

Manufacturing Processes Ohio Open Ed Collaborative

Using these materials

This site is a resource for faculty teaching Manufacturing Processes. In Ohio, Manufacturing Processes is a Transfer Assurance Guide (TAG) course number OET010 and a Career Technical Assurance Guide (CTAG) course number CTMET004.

The content is organized by the six learning outcomes listed in the TAGs. The instructors should copy the material they intend to use from this site into their own course site. The goal is that the material collected here is enough to replace a required textbook. Users of this content are encouraged to provide feedback and suggestions for improvement, including posting some additional material.

The content in this site is organized by Topics aligned with the TAG Outcomes. Modules are listed under each Topic. Here is a guide to the content:

Topic 1: Material Properties and Selection

- Module 1: Identifies the TAG Outcome and rubric.
- Module 2: Business Insights and Careers
 - Section 1: Introduction to Manufacturing and Careers. Content includes videos and documents about Manufacturing and Manufacturing Careers.
 - Section 2: Manufacturing Careers and History
 - Section 3: Quality Standards and Regulations.
 - Section 4: Manufacturing Careers Overview
- Module 3: Materials in Manufacturing
 - Section 1: Material Types, Selection, Properties, and Manufacturing. This includes detailed content about various materials and links to societies and projects related to materials.
- Module 4: Not Used
- Modules 5: Test Questions—some with answers and some without answers.

Topic 2: Manufacturing Processes

- Module 1: Identifies the TAG Outcome and rubric.
- Module 2: Business Insights and Careers (includes videos)
 - Section 1: Manufacturing Careers, skills required, Ohio careers and videos.
 - Section 2: Inventory Control
 - Section 3: Product Mix and Make vs Buy
 - Section 4: Process Selection
 - Section 5; Just in Time and Lean
- Module 3: Manufacturing Processes
 - Section 1: Multiple Manufacturing Processes
 - Section 2: Manufacturing Course—OpenLearn
 - Section 3: Courseware from MIT
- Module 4: Excel Workbooks

- Section 1: Bent Tube Process Analysis and Make or Buy
- Section 2: Break Even Analysis
- Section 3: Forecasting
- Modules 5: Test Questions—some with answers and some without answers.

Topic 3: Fabrication Processes

- Module 1: Identifies the TAG Outcome and rubric.
- Module 2: Business Insights and Careers (includes videos)
 - Section 1: Material requirements Planning (MRP)
 - Section 2: Communications
 - Section 3: Supplier Selection and Management
 - Section 4: Process Flow Charts and Selection
- Module 3: Fabrication Processes
 - Section 1: Welding, Adhesives, and Fasteners
 - Section 2: Adhesives
 - Section 3: Welding
- Module 4: Excel Workbooks
 - Section 1: MRP
- Modules 5: Test Questions—some with answers and some without answers.

Topic 4: Process Parameters and Production Efficiencies

- Module 1: Identifies the TAG Outcome and rubric.
- Module 2: Business Insights and Careers
 - Section 1: Team Work
- Module 3: Process Parameters
 - Section 1: Speeds and Feeds
 - Section 2: Material Removal Processes (Turning, Milling, and Drilling)
 - Section 3: Welding
- Module 4: Excel Workbooks
 - Section 1: Material Removal Calculations
- Modules 5: Test Questions—some with answers and some without answers

Topic 5: Safety Procedures and Methods

- Module 1: Identifies the TAG Outcome and rubric.
- Module 2: Safety
 - Section 1: Multiple Safety Topics
 - Safety Videos
- Module 3: Safety Discussions
 - Section 1: Discussion Starters
 - Section 2: Personal Protective Equipment Assignment
- Module 4: Safety Assignments
 - Section 1: Safety Communication Assignments
 - Section 2: Personal Protective Equipment Assignment
- Modules 5: Test Questions—without answers

Topic 6: Measurement Instruments and Precision Measurement

- Module 1: Identifies the TAG Outcome and rubric.
- Module 2: Quality in Industry (video)
 - Section 1: Measurement Instruments and Quality
- Module 3: Measurement and Quality
 - Section 1: Using Precision Measuring Instruments
 - Section 2: Quality Control
 - Section 3: Inspection and Assembly
 - Section 4: Mating Parts
- Module 4: Excel Workbooks
 - Section 1: Measuring, Tolerance, and Fits
- Modules 5: Test Questions— some with answers and some without answers

There is more content here than is likely to be covered in a single course. The expectation is that faculty will use only the material most aligned to their course. The order of coverage will also vary. Consider using this material in lieu of having students purchase a textbook.

Please consider sharing your experience with using this material with the developers. Through your feedback and participation, this material can be continually improved.