity and the Airplane
ELE-2019	Electrical Measurement Conversion
	Electrical Measurement and Unit Conversion
ELE-2020	Electrical Resistance Test Equipment
ELE-2021	Resistance Test Equipment
ELE-2022	The Fluke® Multimeter
ELE-2023	The Biddle® Ohmmeter
ELE-2024	The Avtron® Ohmmeter
ELE-2025	The Hewlett Packard® Milliohmmeter
	The BCD M1® Ohmmeter
AER-4047	Aerospace Electrical Bond and Ground Project
AER-4048	Electrical Bond and Ground Introduction
AER-4049	Pre-installed Ground Studs
AER-4050	Electrical Fay Surface Bonds
AER-4051	Direct Ground Stud
AER-4052	Fillet Sealing a Ground Stud
	Fay Sealing a Direct Ground Stud
CAR-1001	Searching for a Job
	Kicking Off Your Job Search

AEROSPACE STRUCTURES TECHNICIAN

CAR-1002
CAR-1003

Finding Jobs to Apply For
Networking

CAR-1004
CAR-1005
CAR-1006

Resumes and Job Applications

Completing an Employment Application

Creating Your Resume

Crafting a Cover Letter

CAR-1007
CAR-1008
CAR-1009
CAR-1010
CAR-1011

Interviewing

Understanding the Interview Process

Making a Positive Impression

Responding to Interview Questions

Addressing Special Interview Concerns

After the Interview

CAR-1012
CAR-1013

Keeping a Job

Surviving Your First Day on the Job

Turning a Job into a Career



APPRENTICE TOOL MAKER

APPRENTICE TOOL MAKER

MAKE THE TOOLS USED BY MAKERS

This program was developed with input from industry partners to ensure that aerospace tool makers attain mastery in the art of creating aerospace tooling.

Apprentice tool makers analyze specifications, lay out metal stock, set up and operate machine tools, and fit and assemble parts to make and repair dies, cutting tools, jigs, fixtures, and gauges. Students considering this program should work with an Employer Partner to secure an apprenticeship prior to enrolling.

Hiring Industries

- > Automotive
- > Air transport
- > Aircraft parts manufacturing
- > Guided missiles, space vehicles, and parts
- > Satellite communications
- > Search, detection, and navigation guidance
- > Space research and technology

Program Summary

Skill Course: 150

Time to complete: 2.5 months

APPRENTICE TOOL MAKER

STU-1001	180 Skills Orientation Greatest Day Ever
STU-1002	Using a Learning Management System How to Take a Course
STU-1003	How to Navigate the LMS
STU-1004	Learning Online Tips for Succeeding in Online Learning
MTH-1001	Basic Math Introduction to Basic Math
MTH-1002	Arithmetic Operations
MTH-1004	Fractions and Decimals Introduction to Fractions
MTH-1005	Working with Fractions
MTH-1006	Decimal Numbers
MTH-1003	Intermediate Math Numbers and the Number Line
MTH-1007	Positive and Negative Numbers
MTH-1008	Cartesian Coordinates
MTH-1009	The Metric System
GEO-1001	Geometry Introduction to Geometry
GEO-1002	Basic Building Blocks of Geometry
GEO-1003	Angles
GEO-1004	Lines

APPRENTICE TOOL MAKER

GEO-1005
GEO-1006

Polygons
Triangles

Intermediate Geometry

GEO-1007
GEO-1008
GEO-1009
GEO-1010
GEO-1011

Quadrilaterals
Circles
Three-dimensional Shapes
Coordinate Geometry
Transformation Geometry

Introduction to Safety

SAF-1001
SAF-1002
SAF-1003

Introduction to OSHA
Making Work a Safer Place
Help! What to Do in an Emergency

Personal Protective Equipment Safety

SAF-1004
SAF-1005
SAF-1006
SAF-1007
SAF-1008
SAF-1009
SAF-1010
SAF-1011

Personal Protective Equipment
Eye and Face Protection
Head Protection
Foot and Leg Protection
Hand and Arm Protection
Body Protection
Hearing Protection
Respiratory Protection

Hazardous Material Safety

SAF-1012
SAF-1013
SAF-1014
SAF-1015

Hazardous Materials
HazCom
Hazardous Waste
Hazard Material Storage

APPRENTICE TOOL MAKER

SAF-1016
SAF-1017
SAF-1018
SAF-1019

Workplace Safety

Work Area Safety
Permit-Related Safety
Fall Prevention
Ladder Safety

SAF-1020
SAF-1021
SAF-1022
SAF-1023

Electrical and Fire Safety

Electrical Safety
Lockout/Tagout
Fire Safety
Fire Extinguishers

SAF-1024
SAF-1025
SAF-1026

Material Handling Safety

Material Handling Basics
Powered Industrial Trucks
Crane and Rigging Safety

SAF-1027
SAF-1028
SAF-1029
SAF-1030
SAF-1031

Tool and Machine Safety

Hand Tool Safety
Power Tool Safety
Sheet Metal and Compressed Gas Safety
Machine Safety
Safety Devices

DWG-1001
DWG-1002
DWG-1003
DWG-1004
DWG-1005

Blueprint Reading Fundamentals

Introduction to Blueprints
Engineering Drawing Terminology
Engineering Drawing Views
Engineering Drawing Lines
Dimensions and Tolerances

APPRENTICE TOOL MAKER

DWG-2001
DWG-2002
DWG-2003

Advanced Blueprint Reading

Geometric Dimensions and Tolerances
Assemblies and Fits
Threads and Fasteners

DWG-3001
DWG-3002
DWG-3003
DWG-3004
DWG-3005
DWG-3006
DWG-3007
DWG-3008
DWG-3009
DWG-3010

Geometric Dimensioning and Tolerancing

Introduction to GD&T
GD&T Terms and Symbols
Rules of GD&T
Geometric Tolerances
Datums
Form Tolerances
Profile Tolerances
Orientation Tolerances
Runout Tolerances
Location Tolerances

MEA-2001
MEA-2002
MEA-2003
MEA-2004

Precision Measurement I

Introduction to Precision Instruments
Rules
Calipers
Micrometers

MEA-2005
MEA-2006
MEA-2007
MEA-2008
MEA-2009
MEA-2010

Precision Measurement II

Small Hole Gauges
Dial Indicators
Bore Gauges
Height Gauges
Go/NoGo Gauges
Test Indicators

APPRENTICE TOOL MAKER

MEA-2011
MEA-2012
MEA-2013
MEA-2014
MEA-2015

Attribute Gauges

Go/NoGo Thread Gauges
Attribute Gauges
Thickness and Radius Gauges
Squares and Protractors
Surface Roughness Comparators

MEA-2016
MEA-2017
MEA-2018
MEA-2019

Precision Measurement III

Adjustable Parallels
Surface Plates
Optical Comparators
Optical Center Finders

FAS-2003
FAS-2004

Fasteners

Bolts, Screws, and Washers
Threaded Inserts

POW-2001
POW-2002
POW-2003
POW-2004
POW-2005

Hand Power Tools

Pistol Grip Drills
Drilling Techniques
Winslow Drills
Compression Riveters
Rivet Installation Tools

POW-2006
POW-2007
POW-2008
POW-2009
POW-2010

Stationary Power Tools

Introduction to Stationary Power Tools
Disc and Belt Sanders
Drill Press
Band Saw
Arbor Press

APPRENTICE TOOL MAKER

POW-2011
POW-2012
POW-2013

Bench Grinder
Table Saw
Operating a Table Saw

Hand Tools

HAN-2001
HAN-2002
HAN-2003
HAN-2004

Files, Hand Reamers, and Lapping Tools
Hammers, Punches, and Chisels
Pliers and Ratchets
Scribes, Optical Center Finders, and Drill Blocks

Drill Bits

CUT-2001

Drill Bits

Drill Guides and Drill Stops

CUT-2002

Drill Guides and Drill Stops

Countersinking Tools

CUT-2003

Countersinking Tools

Threads, Taps and Dies

CUT-2004
CUT-2005
CUT-2006
CUT-2007

Threads
Taps
Hand Tapping
Threading Dies

Basic Drilling and Riveting

AER-4001
AER-4002
AER-4003
AER-4004

Marking Fastener Locations for Drilling Project
Setting Up the Drill Motor
Drilling Pilot Holes and Enlarging Holes
Deburring

APPRENTICE TOOL MAKER

AER-4014

Countersinking and Riveting Project

Setting the Countersink Tool (project)

