intelitek

Foundation Skills

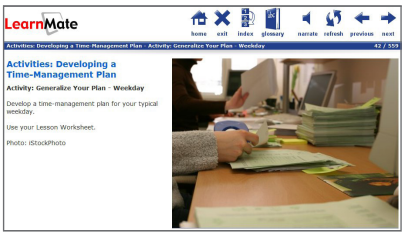
CERTIFIED MANUFACTURING ASSOCIATE

The Foundation Skills Program provides 100% virtual courses delivered on-line, accessible anywhere, anytime. With online simulations, computer-based assessments and robust activities, students obtain validated skills essential to mechatronics & maintenance careers. Along with these basic skills, Foundations courses also focus on 21st Century skills like critical thinking, problem solving & collaboration skills.

Foundations Program Courses Include:

Employability

15 hours of **virtual** instruction.



Developed in conjunction with career skills experts at SkillsUSA®, Employability delivers 21st Century career skills that ensure success in the workforce. Students develop essential qualities such as a positive attitude, communication skills, leadership skills, and work ethics.

Course Outline

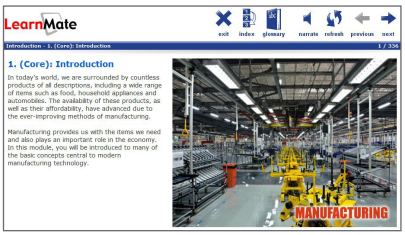
- Time-Management Techniques
- Personal Qualities Desirable for the Workplace
- Interpersonal Communication
- Conflict Resolution
- Teamwork
- Problem-Solving Techniques & Decision-Making Skills
- Proper Business & Personal Ethics
- Business Etiquette & Ethical Computer Behavior
- Employer-Employee Relationships
- Proper Communication with Diverse Populations
- Career Goals
- Resumés & Cover Letters
- Job Applications
- Potential Employer Interviews
- Interviewing Skills

Materials

- Employability, LearnMate course, Virtual

Introduction to Manufacturing

15 hours of **virtual** instruction.



Introduction to Manufacturing provides students a comprehensive overview of principles, processes and career choices in manufacturing. Hands-on activities in career seeking and planning a manufacturing company culminate in a capstone project in which students follow all the steps of the manufacturing process to produce a product.

Course Outline

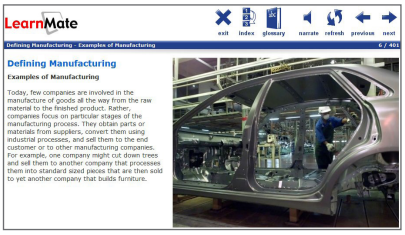
- Careers in Manufacturing
- Seeking a Manufacturing Career
- The Manufacturing Company
- Planning & Staffing a Manufacturing Company
- Manufacturing Processes
- Computers in Manufacturing
- Automation in Manufacturing
- The Arrow Plane

Materials

- Intro to Advanced Manufacturing, LearnMate course, Virtual

Introduction to Lean Manufacturing

15 hours of **virtual** instruction.



Lean Manufacturing explores the principles and techniques involved in lean manufacturing including minimizing waste in production, improving work flow in industrial processes.

Course Outline

- Definition Lean Manufacturing
- Understanding Waste
- Designing the Manufacturing Workplace
- Designing Lean Production
- Processes (1) – Concept
- Designing Lean Production
- Processes (2) – Method
- Designing a Lean Production
- Scheduling System
- Problem Solving Tools

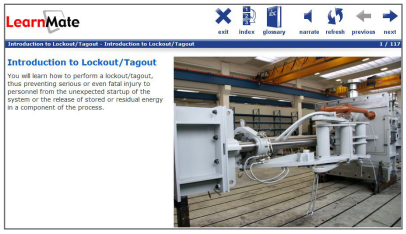
Materials

- Lean Manufacturing, LearnMate course, Virtual

Foundation Skills (continued)

Lock Out Tag Out

15 hours of **virtual** instruction.



Industrial Safety : Lockout/Tagout delivers critical skills for creating and maintaining a safe work environment.

Course Outline

- Acquiring Lockout/Tagout Basics
- Attaching Lockout Devices
- Completing & Attaching Tagout Devices
- Conducting an Energy Control Analysis
- Performing Lockout/Tagout
- Performing Lockout/Tagout Release

Materials

- Industrial Safety: Lockout/Tagout, LearnMate course, Virtual

Lubrication for Technicians

15 hours of **virtual** instruction.

