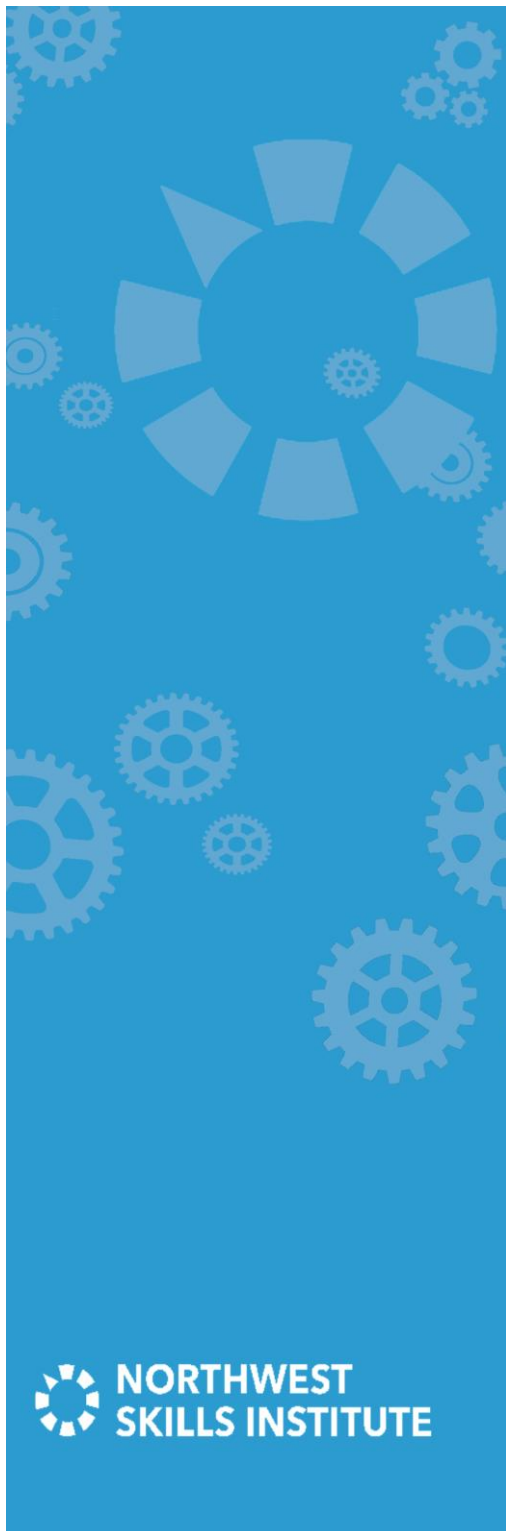


Brief Program Description



The Advanced Manufacturing Technician program is a 7 week online program designed to help students gain the skills and knowledge required for work as entry-level advanced manufacturing technicians.

Advanced manufacturing technicians play a valuable role in the manufacturing industry. They provide support to the entire manufacturing organization to help ensure that the equipment is running well, materials are built and flowing through the plants correctly and that safety procedures are being followed.

Students complete courses in the following areas:

- 1. Manufacturing**
Many people think of “manufacturing” as mindlessly putting together widgets. But advanced manufacturing is at the heart of our modern culture. It offers so many opportunities for creative thinkers, problem-solvers, project leaders, people who enjoy working with the latest technologies and those who like to work with their hands. This unit will teach students about the importance of manufacturing, how manufacturing helps transform ideas into products, what it takes to design and get an advanced manufacturing facility up and running for a product, and the importance of safety and quality in manufacturing.
- 2. Automation**
Automation is the use of devices, machines and control systems to decrease the need for human work. In this unit, students learn about the different assembly process steps, process checks and the operations performed in an automated system.
- 3. CNC**
CNC (Computer Numerical Controlled) machining is the process of using a machine to shape, assemble or remove excess material to produce a final product. In this unit, students are introduced to the core concepts behind machining.
- 4. Engineering Drawings**
A blueprint is the primary means of communicating the requirements of a product to those involved in manufacturing



or building a product. In this unit, students explore the technical and manufacturing aspects of blueprints.

5. Logistics

After products are manufactured, they go through a detailed logistics process. Logistics is much more than just transportation. It is a complex system that is essential to the manufacturing process. In this unit, students explore the importance of logistics, the importance of inventory and product distribution.

6. Lean

Lean manufacturing is a set of principles and practices designed to help ensure products are produced according to specifications and delivered when customers want them, and at the lowest possible cost and highest possible quality level.

7. Quality

This unit explores quality; quality organizations; roles and responsibilities; ISO 9000; and how these terms apply to manufacturing companies. Students also learn about statistical process control, or SPC, a quality control methodology that uses statistics to predict variation in processes. SPC is widely used by manufacturing companies to help maintain the quality of the products they produce.