TOL-3001

Tooling Capstone Project

Need for Tools

TOL-3002

The Process

TOL-3003

Permanent Assemblies

TOL-3004

Critical Features

TOL-3005

Final Details

COM-1001

Communicating with Others

Introduction to Communication

COM-1002

Effective Communication

COM-1003

Verbal Communication

COM-1004

Written Communication

COM-1005

Nonverbal Communication

COM-1006

Listening Skills

COM-1007

Workplace Communication

COM-2004

Technical Writing

Introduction to Technical Writing

COM-2005

Successful Documentation

CAR-1001

Searching for a Job

Kicking Off Your Job Search

CAR-1002

Finding Jobs to Apply For

CAR-1003

Networking

CAR-1004

Resumes and Job Applications

Completing an Employment Application

APPRENTICE TOOL MAKER

CAR-1005

Creating Your Resume

CAR-1006

Crafting a Cover Letter

Interviewing

CAR-1007

Understanding the Interview Process

CAR-1008

Making a Positive Impression

CAR-1009

Responding to Interview Questions

CAR-1010

Addressing Special Interview Concerns

CAR-1011

After the Interview

Keeping a Job

CAR-1012

Surviving Your First Day on the Job

CAR-1013

Turning a Job into a Career



CNC LATHE PRODUCTION TECHNICIAN

CNC LATHE PRODUCTION TECHNICIAN

MAKE THE WORLD TURN

Computer numerical control (CNC) lathe production technicians transform raw materials into finished products used in commercial, automotive, medical, and aerospace products. CNC lathe production technicians produce parts that range from simple bolts of steel to titanium bone screws for orthopedic implants.

CNC lathe production technicians work from blueprints, or computer-aided design (CAD), and computer-aided manufacturing (CAM) files. They set up and operate CNC machine tools, monitor the feed rate and speed of machines, and measure, examine, and test completed products for defects.

Hiring Industries

- > Automotive
- > Aerospace
- > Consumer products
- > Electrical equipment
- > Marine
- > Military
- > Medical devices

Program Summary

Skill Course: 122

Time to complete: 2.5 month

CNC LATHE PRODUCTION TECHNICIAN

STU-1001

180 Skills Orientation

Greatest Day Ever

STU-1002

Using a Learning Management System

STU-1003

How to Take a Course

How to Navigate the LMS

STU-1004

Learning Online

Tips for Succeeding in Online Learning

CNC-1001

Introduction to Machining

Introduction to Machining

CNC-1002

Machine Tools

CNC-1003

CNC Controllers

CNC-1004

Machining Personnel

CNC-1005

Facility Layout

MTH-1001

Basic Math

Introduction to Basic Math

MTH-1002

Arithmetic Operations

MTH-1004

Fractions and Decimals

Introduction to Fractions

MTH-1005

Working with Fractions

MTH-1006

Decimal Numbers

MTH-1003

Intermediate Math

Numbers and the Number Line

MTH-1007

Positive and Negative Numbers

MTH-1008

Cartesian Coordinates

MTH-1009

The Metric System

CNC LATHE PRODUCTION TECHNICIAN

Geometry

GEO-1001	Introduction to Geometry
GEO-1002	Basic Building Blocks of Geometry
GEO-1003	Angles
GEO-1004	Lines
GEO-1005	Polygons
GEO-1006	Triangles

Intermediate Geometry

GEO-1007	Quadrilaterals
GEO-1008	Circles
GEO-1009	Three-dimensional Shapes
GEO-1010	Coordinate Geometry
GEO-1011	Transformation Geometry

Introduction to Safety

SAF-1001	Introduction to OSHA
SAF-1002	Making Work a Safer Place
SAF-1003	Help! What to Do in an Emergency

Personal Protective Equipment Safety

SAF-1004	Personal Protective Equipment
SAF-1005	Eye and Face Protection
SAF-1006	Head Protection
SAF-1007	Foot and Leg Protection
SAF-1008	Hand and Arm Protection
SAF-1009	Body Protection
SAF-1010	Hearing Protection
SAF-1011	Respiratory Protection

Hazardous Material Safety

SAF-1012	Hazardous Materials
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CNC LATHE PRODUCTION TECHNICIAN

SAF-1013 HazCom
SAF-1014 Hazardous Waste
SAF-1015 Hazard Material Storage

Workplace Safety

SAF-1016 Work Area Safety
SAF-1018 Fall Prevention

Electrical and Fire Safety

SAF-1020 Electrical Safety
SAF-1021 Lockout/Tagout

Tool and Machine Safety

SAF-1027 Hand Tool Safety
SAF-1028 Power Tool Safety
SAF-1030 Machine Safety

Blueprint Reading Fundamentals

DWG-1001 Introduction to Blueprints
DWG-1002 Engineering Drawing Terminology
DWG-1003 Engineering Drawing Views
DWG-1004 Engineering Drawing Lines
DWG-1005 Dimensions and Tolerances

Advanced Blueprint Reading

DWG-2001 Geometric Dimensions and Tolerances
DWG-2002 Assemblies and Fits
DWG-2003 Threads and Fasteners

Precision Measurement I

MEA-2001 Introduction to Precision Instruments
MEA-2002 Rules

CNC LATHE PRODUCTION TECHNICIAN

MEA-2003
MEA-2004

Calipers
Micrometers

Precision Measurement II

MEA-2005
MEA-2006
MEA-2007
MEA-2008
MEA-2009
MEA-2010

Small Hole Gauges
Dial Indicators
Bore Gauges
Height Gauges
Go/NoGo Gauges
Test Indicators

Attribute Gauges

MEA-2011
MEA-2012
MEA-2013
MEA-2014
MEA-2015

Go/NoGo Thread Gauges
Attribute Gauges
Thickness and Radius Gauges
Squares and Protractors
Surface Roughness Comparators

Precision Measurement III

MEA-2016
MEA-2017
MEA-2018

Adjustable Parallels
Surface Plates
Optical Comparators

Metals and Materials

MAT-2001
MAT-2002
MAT-2003
MAT-2004

Introduction to Metals
Ferrous Metals
Nonferrous Metals
Heat Treatment of Metals

CNC Horizontal Lathe

CNC-2001
CNC-2002

Components of a CNC Lathe
Movements of a CNC Lathe

CNC LATHE PRODUCTION TECHNICIAN

CNC-2003 Workholding Devices and Tooling for a CNC Lathe
CNC-2004 The CNC Controller for a CNC Lathe
CNC-2005 Auxiliary Systems for a CNC Lathe

CNC Horizontal Lathe Applications

CNC-4001 Maintenance Tasks for a CNC Lathe
CNC-4002 Power on the CNC Lathe
CNC-4003 Move the Axes by Rotating the Jog Handle
CNC-4004 on a CNC Lathe
CNC-4005 Home the Axes on a CNC Lathe
CNC-4006 Select a Part Program from Memory on a CNC Lathe
CNC-4007 Start the Part Program Safely on a CNC Lathe
CNC-4008 Interrupt Automatic Operation on a CNC Lathe
CNC-4009 Adjust a Tool Wear Offset on a CNC Lathe
Power Off the CNC Lathe

Lubricants and Cutting Fluids

CUT-2008 Cutting Fluids

Cutting Tools for Metalworking

CUT-2009 Cutting Tool Materials
CUT-2010 Indexable Tool Holders
CUT-2011 Inserts
CUT-2012 Solid Cutting Tools

Threads, Taps and Dies

CUT-2004 Threads
CUT-2005 Taps
CUT-2006 Hand Tapping

CNC Lathe Programs

CNC-4010 CNC Programming Procedure for a CNC Lathe

CNC LATHE PRODUCTION TECHNICIAN

CNC-4011	CNC Program Structure for a CNC Lathe
CNC-4012	CNC Addresses for a CNC Lathe
CNC-4013	CNC Lathe Commands
CNC-4014	Organizing a CNC Program for a CNC Lathe

CNC Machine Lubricants

CNC-2011	CNC Machine Lubricants
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Searching for a Job

CAR-1001	Kicking Off Your Job Search
CAR-1002	Finding Jobs to Apply For
CAR-1003	Networking

Resumes and Job Applications

CAR-1004	Completing an Employment Application
CAR-1005	Creating Your Resume
CAR-1006	Crafting a Cover Letter

Interviewing

CAR-1007	Understanding the Interview Process
CAR-1008	Making a Positive Impression
CAR-1009	Responding to Interview Questions
CAR-1010	Addressing Special Interview Concerns
CAR-1011	After the Interview

Keeping a Job

CAR-1012	Surviving Your First Day on the Job
CAR-1013	Turning a Job into a Career



CNC MACHINING CENTER PRODUCTION TECHNICIAN

CNC MACHINING CENTER PRODUCTION TECHNICIAN

MACHINE THE WORLD

Computer numerical control (CNC) machining center production technicians transform raw materials into finished parts used in commercial, automotive, medical, and aerospace products. CNC machining center production technicians produce parts that range from simple bolts of steel to titanium bone screws for orthopedic implants.