Lubrication for Technicians conveys skills-based curriculum through virtual and hands-on activities.

Course Outline

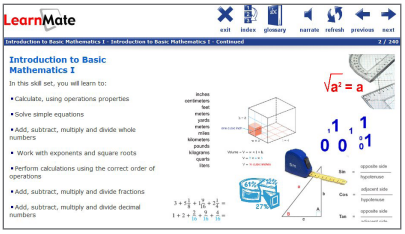
- Applying Lubrication Fundamentals
- Identifying Lubrication Terms
- Identifying Lubricating Oils
- Identifying General Purpose Greases
- Identifying Special Purpose Greases
- Applying Lubricating Oils
- Applying Lubricating Greases
- Identifying Bearing Lubrication Needs
- Setting Up a Lubrication Schedule
- Selecting Synthetic Lubricants
- Using Grease Guns
- Packing Bearings
- Using Grease Lubricators
- Using Drop Feed Oilers
- Using Electric Chain Oilers

Materials

- Lubrication for Technicians, LearnMate course, Virtual

Math for Technicians I

15 hours of **virtual** instruction.



Mathematics for Technicians I conveys skills-based math curriculum through nine virtual activities. Students gain the fundamental math skills needed for working in a variety of career and industrial environments.

Course Outline

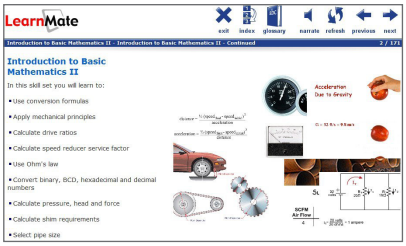
- Working with Arithmetic & Algebra
- Working with Whole Numbers
- Working with Fractions
- Working with Decimals
- Working with Percentages
- Working with Ratios & Proportions
- Working with Systems of Measurement
- Working with Geometry
- Working with Trigonometry

Materials

- Mathematics for Technicians 1, LearnMate course, Virtual

Math for Technicians II

15 hours of **virtual** instruction.



Mathematics for Technicians II applies advanced mathematics concepts to everyday tasks. Through interactive activities students learn about drive ratios, Ohm's Law, mechanical principles, and how these concepts apply in the engineering and industrial environments.

Course Outline

- Working with Conversion Formulas
- Applying Mechanical Principles
- Calculating Drive Ratios
- Calculating Speed Reducer Service Factor
- Using Ohm's Law in Series & Parallel Circuits
- Converting Binary, Binary Coded
- Decimal (BCD), Hexadecimal & Decimal Numbers
- Calculating Pressure, Force, Head & Flow
- Calculating Shim Requirements
- Selecting Pipe Size

Materials

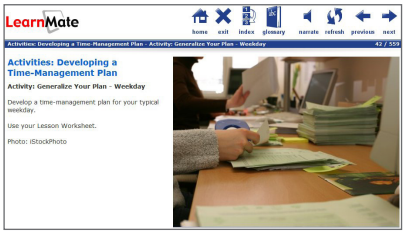
- Mathematics for Technicians 2, LearnMate course, Virtual

Prerequisite

- Mathematics for Technicians I

Blueprint Reading

15 hours of **virtual** instruction.



Blueprint Reading delivers skills-based curriculum through virtual activities. Students learn all aspects of reading and interpreting blueprints in engineering and industrial environments, including views, tolerances, cutting planes, thread dimensions, and welding symbols.

Course Outline

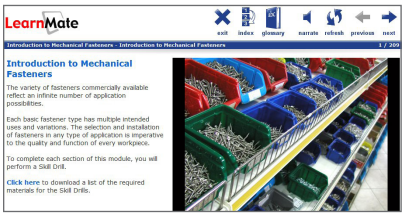
- Identifying Lines & their Functions
- Single, Multiple & Auxiliary View
- Reading & Locating Blueprint Dimensions
- Determining Tolerances
- Identifying Thread Dimensions
- Identifying Tapers & Machine Surfaces
- Cutting Plane & Sections
- Geometric Dimensioning, Wear Limits & Assembly Drawings
- Identifying Welding Symbols
- Reading Plot Plans
- Reading Footing, Foundation & Floor Plans
- Reading Reinforced Concrete & Structural Steel Prints

Materials

- Mechanical Blueprint Reading, LearnMate course, Virtual

Mechanical Fasteners

15 hours of **lab** and **virtual** instruction.



