MANUFACTURING PROCESSES & MATERIALS PLAYLIST

Overview of the processes, tools, and techniques.

Give your students or staff the foundational knowledge needed to perform in manufacturing roles across myriad industries. This on-the-job resource is perfect for anyone working in a technical department of a manufacturing company regardless of education, experience, and skill level. The playlist maps video content relevant to individual chapters from the book, *Manufacturing Processes & Materials*, Fifth Edition.

Preassembled playlists pub the right content at your fingertips.

Knowledge Edge® gives you online access to thousands of ebooks, training videos, and technical papers from respected subject matter experts. Preassembled playlists are one way to easily tap into the vast resources of Knowledge Edge and manage the content to support your goals. We've selected relevant materials on the most popular topics and organized them into playlists that your students or staff can access 24/7. You can turn the playlists on or off and assign due dates. You can also customize playlists for any topic by adding or removing additional content in Knowledge Edge.

**CHAPTERS AND RELATED VIDEO PROGRAMS**

Chapter 1: Manufacturing Foundations
- Computer Numerical Control
- Customer-Focused Manufacturing
- Flexible Small Lot Production for JIT
- High-Speed Machining
- Kanban
- Lean Manufacturing at Miller SQA
- Milling and Machining Centers

Chapter 2: The Competitive Challenge in Manufacturing
- Computer Numerical Control
- Customer-Focused Manufacturing
- Flexible Small Lot Production for JIT
- High-Speed Machining
- Lean Manufacturing at Miller SQA
- Milling and Machining Centers

Chapter 3: Material Properties and Testing
- Heat Treating
- Mechanical and Non-Destructive

Chapter 4: Iron and Steel
- Heat Treating

Chapter 5: Nonferrous Metals and Alloys
- Cutting Tool Materials
- Heat Treating
- Tool Materials

Chapter 6: Enhancing Material Properties
- Cutting Tool Materials
- Heat Treating

Chapter 7: Nonmetallic Materials
- Composites Post-Fabrication and Joining
- Compression Molding
- Plastic Blow Molding
- Plastic Injection Molding
- Plastics Machining and Assembly

Chapter 8: Composites
- Composites Materials
- Composites Post Fabrication and Joining
- Compression Molding
- Filament Winding
- Liquid Molding
- Manual Composite Layup and Spray Up
- Pultrusion

Chapter 9: Material Properties and Testing
- Casting
- Die Casting

Chapter 10: Metal Casting Reusable Molds
- Casting
- Die Casting

Chapter 11: Powder Metallurgy
- Powder Metallurgy

Chapter 12: Hot and Cold Working of Metals
- Casting
- Extrusion Processes
- Forging
- Rapid Casting
CHAPTERS AND RELATED VIDEO PROGRAMS

Chapter 13: Metal Shearing and Forming
- Cutting Tool Geometries
- Cutting Tool Materials
- Forging
- Hydroforming
- Punch Presses
- Roll Forming
- Sheet Metal Shearing and Bending
- Sheet Metal Stamping Dies and Processes
- Sheet Metal Stamping Presses
- Tube Bending

Chapter 14: Welding Processes
- Advanced Robotic Welding
- Welding
- Chapter 15: Other Cutting and Joining Processes
- Brazing and Soldering
- Electrical Discharge Machining
- Fastening and Assembly
- Plastics Machining and Assembly
- Thermal and Abrasive Waterjet Cutting

Chapter 16: Measurement and Gaging
- Gaging and Inspection Tool Design
- Measurement and Gaging

Chapter 17: How Metals are Machined
- Cutting Tool Geometries
- Cutting Tool Materials
- Metal Cutting Fluids

Chapter 18: Turning, Boring, and Facing
- Cutting Tool Design
- Turning and the Lathe

Chapter 19: Process Planning and Cost Evaluation
- Design for Manufacture and Assembly (DMFA)

Chapter 20: Drilling and Allied Operations
- Holemaking

Chapter 21: Milling
- Milling and Machining Centers
- Workholding

Chapter 22: Broaching and Sawing
- Cutting Tool Design
- Gear and Gear Manufacturing

Chapter 23: Abrasives, Grinding Wheels, and Grinding Operations
- Deburring Processes
- Grinding

Chapter 24: Grinding Machines and Methods
- Deburring Processes
- Grinding

Chapter 25: Other Surface Enhancement Processes
- Painting and Powder Coating
- Plastics Finishing
- Plating and Surface Coatings

Chapter 26: Nontraditional Manufacturing Processes
- Electrical Discharge Machining
- Thermal and Abrasive Waterjet Cutting Processes

Chapter 27: Thread and Gear Manufacturing
- Gears and Gear Manufacturing
- Threading

Chapter 28: Manufacturing Systems
- Direct Metal Manufacturing
- Medical Applications of Rapid Prototyping
- Rapid Casting
- Rapid Injection Mold Tooling
- Rapid Manufacturing
- Rapid Prototyping
- Rapid Tooling Design