CNC machining center production technicians work from blueprints, or computer-aided design (CAD), and computer-aided manufacturing (CAM) files. They set up and operate CNC machine tools, monitor the feed rate and speed of machines, and measure, examine, and test completed products for defects.

Hiring Industries

- > Automotive
- > Aerospace
- > Consumer products
- > Electrical equipment
- > Marine
- > Military
- > Medical devices

Program Summary

Skill Course: 122

Time to complete: 2.5 month

CNC MACHINING CENTER PRODUCTION TECHNICIAN

STU-1001

180 Skills Orientation

Greatest Day Ever

STU-1002

Using a Learning Management System

STU-1003

How to Take a Course

How to Navigate the LMS

STU-1004

Learning Online

Tips for Succeeding in Online Learning

CNC-1001

Introduction to Machining

Introduction to Machining

CNC-1002

Machine Tools

CNC-1003

CNC Controllers

CNC-1004

Machining Personnel

CNC-1005

Facility Layout

MTH-1001

Basic Math

Introduction to Basic Math

MTH-1002

Arithmetic Operations

MTH-1004

Fractions and Decimals

Introduction to Fractions

MTH-1005

Working with Fractions

MTH-1006

Decimal Numbers

MTH-1003

Intermediate Math

Numbers and the Number Line

MTH-1007

Positive and Negative Numbers

MTH-1008

Cartesian Coordinates

MTH-1009

The Metric System

CNC MACHINING CENTER PRODUCTION TECHNICIAN

GEO-1001

Geometry

Introduction to Geometry

GEO-1002

Basic Building Blocks of Geometry

GEO-1003

Angles

GEO-1004

Lines

GEO-1005

Polygons

GEO-1006

Triangles

Intermediate Geometry

GEO-1007

Quadrilaterals

GEO-1008

Circles

GEO-1009

Three-dimensional Shapes

GEO-1010

Coordinate Geometry

GEO-1011

Transformation Geometry

Introduction to Safety

SAF-1001

Introduction to OSHA

SAF-1002

Making Work a Safer Place

SAF-1003

Help! What to Do in an Emergency

Personal Protective Equipment Safety

SAF-1004

Personal Protective Equipment

SAF-1005

Eye and Face Protection

SAF-1006

Head Protection

SAF-1007

Foot and Leg Protection

SAF-1008

Hand and Arm Protection

SAF-1009

Body Protection

SAF-1010

Hearing Protection

SAF-1011

Respiratory Protection

Hazardous Material Safety

SAF-1012

Hazardous Materials

CNC MACHINING CENTER PRODUCTION TECHNICIAN

SAF-1013

HazCom

SAF-1014

Hazardous Waste

SAF-1015

Hazard Material Storage

Workplace Safety

SAF-1016

Work Area Safety

SAF-1018

Fall Prevention

Electrical and Fire Safety

SAF-1020

Electrical Safety

SAF-1021

Lockout/Tagout

Tool and Machine Safety

SAF-1027

Hand Tool Safety

SAF-1028

Power Tool Safety

SAF-1030

Machine Safety

Blueprint Reading Fundamentals

DWG-1001

Introduction to Blueprints

DWG-1002

Engineering Drawing Terminology

DWG-1003

Engineering Drawing Views

DWG-1004

Engineering Drawing Lines

DWG-1005

Dimensions and Tolerances

Advanced Blueprint Reading

DWG-2001

Geometric Dimensions and Tolerances

DWG-2002

Assemblies and Fits

DWG-2003

Threads and Fasteners

Precision Measurement I

MEA-2001

Introduction to Precision Instruments

MEA-2002

Rules

CNC MACHINING CENTER PRODUCTION TECHNICIAN

MEA-2003
MEA-2004

Calipers
Micrometers

Precision Measurement II

MEA-2005 Small Hole Gauges
MEA-2006 Dial Indicators
MEA-2007 Bore Gauges
MEA-2008 Height Gauges
MEA-2009 Go/NoGo Gauges
MEA-2010 Test Indicators

Attribute Gauges

MEA-2011 Go/NoGo Thread Gauges
MEA-2012 Attribute Gauges
MEA-2013 Thickness and Radius Gauges
MEA-2014 Squares and Protractors
MEA-2015 Surface Roughness Comparators
MEA-2016 Adjustable Parallels
MEA-2017 Surface Plates
MEA-2018 Optical Comparators

Metals and Materials

MAT-2001 Introduction to Metals
MAT-2002 Ferrous Metals
MAT-2003 Nonferrous Metals
MAT-2004 Heat Treatment of Metals

CNC Vertical Machining Center

CNC-2006 Components of a CNC Machining Center
CNC-2007 CNC Machining Center Movements
CNC-2008 Workpiece and Tool Holding Devices for a CNC Machining Center
CNC-2009 The CNC Controller for a CNC Machining Center

CNC MACHINING CENTER PRODUCTION TECHNICIAN

CNC-2010	Auxiliary Systems for a CNC Machining Center
	CNC Vertical Machining Center Applications
CNC-4015	Maintenance Tasks for a CNC Machining Center
CNC-4016	Power on the CNC Machining Center
CNC-4017	Move the Axes by Rotating the Jog Handle on a CNC Machining Center
CNC-4018	Home the Axes on a CNC Machining Center
CNC-4019	Select a Part Program from Memory on a CNC Machining Center
CNC-4020	Start the Part Program Safely on a CNC Machining Center
CNC-4021	Interrupt Automatic Operation on a CNC Machining Center
CNC-4022	Adjust a Tool Wear Offset on a CNC Machining Center
CNC-4023	Power Off the CNC Machining Center
	Lubricants and Cutting Fluids
CUT-2008	Cutting Fluids
	Cutting Tools for Metalworking
CUT-2009	Cutting Tool Materials
CUT-2010	Indexable Tool Holders
CUT-2011	Inserts
CUT-2012	Solid Cutting Tools
	Threads, Taps and Dies
CUT-2004	Threads
CUT-2005	Taps
CUT-2006	Hand Tapping
	CNC Machining Center Programs
CNC-4024	CNC Programming Procedure for a CNC Machining Center
CNC-4025	CNC Program Structure for a CNC Machining Center
CNC-4026	CNC Addresses for a CNC Machining Center

CNC MACHINING CENTER PRODUCTION TECHNICIAN

CNC-4027 CNC Machining Center Commands
CNC-4028 Organizing a CNC Program for a CNC Machining Center

CNC-2011 **CNC Machine Lubricants**
CNC Machine Lubricants

Searching for a Job
CAR-1001 Kicking Off Your Job Search
CAR-1002 Finding Jobs to Apply For
CAR-1003 Networking

Resumes and Job Applications
CAR-1004 Completing an Employment Application
CAR-1005 Creating Your Resume
CAR-1006 Crafting a Cover Letter

Interviewing
CAR-1007 Understanding the Interview Process
CAR-1008 Making a Positive Impression
CAR-1009 Responding to Interview Questions
CAR-1010 Addressing Special Interview Concerns
CAR-1011 After the Interview

Keeping a Job
CAR-1012 Surviving Your First Day on the Job
CAR-1013 Turning a Job into a Career



COMPOSITES MANUFACTURING & REPAIR TECHNICIAN

COMPOSITES MANUFACTURING AND REPAIR TECHNICIAN

MAKE THE WORLD LIGHTER AND STRONGER

The use of composite materials in manufacturing is expanding quickly. Composites are now used in automotive, aerospace, medical devices and sports equipment. The benefits of light weight and strength make the applications of composite materials endless.

Composite manufacturing and repair technicians manufacture products using layers of carbon fiber, fiberglass, or other composite fabrics. Composite manufacturing requires attention to detail and good manual dexterity.