8. Math

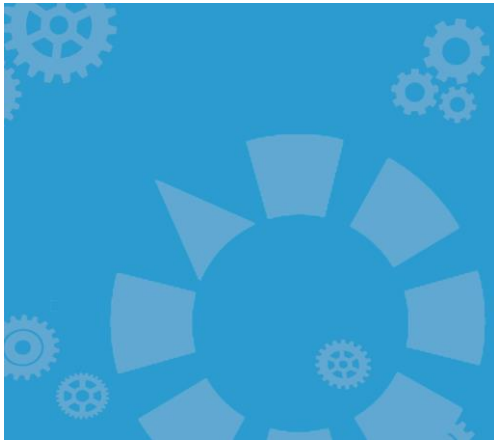
This unit reviews basic math skills, including working with fractions and decimal numbers. It also introduces the Metric system and the Cartesian coordinate system, which is frequently used in manufacturing.

9. Measurement Tools

In this unit, students are introduced to the basic components of a measurement and to various precision measuring instruments including rules, calipers, micrometers. Topics covered also include small hole gauges, dial indicators, bore gauges, height gauges, Go/NoGo gauges, test indicators optical comparators and other measuring instruments used in manufacturing.

10. Safety

In this unit, students learn about workplace safety procedures, including occupational health and safety standards, hazard



analysis, personal protective equipment (PPE), hazardous material safety, work area safety, including fall protection systems, electrical and fire safety, tool and machine safety.

11. Team Building Skills

Most employers agree that good employees have more than just technical skills. This unit focuses on the teamwork skills workers need, such as: effective collaboration strategies, meetings, problem solving and conflict management.

Upon successful completion of the program, students receive an Advanced Manufacturing Technician certificate.

Career Occupation

Advanced Manufacturing Technician (NOC 9619)

Hiring Industries

- automotive
- aerospace
- civil infrastructure
- consumer products
- construction
- electrical equipment
- marine
- materials processing
- military

Admission Requirements

Minimum Canadian Language Benchmark (CLB) 7 or equivalent

Program Prerequisites

none

Learning Objectives

Upon successful completion of this program, the learner will be able to:

- set up and verify the functionality of safety equipment
- adhere to all applicable regulations, policies, and procedures for health, safety, and environmental compliance
- inspect finished products for quality and adherence to customer specifications
- monitor and adjust production processes or equipment for quality and productivity
- demonstrate the employability skills of an advanced manufacturing technician

Teaching Methods

Instruction is delivered through a series of asynchronous interactive online courses. Each course is comprised of a number of modules that students must master before they are able to proceed to the next module or course.

Method(s) of Student Evaluation

Students must demonstrate mastery (a score of 100% on quizzes) for each course. Student success is measured through the successful completion of all courses in the program.

Completion Requirements

Students must:

- complete all of the courses listed in the Advanced Manufacturing Technician program outline
- demonstrate mastery of all course modules

Required Program Materials

This program requires:
internet access using either:

- Google Chrome
- Mozilla Firefox
- Internet Explorer

Headphones

Program Duration

1.5 months completing 3 modules a day (96 hours)

Homework Hours

none, all work is completed online

Delivery Methods

Indicate how the course is delivered:

- In-class instruction*
- Distance education (online)*
- Combined delivery (both in-class and distance)*

Program Organization

Course No.	Course Name		No. of Hours
STU-1001	180 Skills Orientation - 180 Skills	Greatest Day Ever	0.6
STU-1002	Using a Learning Management System	How to Take a Course	0.8
STU-1003	Using a Learning Management System	How to Navigate the LMS	1.0
STU-1004	Learning Online	Tips for Succeeding in Online Learning	0.8
CAR-2001	Manufacturing as a Career	Manufacturing - A Future Worth Exploring	1.0
CAR-2002	Manufacturing as a Career	Manufacturing - Components of Production	0.8
CAR-2003	Manufacturing as a Career	Manufacturing - Credentials and Competencies	1.2
CAR-2004	Manufacturing as a Career	Career Planning and Resources	1.2
MFG-1001	Introduction to Manufacturing	What is Advanced Manufacturing?	0.9
MFG-1002	Introduction to Manufacturing	Manufacturing History and Technology	1.0
MFG-1003	Introduction to Manufacturing	From Ideas to Products	0.9
MFG-1004	Introduction to Manufacturing	From Design to Manufacturing	1.1
MFG-1005	Introduction to Manufacturing	Safety, Quality and the Environment in Manufacturing	0.7
MFG-1006	Introduction to Manufacturing	Measuring Success in Manufacturing	0.9
MFG-1007	Introduction to Manufacturing	Careers in Manufacturing	1.1
LOG-1001	Introduction to Logistics	What is Logistics?	0.9
LOG-1002	Introduction to Logistics	Logistics Technology	0.8
LOG-1003	Introduction to Logistics	Inventory	0.8
LOG-1004	Introduction to Logistics	Distribution and Transportation	0.9
MFG-1008	Manufacturing and Logistics Game	The Game of Manufacturing and Logistics	0.6
MTH-1001	Basic Math	Introduction to Basic Math	0.7
MTH-1002	Basic Math	Arithmetic Operations	1.4
MTH-1003	Basic Math	Numbers and the Number Line	1.1
MTH-1004	Fractions	Introduction to Fractions	1.1
MTH-1005	Fractions	Working with Fractions	1.4
MTH-1006	Decimals	Decimal Numbers	1.0
MTH-1007	Positive and Negative Numbers	Positive and Negative Numbers	0.9
MTH-1008	Cartesian Coordinates	Cartesian Coordinates	0.9
MTH-1009	The Metric System	The Metric System	1.1
SAF-1002	Introduction to Safety	Making Work a Safer Place	1.6