Mechanical Fasteners may be taught as a virtual course, delivered entirely online with interactive activities, or as a blended course with both virtual and hardware-based activities.

Course Outline

- Screws & Bolts
- Threaded Fastener Selection
- Thread Standards
- Creating & Repairing Threads
- Nuts
- Torque Wrenches
- Bolt Extractor
- Washers
- Rivets
- Adhesives
- Hook & Loop Fasteners
- Cable Ties

Materials

- Mechanical Fasteners, LearnMate course, Virtual

Optional Hardware

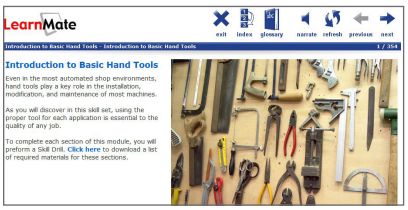
- BA04 hardware-only package (optional)*

*activity consumables not included

- ◊ Allen wrench set
- ◊ 12" steel rule
- ◊ 25' tape measure
- ◊ 6" Dial caliper
- ◊ Feeler gauge set
- ◊ Combination square with right/center/angle heads
- ◊ Utility knife, retractable
- ◊ Scribe
- ◊ 6" Bench vise
- ◊ 16 oz. Ball-peen hammer
- ◊ 3/8" cold chisel
- ◊ 12" hacksaw frame
- ◊ 12" hacksaw blade
- ◊ Bull nosed pliers
- ◊ Straight tin snips
- ◊ Fine, flat metal file
- ◊ Ratcheting screwdriver with bits
- ◊ Combination wrench set
- ◊ Socket set with 3/8" driver

Hand Tools

15 hours of **lab** and **virtual**.



Hand tools play a key role in the everyday tasks of engineers, electrical technicians and other skilled professionals.

Course Outline

- Practicing Shop Safety
- Reading Rulers & Tape Measures
- Using Calipers & Feeler Gauges
- Working with Squares & Levels
- Cutting with Knives
- Scribing & Punching Materials
- Using Work Holding Devices
- Using Hammers
- Using Chisels
- Cutting with Saws
- Working with Pliers
- Identifying & Using Cutters
- Filing & Deburring with Hand Tools
- Working with Drivers
- Identifying & Using Hex Keys
- Identifying & Using Wrenches
- Identifying & Using Socket & Torque Wrenches

Materials

- Hand Tools, LearnMate course, Virtual

Optional Hardware

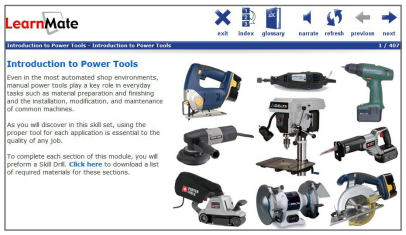
- BA05 hardware-only package (optional)*

*activity consumables not included

- ◊ Screw pitch gauge
- ◊ Thread gauge
- ◊ Nut & bolt gauge
- ◊ Tap & die set
- ◊ Tapping fluid, 4 oz.
- ◊ Torque wrench, 3/8" drive
- ◊ Socket set
- ◊ Bolt extractor set
- ◊ Rivet tool kit with rivets
- ◊ Thread locker
- ◊ Hook & loop strap, 12", 10-pack
- ◊ Cable tie, 8", 100-pack
- ◊ Cable tie, 11", 100-pack
- ◊ Fastener assortment:
  - 1/4"-20 flanged nut (5)
  - Belleville washer (5)
  - 1/4-20 wing nut (5)
  - M6-16 BHCS (5)
  - 3/8-16 x 1.5" FHCS (5)
  - 3/8-16 x 1.5" HHCS (5)
  - 10-32 x 3/4" SHCS (15)
  - 1/4"-20 x 1" SHCS (15)
  - M8 x 16 SHCS (5)
  - 4-40 nylon hex nut (10)
  - 3/8-24 Nylon locking nut (5)
  - M8 black hex nut (5)
  - 1/4-20 Keps nut (5)
  - 10-32 x 5/16" SSS, cup point (10)
  - 1/4" washer (5)
  - 7/16" flat washer (5)
  - 3/8" stainless lock washer (5)
  - 3/8" internal tooth lock washer (5)
  - Plastic fastener organizer case

Power Tools

15 hours of **lab** and **virtual** instruction.