Hiring Industries

- > Automotive
- > Aerospace
- > Consumer products
- > Electrical equipment
- > Marine
- > Military
- > Medical devices

Program Summary

Skill Course: 112

Time to complete: 2.5 month

COMPOSITES MANUFACTURING AND REPAIR TECHNICIAN

STU-1001	180 Skills Orientation Greatest Day Ever
STU-1002	Using a Learning Management System How to Take a Course
STU-1003	How to Navigate the LMS
STU-1004	Learning Online Tips for Succeeding in Online Learning
MTH-1001	Basic Math Introduction to Basic Math
MTH-1002	Arithmetic Operations
MTH-1004	Fractions and Decimals Introduction to Fractions
MTH-1005	Working with Fractions
MTH-1006	Decimal Numbers
MTH-1003	Intermediate Math Numbers and the Number Line
MTH-1007	Positive and Negative Numbers
MTH-1008	Cartesian Coordinates
MTH-1009	The Metric System
SAF-1001	Introduction to Safety Introduction to OSHA
SAF-1002	Making Work a Safer Place
SAF-1003	Help! What to Do in an Emergency
SAF-1004	Personal Protective Equipment Safety Personal Protective Equipment

COMPOSITES MANUFACTURING AND REPAIR TECHNICIAN

SAF-1005	Eye and Face Protection
SAF-1006	Head Protection
SAF-1007	Foot and Leg Protection
SAF-1008	Hand and Arm Protection
SAF-1009	Body Protection
SAF-1010	Hearing Protection
SAF-1011	Respiratory Protection

Hazardous Material Safety

SAF-1012	Hazardous Materials
SAF-1013	HazCom
SAF-1014	Hazardous Waste
SAF-1015	Hazard Material Storage

Workplace Safety

SAF-1016	Work Area Safety
SAF-1018	Fall Prevention

Electrical and Fire Safety

SAF-1020	Electrical Safety
SAF-1021	Lockout/Tagout

Tool and Machine Safety

SAF-1027	Hand Tool Safety
SAF-1028	Power Tool Safety
SAF-1030	Machine Safety

Blueprint Reading Fundamentals

DWG-1001	Introduction to Blueprints
DWG-1002	Engineering Drawing Terminology
DWG-1003	Engineering Drawing Views
DWG-1004	Engineering Drawing Lines

COMPOSITES MANUFACTURING AND REPAIR TECHNICIAN

DWG-1005

Dimensions and Tolerances

Precision Measurement I

MEA-2001

Introduction to Precision Instruments

MEA-2002

Rules

MEA-2003

Calipers

MEA-2004

Micrometers

Stationary Power Tools

POW-2006

Introduction to Stationary Power Tools

POW-2007

Disc and Belt Sanders

POW-2008

Drill Press

POW-2009

Band Saw

POW-2010

Arbor Press

POW-2011

Bench Grinder

POW-2012

Table Saw

POW-2013

Operating a Table Saw

Introduction to Composites

CMP-1001

Background and History of Composites

CMP-1002

Composite Industries and Products

CMP-1003

Advantages and Disadvantages of Composites

CMP-1004

Safety and Hazards of Composites

Composites Manufacturing Facilities

CMP-1005

Facility Layout

CMP-1006

Non-controlled Contamination Areas

CMP-1007

Lay-up Area

CMP-1008

Curing Area

Materials Used in Composites Manufacturing

CMP-2001

Fiber Based Composites

COMPOSITES MANUFACTURING AND REPAIR TECHNICIAN

CMP-2002	Fibers, Tapes and Fabrics
CMP-2003	Glass and Carbon Fibers
CMP-2004	Matrix Types and Properties
CMP-2005	Curing Process
CMP-2006	Honeycomb Core Materials
CMP-2007	Material Compatibility
CMP-2008	Galvanic Reactivity
CMP-2009	Core Potting Compounds

Composite Material Storage

CMP-2010	Fiber Material Storage
CMP-2011	Controlled Contamination Areas

Tools Used In Composite Manufacturing

CMP-2012	Local Exhaust Ventilation
CMP-2013	Forming Tools
CMP-2014	Coefficient of Thermal Expansion
CMP-2015	Forming Tool Inspection
CMP-2016	Forming Tool Cleaning
CMP-2017	Forming Tool Storage
CMP-2018	Rollers and Sweeps
CMP-2019	Overhead Laser System

Composite Material Kitting

CMP-3001	Kitting with a sheeter
CMP-3002	Kitting by Hand
CMP-3003	Kitting with Automated Machines

Composite Part Layup and Bagging

CMP-3004	Ply Balancing
CMP-3005	Material splicing
CMP-3006	Wrinkles and Gaps

COMPOSITES MANUFACTURING AND REPAIR TECHNICIAN

CMP-3007	Pockets and Voids
CMP-3008	Radius Filler Fabrication by Hand
CMP-3009	Advanced Bagging
CMP-3010	Bagging and Lay-up Equipment
CMP-3011	Preparation for the Lay-up Process
CMP-3012	Cure Cycle Controllers -Temperature Controls
CMP-3013	Thermocouple Science

Composite Layup Projects

CMP-4001	Unidirectional 4 Ply Lay-up
CMP-4002	Carbon 8 Ply Lay-up with Core
CMP-4003	Fiberglass 6 Ply Wet Lay-up

Inspecting Composite Parts

CMP-3014	Introduction to Inspection of Composites
CMP-3015	Visual Inspection for Composites
CMP-3016	Ultrasonic Inspection for Composites
CMP-3017	Tap Inspection for Composites

Searching for a Job

CAR-1001	Kicking Off Your Job Search
CAR-1002	Finding Jobs to Apply For
CAR-1003	Networking

Resumes and Job Applications

CAR-1004	Completing an Employment Application
CAR-1005	Creating Your Resume
CAR-1006	Crafting a Cover Letter

Interviewing

CAR-1007	Understanding the Interview Process
CAR-1008	Making a Positive Impression

