

## Bridge to Careers in Manufacturing

### Course Overview

The manufacturing industry employs millions of people and is continually seeking high-skilled workers. The Workforce Access *Bridge to Careers in Manufacturing* online course is aimed at helping learners develop an understanding of the industry-specific competencies needed for careers in manufacturing, and to build the academic and workplace skills needed for success in postsecondary or career training. Students are introduced to different jobs in the six sectors of the manufacturing industry:

- Production
- Manufacturing Production Process Development
- Maintenance, Installation, and Repair
- Quality Assurance
- Logistics and Inventory Control
- Health, Safety, and Environmental Assurance

### Learning Outcomes

While taking this course, students will learn to:

- Discuss the role of external and internal customers, stakeholders, and end users in the manufacturing process
- Explain the specific, common types of materials processing methods
- Describe materials used in manufacturing processes and their sources
- Identify and describe the role of planning in the manufacturing process, and how effective planning impacts workflow, inventory, and supply chain management
- Identify and describe the two basic production systems
- Identify and describe specific tools and pieces of equipment used in manufacturing
- Explain the role of maintenance practices in maintaining plant and process efficiency
- Identify the role of labeling and packaging in protecting both products and consumers
- Explain how finished products are prepared for distribution, and describe the role of quality assurance and continuous improvement
- Explain ways in which the manufacturing industry impacts the local and global environment
- Identify and describe safety factors in the workplace
- Develop reading for information, locating information, and applied mathematics skills contextualized to the manufacturing industry

### Modes of Course Delivery

The *Bridge to Careers in Manufacturing* course can be used as a core curriculum or as a supplement to enhance regular instruction. Because of this flexibility, the course can be delivered in a self-paced or a customized mode. Custom mode allows instructors to assign individual lessons and assessments and set the pace for the course.

### Pacing and Course Duration

Sample 10-week and 12-week pacing guides are provided in the Teacher Planning Guide. The pacing guides can be used as is or adapted to account for shorter or longer terms to suit individual needs. Each of the lessons requires approximately 40-50 minutes of study. Additional academic skill support lessons, discussion prompts, and writing activities can be used to enhance students' learning.

## Assessments and Reporting

Assessments for the course include interactive formative assessments within each lesson, as well as scored pretests and posttests for each lesson. Teachers and students can generate reports to show progress and mastery of industry and academic knowledge of skills.

## How to Access Workforce Access *Bridge to Careers in Manufacturing*

When you order *Bridge to Careers in Manufacturing*, you will access everything you need in the ConnectED Learning Management System, including the core lessons, academic skill support lessons, teacher planning guide, lesson plans, and other useful resources. For more information on this or other *Workforce Access* courses, please go to

[www.workforceaccess.com](http://www.workforceaccess.com).

## Table of Contents

### Introduction to Bridge to Careers in Manufacturing

#### Unit 1: Production Basics

Lesson 1.1: The Manufacturing Customer

Lesson 1.2: Production Basics

Lesson 1.3: Production Materials

#### Unit 2: Production Processes and Planning

Lesson 2.1: Production Processes

Lesson 2.2: Planning

Lesson 2.3: Managing Production Resources

#### Unit 3: Tools and Equipment

Lesson 3.1: Tool and Equipment Operation

Lesson 3.2: Using Tools and Equipment Safely

Lesson 3.3: Maintenance and Repair

#### Unit 4: Packaging and Distributing Products

Lesson 4.1: Packaging and Labeling

Lesson 4.2: Distributing Products

#### Unit 5: Managing and Improving Quality

Lesson 5.1: Quality

Lesson 5.2: Quality Inspections and Audits

Lesson 5.3: Eliminating Production Problems

#### Unit 6: Sustainable and Green Manufacturing

Lesson 6.1: Manufacturing and the Environment

Lesson 6.2: Benefits of Green and Sustainable Manufacturing

#### Unit 7: Workplace Safety

Lesson 7.1: Establishing Safety Consciousness in the Workplace

Lesson 7.2: Preventing and Responding to Safety Hazards