Power Tools delivers twelve skills-based activities, in which students learn all aspects of using power tools, and the role they play in the everyday tasks of skilled professionals.

Course Outline

- Practicing Shop Safety
- Operating a Power Drill
- Setting Up & Operating a Drill Press
- Operating a Rotary Tool
- Setting Up & Operating a Jigsaw
- Setting Up & Operating a Reciprocating Saw
- Setting Up & Operating a Circular Saw
- Adjusting & Operating a Table Saw
- Setting Up & Operating a Bandsaw
- Setting Up & Operating a Sander
- Adjusting & Operating a Bench Grinder
- Adjusting & Operating an Angle Grinder

Materials

- Power Tools, LearnMate course, Virtual

Optional Hardware

- BA06 hardware-only package (optional)*

*activity consumables not included

- ◊ Power drill
- ◊ 1/4" bi-metal twist drill bit
- ◊ Drill press
- ◊ 1/4" bi-metal twist drill bit for drill press
- ◊ Rotary tool
- ◊ Rotary tool accessory kit
- ◊ Jigsaw
- ◊ Assorted jigsaw blades
- ◊ Reciprocating saw
- ◊ Assorted reciprocating saw blades
- ◊ Circular saw
- ◊ Assorted circular saw blades
- ◊ Table saw
- ◊ Assorted table saw blades
- ◊ Table saw rip fence
- ◊ Table saw miter gauge
- ◊ Push stick
- ◊ Bandsaw
- ◊ Bandsaw rip fence
- ◊ Bandsaw miter gauge
- ◊ Bi-metal bandsaw blade
- ◊ Stationary belt sander
- ◊ Assorted sanding belts
- ◊ Benchtop grinder
- ◊ Assorted grinding wheels
- ◊ Angle grinder
- ◊ Assorted grinding disks

Foundation Skills (continued)

Mechanical Measurement & Quality Control

Imperial Bundle including: 15 hours of **lab** and **virtual** instruction.

Mechanical Measurement and Quality Control delivers a solid foundation in precision measuring principles and statistical analysis.

Course Outline

- Accuracy, Precision & Measurement Tools
- Units of Measurement & Conversion
- Fractions, Decimals & Rounding
- Scaled Measurement Tools
- Vernier, Dial & Digital Calipers
- Micrometers
- Height Gauges & Dial Indicators
- Fixed Gauges
- Transfer Measurement Tools
- Statistical Analysis
- Statistical Process Control
- Nominal Dimensions & Tolerance
- Parts Inspection & Inspection Reports

Materials

- Mechanical Measurement & Quality Control, LearnMate course, Virtual

Optional Hardware

- Precision Measurement Tools Kit:
  - Multiple rulers
  - Tape measure
  - Dial caliper
  - Electronic digital caliper
  - Micrometer
  - Feeler gauge set
  - Inside and outside calipers
  - Dial indicator and attachments
  - Height gauge
  - Protractor
  - 5 pce gauge block set
  - Educational Charts & Cards
  - Educational booklets
  - Granite surface plate
  - 12 plug gauge pins
  - Vernier caliper
  - Ground-slotted angle plate
  - Cable and adapter and a carrying case

Ordering Information

Foundations Skills Bundle

Foundations Skills Virtual Content	JM-FOUN-SKILS

Foundations Skills Individual Courses

LM7 Content, Blue Print Reading	77-BA02-0001
LM7 Content, Fasteners	77-BA04-0001
LM7 Content, Hand Tools	77-BA05-0001
LM7 Content, Lubrication for Technicians	77-BA03-0001
LM7 Content, Math for Technicians I	77-BA01A-0001
LM7 Content, Math For Technicians II	77-BA01B-0001
LM7 Content, Power Tools	77-BA06-0001
LM7 Content, Safety, Lock Out/Tag Out	77-LOTO-0000
LM7 Content, Virtual, Employability	77-3097-0000
LM7 Content, Virtual, Intro to Advanced Manufacturing	77-3096-0000
LM7 Content, Virtual, Lean Manufacturing	77-3109-0000
LM7 Content, Lab/Virtual, MMQC	77-8014-0001
LM7 Content, Lab/Virtual, MMQC (Metric)	77-8014-0002

Foundations Skills Lab Materials

Fasteners Lab Accessories	10-BA04-0000
Hand Tools Lab Accessories	10-BA05-0000
Power Tools Lab Accessories	10-BA06-0000
MMQC Lab Accessories	10-9410-0000

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