COMPOSITES MANUFACTURING AND REPAIR TECHNICIAN

CAR-1009

Responding to Interview Questions

CAR-1010

Addressing Special Interview Concerns

CAR-1011

After the Interview

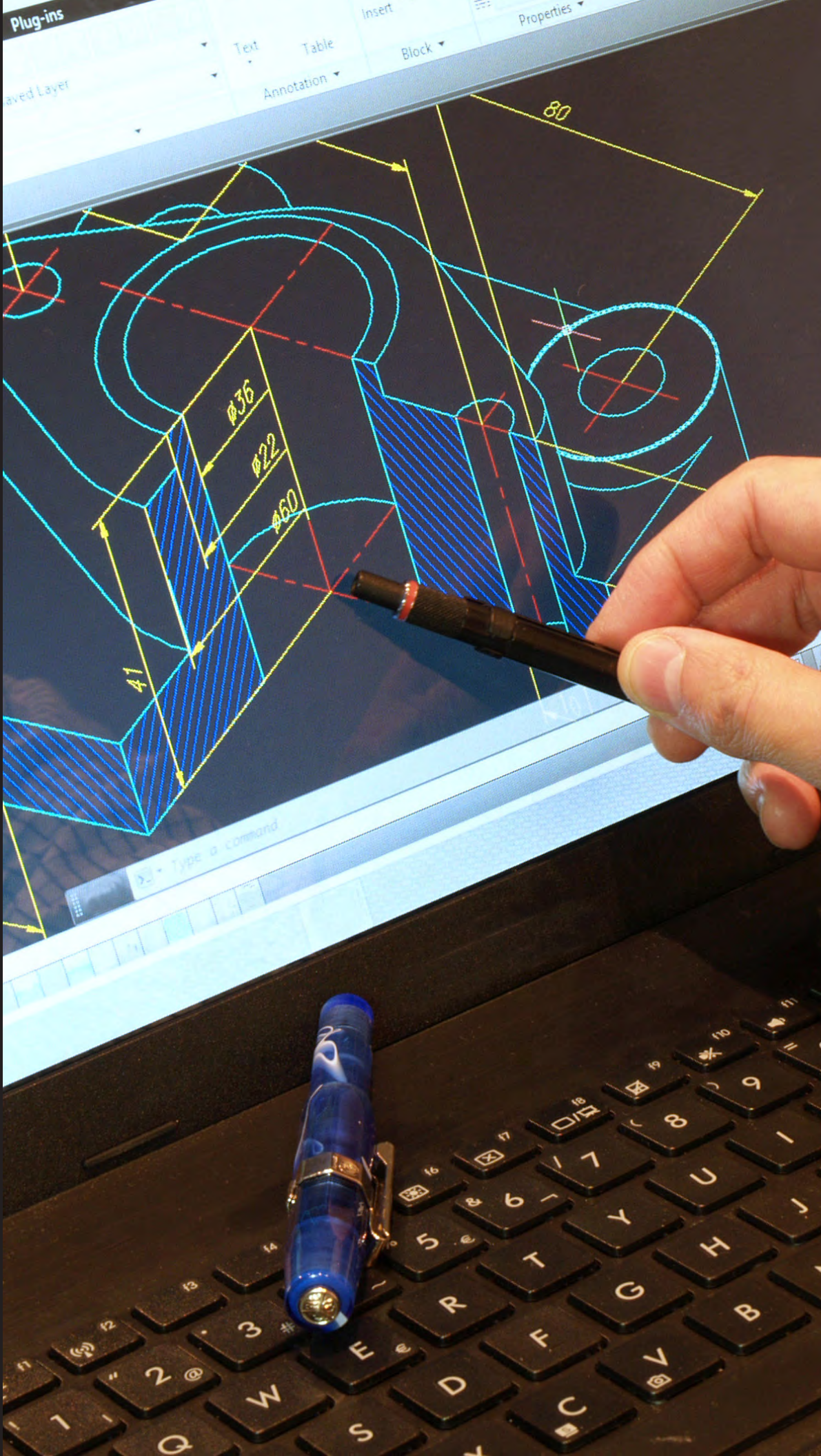
Keeping a Job

CAR-1012

Surviving Your First Day on the Job

CAR-1013

Turning a Job into a Career



DRAFTING & CAD TECHNICIAN

DRAFTING & CAD TECHNICIAN

DRAW THE WORLD

Drafting and CAD technicians use software to convert the designs of engineers and architects into technical drawings and plans. Workers specialize in architectural, civil, electrical, or mechanical drafting and use technical drawings to help design everything from microchips to skyscrapers.

As a drafting and CAD technician, you can launch a rewarding career in several industries, where job demand is high. This program requires additional external training in CAD software.

Hiring Industries

- > Architecture
- > Automotive
- > Aerospace
- > Civil infrastructure
- > Consumer products
- > Construction
- > Electrical equipment
- > Marine
- > Military

Program Summary

Skill Course: 98

Time to complete: 2 month

DRAFTING & CAD TECHNICIAN

STU-1001	180 Skills Orientation Greatest Day Ever
STU-1002	Using a Learning Management System How to Take a Course
STU-1003	How to Navigate the LMS
STU-1004	Learning Online Tips for Succeeding in Online Learning
DWG-1001	Blueprint Reading Fundamentals Introduction to Blueprints
DWG-1002	Engineering Drawing Terminology
DWG-1003	Engineering Drawing Views
DWG-1004	Engineering Drawing Lines
DWG-1005	Dimensions and Tolerances
MTH-1001	Basic Math Introduction to Basic Math
MTH-1002	Arithmetic Operations
MTH-1004	Fractions and Decimals Introduction to Fractions
MTH-1005	Working with Fractions
MTH-1006	Decimal Numbers
MTH-1003	Intermediate Math Numbers and the Number Line
MTH-1007	Positive and Negative Numbers
MTH-1008	Cartesian Coordinates

DRAFTING & CAD TECHNICIAN

MTH-1009 The Metric System

Geometry

GEO-1001 Introduction to Geometry
GEO-1002 Basic Building Blocks of Geometry
GEO-1003 Angles
GEO-1004 Lines
GEO-1005 Polygons
GEO-1006 Triangles

Intermediate Geometry

GEO-1007 Quadrilaterals
GEO-1008 Circles
GEO-1009 Three-dimensional Shapes
GEO-1010 Coordinate Geometry
GEO-1011 Transformation Geometry

Introduction to Safety

SAF-1001 Introduction to OSHA
SAF-1002 Making Work a Safer Place
SAF-1003 Help! What to Do in an Emergency

Personal Protective Equipment Safety

SAF-1004 Personal Protective Equipment
SAF-1005 Eye and Face Protection
SAF-1006 Head Protection
SAF-1007 Foot and Leg Protection
SAF-1008 Hand and Arm Protection
SAF-1009 Body Protection
SAF-1010 Hearing Protection

DRAFTING & CAD TECHNICIAN

SAF-1011

Respiratory Protection

Hazardous Material Safety

SAF-1012

Hazardous Materials

SAF-1013

HazCom

SAF-1014

Hazardous Waste

SAF-1015

Hazard Material Storage

Workplace Safety

SAF-1016

Work Area Safety

SAF-1018

Fall Prevention

Process Control

QUA-1001

Introduction to Quality

QUA-1002

ISO 9000

QUA-1003

Standards Organizations

QUA-1004

Quality Organizations

QUA-1005

Basic Quality Roles and Responsibilities

Quality Management

QUA-1006

Quality Concepts

QUA-1007

The Cost of Quality

QUA-1008

Managing Quality

QUA-1009

Quality Documents

QUA-1010

Corrective and Preventive Action

Introduction to Statistical Process Control

QUA-1011

Introduction to SPC

QUA-1012

Probability and Variation

QUA-1013

The Control Chart

DRAFTING & CAD TECHNICIAN

QUA-2001
QUA-2002
QUA-2003
QUA-2004

Advanced Statistical Quality Systems

Control Chart Analysis
Process Capability
Problem Solving Tools
Problem Solving

DWG-2001
DWG-2002
DWG-2003

Advanced Blueprint Reading

Geometric Dimensions and Tolerances
Assemblies and Fits
Threads and Fasteners

DWG-3001
DWG-3002
DWG-3003
DWG-3004
DWG-3005
DWG-3006
DWG-3007
DWG-3008
DWG-3009
DWG-3010

Geometric Dimensioning and Tolerancing

Introduction to GD&T
GD&T Terms and Symbols
Rules of GD&T
Geometric Tolerances
Datums
Form Tolerances
Profile Tolerances
Orientation Tolerances
Runout Tolerances
Location Tolerances

LEA-1002

Introduction to Lean Manufacturing

The History of Lean Manufacturing

LEA-1003
LEA-1004
LEA-1005

Workplace Organization

Workplace Organization
S1: Sort
S2: Straighten

DRAFTING & CAD TECHNICIAN

LEA-1006
LEA-1007
LEA-1008

S3: Shine
S4: Standardize
S5: Sustain

COM-2004
COM-2005

Technical Writing

Introduction to Technical Writing
Successful Documentation

CAR-1001
CAR-1002
CAR-1003

Searching for a Job

Kicking Off Your Job Search
Finding Jobs to Apply For
Networking

CAR-1004
CAR-1005
CAR-1006

Resumes and Job Applications

Completing an Employment Application
Creating Your Resume
Crafting a Cover Letter

CAR-1007
CAR-1008
CAR-1009
CAR-1010
CAR-1011

Interviewing

Understanding the Interview Process
Making a Positive Impression
Responding to Interview Questions
Addressing Special Interview Concerns
After the Interview

CAR-1012
CAR-1013

Keeping a Job

Surviving Your First Day on the Job
Turning a Job into a Career



MECHATRONICS & INDUSTRIAL AUTOMATION TECHNICIAN

MECHATRONICS & INDUSTRIAL AUTOMATION TECHNICIAN

MAINTAIN THE WORLD

Mechatronics is the convergence of mechanical, electronic, control, and software engineering. Also known as electro-mechanical maintenance technicians, mechatronics and industrial automation technicians combine knowledge of mechanical technology with knowledge of electrical circuits. They install, troubleshoot, repair, and upgrade electronic and computer controlled mechanical systems, such as robotic assembly machines.

Mechatronics and industrial automation technicians work closely with electrical and mechanical engineers. They work primarily in manufacturing, engineering services, and research and development.

