

Manufacturing Technology

OVERALL EXPECTATIONS:

By the end of this course, students will:

- D1.** demonstrate an understanding of and compliance with the health and safety legislation, standards, and practices that are essential to the safe operation of a manufacturing facility.

Specific Expectations:

By the end of this course, students will:

- D1.1** identify and explain the importance of the specific components of legislation and standards related to workplace safety in the manufacturing industry (e.g., Occupational Health and Safety Act [OHSA], Workplace Hazardous Materials Information System [WHMIS]) and the specific responsibilities of the relevant oversight/regulatory organizations (e.g., Workplace Safety and Insurance Board [WSIB], Industrial Accident Prevention Association [IAPA]);
- D1.2** demonstrate good housekeeping practices in the work environment (e.g., cleaning up spills and leaks, keeping areas clean and clear of obstructions, properly organizing tools and equipment);
- D1.3** handle materials safely and appropriately in compliance with the information included in the Material Safety Data Sheets (MSDS) from the Workplace Hazardous Materials Information System (WHMIS);
- D1.4** demonstrate an understanding of procedures to ensure safe and productive work practices in the manufacturing workplace (e.g., perform safety inspections and audits that include ergonomic considerations related to workshop layout and set-up, material handling, ease of movement, lighting, workstation set-up);
- D1.5** demonstrate the safe use of tools and equipment in compliance with safety manuals, instructions, and institutional requirements;
- D1.6** use proper ventilation and/or filtration systems to control air quality (e.g., to minimize the effects of welding fumes, plastic off-gassing, cutting-fluid misting, heat treating of metal);
- D1.7** use protective clothing and equipment as required to ensure their own and others' safety in the work environment.

Technological Safety Checklist

Manufacturing Technology	Comments
<ul style="list-style-type: none"> • Sufficient and appropriate personal protective equipment (PPE) such as safety glasses, hearing protection, shop coats, leather gloves or latex gloves for handling chemicals is available for all students. • PPE is in good condition (e.g., safety-glass lenses are not scratched or deformed). • Safety glasses are stored in an organized fashion (i.e., not left randomly in a bin). • All materials or chemicals that are stored in secondary containers are clearly identified, as per WHMIS requirements. • Appropriate safety posters or notices that remind students of the use of PPE, health and safety regulations, possible hazards, or safeguards and precautions are prominently displayed. • Good housekeeping practices are evident e.g., the facility is well-organized, there are no trip hazards, exits are clearly marked and clear of obstructions, the facility is clean and inviting, etc. • Compressed gasses and flammables are stored in separate facilities. • There are sufficient electrical outlets. Electrical outlets do not appear to be overloaded. • Oily rags are placed in metal, fire-rated containers. • Inspection notices on necessary equipment are accurate and up-to-date. • Gas bottles are securely stored and chained to prevent them from falling. Oxygen and acetylene are stored at least 10 feet apart. 	

Manufacturing Technology: Sample Student Safety Passport

Student's Name _____ Class and Year _____

Equipment	Date Competency Display	Student Signature	Teacher Signature
<p>The student safely assesses if electric, battery and pneumatic powered tools are in proper working condition and safe to use by ensuring that:</p> <ul style="list-style-type: none"> • the tool is disconnected from power source and switched "OFF" before assessing condition • cords, lines and hoses are free of frays or bulges • moving parts are properly lubricated • the air compressor is set to an appropriate pressure for tool being used • cutting tools are properly sharpened • regulators are properly inspected and in good condition. 			
Air Compressor			
Vertical Band Saw			
Horizontal Band Saw			
Drill Press			
Pedestal Grinder			
Bench Grinder			
Surface Grinder			
Lathe			
Vertical Mill			
Horizontal Mill			
Hack Saw			
MIG Welder			
TIG Welder			
Stick Welder			
Plasma Cutter			
Oxy Acetylene Torch			