Course No.	Course Name		No. of Hours
SAF-1003	Introduction to Safety	Help! What to Do in an Emergency	1.2
SAF-1004	Personal Protective Equipment Safety	Personal Protective Equipment	1.5
SAF-1005	Personal Protective Equipment Safety	Eye and Face Protection	1.0
SAF-1006	Personal Protective Equipment Safety	Head Protection	0.9
SAF-1007	Personal Protective Equipment Safety	Foot and Leg Protection	0.9
SAF-1008	Personal Protective Equipment Safety	Hand and Arm Protection	1.1
SAF-1010	Personal Protective Equipment Safety	Hearing Protection	0.9
SAF-1012	Hazardous Material Safety	Hazardous Materials	1.5
SAF-1013	Hazardous Material Safety	HazCom	1.4
SAF-1014	Hazardous Material Safety	Hazardous Waste	0.7
SAF-1016	Workplace Safety	Work Area Safety	1.2
SAF-1018	Workplace Safety	Fall Prevention	1.3
SAF-1020	Electrical and Fire Safety	Electrical Safety	1.4
SAF-1021	Electrical and Fire Safety	Lockout/Tagout	1.0
MFG-1009	Engineering Processes	The Engineering Process	0.8
MFG-1010	Engineering Processes	Information Sharing	0.8
QUA-1001	Quality Systems	Introduction to Quality	1.4
QUA-1002	Quality Systems	ISO 9000	1.1
QUA-1003	Quality Systems	Standards Organizations	0.9
QUA-1004	Quality Systems	Quality Organizations	0.9
QUA-1005	Quality Systems	Basic Quality Roles and Responsibilities	1.0
QUA-1011	Introduction to Statistical Process Control	Introduction to SPC	1.0
QUA-1012	Introduction to Statistical Process Control	Probability and Variation	1.8
QUA-1013	Introduction to Statistical Process Control	The Control Chart	1.2
DWG-1001	Blueprint Reading Fundamentals	Introduction to Blueprints	1.7
DWG-1002	Blueprint Reading Fundamentals	Engineering Drawing Terminology	1.5
DWG-1003	Blueprint Reading Fundamentals	Engineering Drawing Views	1.6
DWG-1004	Blueprint Reading Fundamentals	Engineering Drawing Lines	1.3

Course No.	Course Name		No. of Hours
DWG-1005	Blueprint Reading Fundamentals	Dimensions and Tolerances	2.1
MEA-2001	Precision Measurement Tools	Introduction to Precision Instruments	1.1
MEA-2002	Precision Measurement Tools	Rules	1.1
MEA-2003	Precision Measurement Tools	Calipers	1.3
MEA-2004	Precision Measurement Tools	Micrometers	1.9
LEA-1002	Introduction to Lean Manufacturing	The History of Lean Manufacturing	0.9
LEA-1003	Workplace Organization	Workplace Organization	1.1
LEA-1004	Workplace Organization	S1: Sort	0.7
LEA-1005	Workplace Organization	S2: Straighten	0.9
LEA-1006	Workplace Organization	S3: Shine	0.8
LEA-1007	Workplace Organization	S4: Standardize	0.7
LEA-1008	Workplace Organization	S5: Sustain	0.7
CNC-1001	Introduction to Machining	Introduction to Machining	1.5
CNC-1002	Introduction to Machining	Machine Tools	0.8
CNC-1003	Introduction to Machining	CNC Controllers	1.0
CNC-1004	Introduction to Machining	Machining Personnel	0.9
CNC-1005	Introduction to Machining	Facility Layout	1.5
AUT-1001	Introduction to Industrial Automation	Introduction to Automation	0.8
AUT-1002	Introduction to Industrial Automation	Automated Process	1.1
AUT-1003	Introduction to Industrial Automation	Automated System	1.7
TEA-1001	Team Building	Working in a Group	0.7
TEA-1002	Team Building	Group Communication	0.9
TEA-1003	Team Building	Effective Collaboration	0.8
TEA-1004	Team Building	Life Stages of a Team	0.9
TEA-1005	Team Building	Meetings	0.8
TEA-1006	Team Building	Diversity	0.9
TEA-1007	Team Building	Creativity	0.8
TEA-1008	Team Building	Problem-Solving	1.0
TEA-1009	Team Building	Decision-Making	1.0
TEA-1010	Team Building	Conflict Management	1.4
TEA-1011	Team Building	Leadership	0.8
TEA-1012	Team Building	Virtual Groups	1.0
TOTAL HOURS			95.0