Hiring Industries

- > Automotive
- > Aerospace
- > Building maintenance
- > Civil infrastructure
- > Consumer products
- > Construction
- > Logistics and distribution
- > Manufacturing
- > Materials processing

Program Summary

Skill Course: 129

Time to complete: 2.5 months

MECHATRONICS & INDUSTRIAL AUTOMATION TECHNICIAN

STU-1001	180 Skills Orientation Greatest Day Ever
STU-1002	Using a Learning Management System How to Take a Course
STU-1003	How to Navigate the LMS
STU-1004	Learning Online Tips for Succeeding in Online Learning
AUT-1001	Introduction to Industrial Automation Introduction to Automation
AUT-1002	Automated Process
AUT-1003	Automated System
MTH-1001	Basic Math Introduction to Basic Math
MTH-1002	Arithmetic Operations
MTH-1004	Fractions and Decimals Introduction to Fractions
MTH-1005	Working with Fractions
MTH-1006	Decimal Numbers
MTH-1003	Intermediate Math Numbers and the Number Line
MTH-1007	Positive and Negative Numbers
MTH-1008	Cartesian Coordinates
MTH-1009	The Metric System

MECHATRONICS & INDUSTRIAL AUTOMATION TECHNICIAN

SAF-1001

Introduction to Safety

Introduction to OSHA

SAF-1002

Making Work a Safer Place

SAF-1003

Help! What to Do in an Emergency

Personal Protective Equipment Safety

SAF-1004

Personal Protective Equipment

SAF-1005

Eye and Face Protection

SAF-1006

Head Protection

SAF-1007

Foot and Leg Protection

SAF-1008

Hand and Arm Protection

SAF-1009

Body Protection

SAF-1010

Hearing Protection

SAF-1011

Respiratory Protection

Hazardous Material Safety

SAF-1012

Hazardous Materials

SAF-1013

HazCom

SAF-1014

Hazardous Waste

SAF-1015

Hazard Material Storage

Workplace Safety

SAF-1016

Work Area Safety

SAF-1017

Permit-Related Safety

SAF-1018

Fall Prevention

SAF-1019

Ladder Safety

Electrical and Fire Safety

SAF-1020

Electrical Safety

SAF-1021

Lockout/Tagout

MECHATRONICS & INDUSTRIAL AUTOMATION TECHNICIAN

SAF-1022
SAF-1023

Fire Safety
Fire Extinguishers

Tool and Machine Safety

SAF-1027 Hand Tool Safety
SAF-1028 Power Tool Safety
SAF-1029 Sheet Metal and Compressed Gas Safety
SAF-1030 Machine Safety
SAF-1031 Safety Devices

Introduction to Pneumatics

PNE-1001 Introduction to Pneumatics
PNE-1002 Pneumatic Systems
PNE-1003 The Properties of Gases
PNE-1004 Air Compression and Distribution - Part One
PNE-1005 Air Compression and Distribution - Part Two

Components of a Pneumatic System

PNE-2001 Compressed Air Treatment
PNE-2002 Pneumatic Actuators
PNE-2003 Directional Control Valves
PNE-2004 Vacuum Technology
PNE-2005 Measuring Pneumatic Variables

Pneumatic Applications

PNE-3001 Pneumatic Applications

Introduction to Electricity

ELE-1001 Production of Electricity
ELE-1002 Transmission and Distribution of Electricity

MECHATRONICS & INDUSTRIAL AUTOMATION TECHNICIAN

ELE-1003	Uses of Electricity
ELE-1004	Atomic Structure
ELE-1005	Electrical Circuits
ELE-1006	Electrical Current
ELE-1007	Voltage
ELE-1008	Electrical Power
ELE-1009	Resistance
ELE-1010	Ohm's Law
ELE-1011	Watt's Law

Electrical Measurement Conversion

ELE-2019	Electrical Measurement and Unit Conversion
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DC Electricity

ELE-1012	Direct Current
ELE-1013	Batteries
ELE-1014	Circuit Analysis

AC Electricity

ELE-1015	Electromagnetism
ELE-1016	AC Waveform Generation
ELE-1017	Electromagnetic Devices
ELE-1018	Transformers
ELE-1019	Capacitors

Solid State Electricity

ELE-1020	Semiconductors
ELE-1021	Solid State Devices

MECHATRONICS & INDUSTRIAL AUTOMATION TECHNICIAN

ELE-2001	Introduction to Wiring
ELE-2002	Wires, Connectors, and Circuit Protection
	Connecting Transformers
	Introduction to Electric Motors
ELE-2003	DC Motors
ELE-2004	AC Single-Phase Motors
ELE-2005	Three-Phase AC Motors
	Electrical Connectors
ELE-2006	Electrical Connectors and Fasteners
	Sensor Technology
ELE-2012	Introduction to Sensors Technology
ELE-2013	Sensor Technology
ELE-2014	Proximity Sensors
ELE-2015	Position, Speed, and Acceleration Sensors
ELE-2016	Industrial Process Sensors
ELE-2017	Advanced Sensors
	Programmable Logic Controllers
PLC-1001	Introduction to Programmable Controllers
PLC-1002	Introduction to Digital Electronics
PLC-2001	Types and Functions of Programmable Controllers
PLC-2002	General Structure of PLC
PLC-2003	Physical Integration of the PLC
PLC-2004	Internal Structure of the CPU
PLC-2005	Basic Concepts of PLC Programming
PLC-2006	Common PLC Applications

MECHATRONICS & INDUSTRIAL AUTOMATION TECHNICIAN

HYD-1001
HYD-1002
HYD-1003
HYD-1004

Introduction to Hydraulics

Introduction to Hydraulics
Hydraulic Theory
Hydraulic Fluids
Hydraulic Systems

HYD-2001
HYD-2002
HYD-2003
HYD-2004

Components of a Hydraulic System

Hydraulic Actuators
Classification of Hydraulic Valves
Hydraulic Piping and Instrumentation
Hydroelectric Symbolology and Circuits

AUT-2001
AUT-2002
AUT-2003
AUT-2004
AUT-2005

Process Controls

Introduction to Process Controls
Process Control Systems
Set Point/Comparator
Controller (PID Control)
Multivariate Processes

ROB-1001
ROB-1002
ROB-2001
ROB-2002
ROB-2003
ROB-2004
ROB-2005

Robotics

Robotics Introduction to Robotics
Robot Safety
Robot Axes
Robot Manipulator
Controller and End Effectors
Robot Programs
Industrial Robot Applications

CAR-1001

Searching for a Job

Kicking Off Your Job Search

MECHATRONICS & INDUSTRIAL AUTOMATION TECHNICIAN

CAR-1002
CAR-1003

Finding Jobs to Apply For
Networking

CAR-1004
CAR-1005
CAR-1006

Resumes and Job Applications

Completing an Employment Application

Creating Your Resume

Crafting a Cover Letter

CAR-1007
CAR-1008
CAR-1009
CAR-1010
CAR-1011

Interviewing

Understanding the Interview Process

Making a Positive Impression

Responding to Interview Questions

Addressing Special Interview Concerns

After the Interview

CAR-1012
CAR-1013

Keeping a Job

Surviving Your First Day on the Job

Turning a Job into a Career



QUALITY ASSURANCE TECHNICIAN

QUALITY ASSURANCE TECHNICIAN

MAKE THE WORLD EXCELLENT

When products like cell phones, computers or automobiles leave the factory, it's the quality assurance technician who makes sure they work. Also known as inspectors or testers, quality assurance technicians work on a wide range of challenging projects across multiple industries.

Critical to the success of any product development team, they make a difference. Quality assurance technicians reduce the cost of production, decrease maintenance expenses, and increase customer safety and satisfaction.

Hiring Industries

- > Automotive
- > Aerospace
- > Building maintenance
- > Civil infrastructure
- > Consumer products
- > Construction
- > Electrical equipment
- > Logistics and distribution
- > Manufacturing
- > Materials processing

Program Summary

Skill Course: 131

Time to complete: 2.5 months

QUALITY ASSURANCE TECHNICIAN

STU-1001	180 Skills Orientation Greatest Day Ever
STU-1002	Using a Learning Management System How to Take a Course
STU-1003	How to Navigate the LMS
STU-1004	Learning Online Tips for Succeeding in Online Learning
QUA-1001	Quality Systems Introduction to Quality
QUA-1002	ISO 9000
QUA-1003	Standards Organizations
QUA-1004	Quality Organizations
QUA-1005	Basic Quality Roles and Responsibilities
MTH-1001	Basic Math Introduction to Basic Math
MTH-1002	Arithmetic Operations
MTH-1004	Fractions and Decimals Introduction to Fractions
MTH-1005	Working with Fractions
MTH-1006	Decimal Numbers
MTH-1003	Intermediate Math Numbers and the Number Line
MTH-1007	Positive and Negative Numbers
MTH-1008	Cartesian Coordinates

QUALITY ASSURANCE TECHNICIAN

MTH-1009 The Metric System

Geometry

GEO-1001 Introduction to Geometry
GEO-1002 Basic Building Blocks of Geometry
GEO-1003 Angles
GEO-1004 Lines
GEO-1005 Polygons
GEO-1006 Triangles

Intermediate Geometry

GEO-1007 Quadrilaterals
GEO-1008 Circles
GEO-1009 Three-dimensional Shapes
GEO-1010 Coordinate Geometry
GEO-1011 Transformation Geometry

Introduction to Safety

SAF-1001 Introduction to OSHA
SAF-1002 Making Work a Safer Place
SAF-1003 Help! What to Do in an Emergency

Personal Protective Equipment Safety

SAF-1004 Personal Protective Equipment
SAF-1005 Eye and Face Protection
SAF-1006 Head Protection
SAF-1007 Foot and Leg Protection
SAF-1008 Hand and Arm Protection
SAF-1009 Body Protection
SAF-1010 Hearing Protection

QUALITY ASSURANCE TECHNICIAN

SAF-1011

Respiratory Protection

Hazardous Material Safety

SAF-1012

Hazardous Materials

SAF-1013

HazCom

SAF-1014

Hazardous Waste

SAF-1015

Hazard Material Storage

Workplace Safety

SAF-1016

Work Area Safety

SAF-1018

Fall Prevention

Quality Management

QUA-1006

Quality Concepts

QUA-1007

The Cost of Quality

QUA-1008

Managing Quality

QUA-1009

Quality Documents

QUA-1010

Corrective and Preventive Action

Introduction to Statistical Process Control

QUA-1011

Introduction to SPC

QUA-1012

Probability and Variation

QUA-1013

The Control Chart

Advanced Statistical Process Control

QUA-2001

Control Chart Analysis

QUA-2002

Process Capability

QUA-2003

Problem Solving Tools

QUA-2004

Problem Solving

QUALITY ASSURANCE TECHNICIAN

DWG-1001
DWG-1002
DWG-1003
DWG-1004
DWG-1005

Blueprint Reading Fundamentals

Introduction to Blueprints
Engineering Drawing Terminology
Engineering Drawing Views
Engineering Drawing Lines
Dimensions and Tolerances

DWG-2001
DWG-2002
DWG-2003

Advanced Blueprint Reading

Geometric Dimensions and Tolerances
Assemblies and Fits
Threads and Fasteners

DWG-3001
DWG-3002
DWG-3003
DWG-3004
DWG-3005
DWG-3006
DWG-3007
DWG-3008
DWG-3009
DWG-3010

Geometric Dimensioning and Tolerancing

Introduction to GD&T
GD&T Terms and Symbols
Rules of GD&T
Geometric Tolerances
Datums
Form Tolerances
Profile Tolerances
Orientation Tolerances
Runout Tolerances
Location Tolerances

MEA-2001
MEA-2002
MEA-2003
MEA-2004

Precision Measurement I

Introduction to Precision Instruments
Rules
Calipers
Micrometers

QUALITY ASSURANCE TECHNICIAN

MEA-2005
MEA-2006
MEA-2007
MEA-2008
MEA-2009
MEA-2010

Precision Measurement II

Small Hole Gauges
Dial Indicators
Bore Gauges
Height Gauges
Go/NoGo Gauges
Test Indicators

MEA-2011
MEA-2012
MEA-2013
MEA-2014
MEA-2015

Attribute Gauges

Go/NoGo Thread Gauges
Attribute Gauges
Thickness and Radius Gauges
Squares and Protractors
Surface Roughness Comparators

MEA-2016
MEA-2017
MEA-2018

Precision Measurement III

Adjustable Parallels
Surface Plates
Optical Comparators

COM-2004
COM-2005

Technical Writing

Introduction to Technical Writing
Successful Documentation

COM-1001
COM-1002
COM-1003
COM-1004
COM-1005

Communicating with Others

Introduction to Communication
Effective Communication
Verbal Communication
Written Communication
Nonverbal Communication

QUALITY ASSURANCE TECHNICIAN

COM-1006

Listening Skills

COM-1007

Workplace Communication

Dealing With Conflict

COM-2001

Understanding Conflict

COM-2002

Communication Skills

COM-2003

Managing Conflict

Working on a Team

TEA-1001

Working in a Group

TEA-1002

Group Communication

TEA-1003

Effective Collaboration

TEA-1004

Life Stages of a Team

TEA-1005

Meeting

Team Dynamics

TEA-1006

Diversity

TEA-1007

Creativity

TEA-1008

Problem Solving

TEA-1009

Decision Making

TEA-1010

Conflict Management

TEA-1011

Leadership

TEA-1012

Virtual Groups

Dealing With Conflict

COM-2001

Understanding Conflict

COM-2002

Communication Skills

COM-2003

Managing Conflict

QUALITY ASSURANCE TECHNICIAN

CAR-1001
CAR-1002
CAR-1003

Searching for a Job

Kicking Off Your Job Search
Finding Jobs to Apply For
Networking

CAR-1004
CAR-1005
CAR-1006

Resumes and Job Applications

Completing an Employment Application
Creating Your Resume
Crafting a Cover Letter

CAR-1007
CAR-1008
CAR-1009
CAR-1010
CAR-1011

Interviewing

Understanding the Interview Process
Making a Positive Impression
Responding to Interview Questions
Addressing Special Interview Concerns
After the Interview

CAR-1012
CAR-1013

Keeping a Job

Surviving Your First Day on the Job
Turning a Job into a Career



SAFETY TECHNICIAN

SAFETY TECHNICIAN

HELP KEEP OTHERS HEALTHY AND SAFE

Safety technicians collect data on the safety and health conditions of the workplace. Safety technicians work with occupational health and safety specialists in conducting tests and measuring hazards to help prevent harm to workers, property, the environment, and the general public.

Safety technicians work in a variety of settings, such as offices, manufacturing facilities, and mines. Their jobs often involve considerable fieldwork and travel.

Hiring Industries

- > Automotive
- > Aerospace
- > Building maintenance
- > Civil infrastructure
- > Consumer products
- > Construction
- > Electrical equipment
- > Marine
- > Military
- > Materials processing
- > Medical devices

Program Summary

Skill Course: 110

Time to complete: 2.0 months

SAFETY TECHNICIAN



STU-1001	180 Skills Orientation Greatest Day Ever
STU-1002	Using a Learning Management System How to Take a Course
STU-1003	How to Navigate the LMS
STU-1004	Learning Online Tips for Succeeding in Online Learning
SAF-1001	Introduction to Safety Introduction to OSHA
SAF-1002	Making Work a Safer Place
SAF-1003	Help! What to Do in an Emergency
MTH-1001	Basic Math Introduction to Basic Math
MTH-1002	Arithmetic Operations
MTH-1004	Fractions and Decimals Introduction to Fractions
MTH-1005	Working with Fractions
MTH-1006	Decimal Numbers
MTH-1003	Intermediate Math Numbers and the Number Line
MTH-1007	Positive and Negative Numbers
MTH-1008	Cartesian Coordinates
MTH-1009	The Metric System

SAFETY TECHNICIAN



Geometry

GEO-1001	Introduction to Geometry
GEO-1002	Basic Building Blocks of Geometry
GEO-1003	Angles
GEO-1004	Lines
GEO-1005	Polygons
GEO-1006	Triangles

Intermediate Geometry

GEO-1007	Quadrilaterals
GEO-1008	Circles
GEO-1009	Three-dimensional Shapes
GEO-1010	Coordinate Geometry
GEO-1011	Transformation Geometry

Personal Protective Equipment Safety

SAF-1004	Personal Protective Equipment
SAF-1005	Eye and Face Protection
SAF-1006	Head Protection
SAF-1007	Foot and Leg Protection
SAF-1008	Hand and Arm Protection
SAF-1009	Body Protection
SAF-1010	Hearing Protection
SAF-1011	Respiratory Protection

Hazardous Material Safety

SAF-1012	Hazardous Materials
SAF-1013	HazCom
SAF-1014	Hazardous Waste
SAF-1015	Hazard Material Storage

SAFETY TECHNICIAN



SAF-1016
SAF-1017
SAF-1018
SAF-1019

Workplace Safety

Work Area Safety
Permit-Related Safety
Fall Prevention
Ladder Safety

SAF-1024
SAF-1025
SAF-1026

Material Handling Safety

Material Handling Basics
Powered Industrial Trucks
Crane and Rigging Safety

SAF-1027
SAF-1028
SAF-1029
SAF-1030
SAF-1031

Tool and Machine Safety

Hand Tool Safety
Power Tool Safety
Sheet Metal and Compressed Gas Safety
Machine Safety
Safety Devices

CAR-2001
CAR-2002
CAR-2003
CAR-2004

Manufacturing as a Career

Manufacturing - A Future Worth Exploring
Manufacturing - Components of Production
Manufacturing - Credentials and Competencies
Manufacturing - Career Planning and Resources

MFG-1001
MFG-1002
MFG-1003
MFG-1004
MFG-1005

Introduction to Manufacturing

What is Advanced Manufacturing?
Manufacturing History and Technology
From Ideas to Products
From Design to Manufacturing
Safety, Quality and the Environment in Manufacturing

SAFETY TECHNICIAN



MFG-1006
MFG-1007

Measuring Success in Manufacturing
Careers in Manufacturing

Introduction to Logistics

LOG-1001
LOG-1002
LOG-1003
LOG-1004
LOG-1005
LOG-1006
LOG-1007

What is Logistics?
Logistics Technology
Inventory
Distribution and Transportation
Safety, Quality and the Environment in Logistics
Winning in Logistics
Careers in Logistics

Manufacturing & Logistics Game

MFG-1008

The Game of Manufacturing and Logistics

Communicating with Others

COM-1001
COM-1002
COM-1003
COM-1004
COM-1005
COM-1006
COM-1007

Introduction to Communication
Effective Communication
Verbal Communication
Written Communication
Nonverbal Communication
Listening Skills
Workplace Communication

Working on a Team

TEA-1001
TEA-1002
TEA-1003
TEA-1004
TEA-1005

Working in a Group
Group Communication
Effective Collaboration
Life Stages of a Team
Meeting

SAFETY TECHNICIAN



TEA-1006
TEA-1007
TEA-1008
TEA-1009
TEA-1010
TEA-1011
TEA-1012

Team Dynamics

Diversity
Creativity
Problem Solving
Decision Making
Conflict Management
Leadership
Virtual Groups

COM-2001
COM-2002
COM-2003

Dealing With Conflict

Understanding Conflict
Communication Skills
Managing Conflict

CAR-1001
CAR-1002
CAR-1003

Searching for a Job

Kicking Off Your Job Search
Finding Jobs to Apply For
Networking

CAR-1004
CAR-1005
CAR-1006

Resumes and Job Applications

Completing an Employment Application
Creating Your Resume
Crafting a Cover Letter

CAR-1007
CAR-1008
CAR-1009
CAR-1010
CAR-1011

Interviewing

Understanding the Interview Process
Making a Positive Impression
Responding to Interview Questions
Addressing Special Interview Concerns
After the Interview

SAFETY TECHNICIAN

CAR-1012
CAR-1013

Keeping a Job

Surviving Your First Day on the Job
Turning a Job into a Career



EMPLOYABILITY SKILLS

EMPLOYABILITY SKILLS

SKILLS FOR EVERY CAREER IN THE WORLD

Employability skills cover a broad range of important, non-technical topics that are listed by employers as essential to job performance. In this program you will learn essential soft skills including communication skills, team building skills, customer service skills, time management skills, and basic workplace skills.

You will also learn skills to help you build and grow your career and your personal brand, Microsoft Office© skills, and powerful skills to help you manage your personal finances.

On average, one quarter of the skills required for all jobs are employability skills. Employees with strong employability skills will be invaluable members of high-performing, collaborative teams.

Hiring Industries

- > Automotive
- > Automotive
- > Aerospace
- > Banking
- > Civil infrastructure
- > Consumer products
- > Construction
- > Electrical equipment
- > Financial
- > Marine
- > Military
- > Medical devices

Program Summary

Skill Course: 97

Time to complete: 1.5 months

EMPLOYABILITY SKILLS

STU-1001	180 Skills Orientation Greatest Day Ever
STU-1002	Using a Learning Management System How to Take a Course
STU-1003	How to Navigate the LMS
STU-1004	Learning Online Tips for Succeeding in Online Learning
COM-1001	Communicating with Others Introduction to Communication
COM-1002	Effective Communication
COM-1003	Verbal Communication
COM-1004	Written Communication
COM-1005	Nonverbal Communication
COM-1006	Listening Skills
COM-1007	Workplace Communication
COM-2001	Dealing With Conflict Understanding Conflict
COM-2002	Communication Skills
COM-2003	Managing Conflict
COM-2004	Technical Writing Introduction to Technical Writing
COM-2005	Successful Documentation
CUS-1001	Customer Service Focusing on Your Customers

EMPLOYABILITY SKILLS

CUS-1002	Providing Friendly, Courteous, and Efficient Service
CUS-1003	Communicating Effectively with Customers
CUS-1004	Identifying and Meeting Customer Needs
CUS-1005	Building Customer Relationships

Advanced Customer Service

CUS-1006	Respecting Diversity in Your Customers
CUS-1007	Better Serving Customers with Disabilities
CUS-1008	Dealing with Difficult Customers
CUS-1009	Responding to Customer Complaints
CUS-1010	Managing Conflict with Internal Customers

Working on a Team

TEA-1001	Working in a Group
TEA-1002	Group Communication
TEA-1003	Effective Collaboration
TEA-1004	Life Stages of a Team
TEA-1005	Meeting

Team Dynamics

TEA-1006	Diversity
TEA-1007	Creativity
TEA-1008	Problem Solving
TEA-1009	Decision Making
TEA-1010	Conflict Management
TEA-1011	Leadership
TEA-1012	Virtual Groups

Teamwork & Training

TEA-1013	Teamwork
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EMPLOYABILITY SKILLS

TEA-1014

Team Building

Building Effective Teams

TEA-1015

Team Development

TEA-1016

Team Problem Solving

TEA-1017

Training and Development

Time Management

TIM-1001

Managing Your Time

TIM-1003

Making a List and Checking It Twice

TIM-1004

Planning Your Day

TIM-1005

Adopting Timesaving Strategies

TIM-1006

Getting Organized

TIM-1007

Ending Procrastination

TIM-1008

Taking Advantage of Technology

Stress Management

STR-1001

Dealing with Stress

STR-1002

Coping with On-the-job Stress

Goal Setting

LIF-1001

Identifying Your Life Goals

Workplace Skills

WRK-1001

Handling Dangerous Workplace Situations

Microsoft Excel

MSO-1001

Getting Started with Excel

MSO-1002

Entering Text and Values

MSO-1003

Formatting Data

EMPLOYABILITY SKILLS

MSO-1004 Formulas and Functions
MSO-1005 Working with Dates and Times

Intermediate Excel

MSO-1006 Working with Data Tables
MSO-1007 Displaying Data in Charts
MSO-1008 Printing a Worksheet

Microsoft Word

MSO-1011 Getting Started with Word
MSO-1012 Creating a Document
MSO-1013 Font Formatting
MSO-1014 Paragraph Formatting
MSO-1015 Checking the Spelling and Grammar

Managing Your Money

PFI-1001 Compensation
PFI-1004 Banking
PFI-1011 Taxes
PFI-1005 Credit Cards
PFI-1006 Loans
PFI-1007 Credit Reports and Credit Scores
PFI-1013 Record Keeping

Money Budgets and Goals

PFI-1002 Goal Setting
PFI-1003 Budgeting

Retirement Planning

PFI-1008 Retirement Planning

EMPLOYABILITY SKILLS

PFI-1009

Investing

Investing

PFI-1010

Insurance

Insurance

PFI-1012

Estate Planning

Estate Planning

CAR-1001

Searching for a Job

CAR-1002

Kicking Off Your Job Search

CAR-1003

Finding Jobs to Apply For

Networking

CAR-1004

Resumes and Job Applications

CAR-1005

Completing an Employment Application

CAR-1006

Creating Your Resume

Crafting a Cover Letter

CAR-1007

Interviewing

CAR-1008

Understanding the Interview Process

CAR-1009

Making a Positive Impression

CAR-1010

Responding to Interview Questions

CAR-1011

Addressing Special Interview Concerns

After the Interview

CAR-1012

Keeping a Job

CAR-1013

Surviving Your First Day on the Job

Turning a Job into a Career

EMPLOYABILITY SKILLS

Personal Branding

CAR-1014	Personal Branding What is a Personal Branding
CAR-1015	Define Your Brand
CAR-1016	Develop Your Brand Messages
CAR-1017	Implement Your Brand Strategy



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