WHAT IS METALFORM EDU?

Our industry faces many workforce development challenges—finding and assessing candidates, onboarding new employees, and upskilling existing talent at all levels, from the shop to the office.

**METALFORM EDU** is a great supplement, or start, to your company’s training program. This flexible, comprehensive, convenient and affordable online training system is accessible anytime, anywhere with an internet connection. **METALFORM EDU** helps increase employees’ productivity, skills and engagement by providing them with access to modern, interactive courses based on individual, department and company-wide needs.

PMA made a significant investment in developing modern online courses, in partnership with adult learning and development experts and instructional designers. All courses include a study guide, interactive content with narration, simulations and activities, and a final graded assessment. PMA also ensured that our technical courses align to the appropriate NIMS Skills Standards.

Our **METALFORMING LICENSES** (English and Spanish are available) provide access to PMA-exclusive content on press shop operations, die setting, lockout/tagout, metal spinning and more.

The **FULL LIBRARY LICENSES** include access to all of the PMA-exclusive content as well as 520+ courses in communication, customer service, math, time management, health and safety, lean, quality, six sigma, CNC machining, tooling, welding, measurement and more.

**Overcome the manufacturing skills gap by enhancing your training program with METALFORM EDU.**
OUR OPERATORS ARE VERY IMPRESSED WITH THE QUALITY OF TRAINING PROVIDED IN METALFORM EDU...WE CAN SEE A DIFFERENCE IN THOSE WHO HAVE SUCCESSFULLY COMPLETED THE COURSES."

- Stephanie Ray, HR Manager, Henderson Stamping and Production, Inc.
The Metalforming License includes all 37 courses developed by PMA specifically for the metalforming industry. Each license can be assigned to a single employee.

**Courses included in the Metalforming License are:**

- Press Shop Operations
- Die Setting
- Metal Spinning
- Lockout/Tagout
- Economics for Manufacturing

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Each Full Library License provides a single employee access to more than 550 courses, including all courses in the Metalforming License, as well as some 520+ other courses in areas such as math, communications, precision measurement, blueprint reading, quality, safety and more.

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**SPANISH METALFORMING LICENSE**

Each Spanish Metalforming License includes access for a single employee to 32 courses developed specifically for the metalforming industry by PMA, and translated to Spanish.

**Courses included in the Spanish Metalforming License are:**

- Press Shop Operations
- Die Setting
- Lockout/Tagout

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**OCCUPATIONAL APTITUDE AND KNOWLEDGE ASSESSMENT**

The 60-item, multiple-choice test assesses mechanical aptitude, spatial and mathematical reasoning, measurement, use of communications and information, and the understanding of basic industry knowledge and behaviors of applicants. This assessment is perfect for screening candidates as well as identifying strengths and opportunities for existing employees. Instructions, scoring templates, cut score recommendations, diagnostics and security practices are provided for two assessment versions.

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PMA’s METALFORM EDU catalog includes nearly 30 recommended learning paths focused on specific functional roles and/or content areas in a manufacturing environment. The catalog includes recommendations for required and elective courses per learning path that you can assign your users, depending on your company’s needs, and employees’ prior experience and skills.

**ADVANCED MANUFACTURING TECHNICIAN**
These two learning paths include courses on blueprint reading, precision measurement, quality, mathematics for manufacturing, safety and machining.

**COMPUTER NUMERICAL CONTROL (CNC)**
The two CNC Fundamentals learning paths contain the fundamental courses required to operate CNC machines, including blueprint reading, safety, geometry, metals, precision measurement tools, machining, threads, taps and dies, cutting tools and lubricants.

The two CNC Machining and Lathe learning paths include more advanced work with blueprints, setting up and operating CNC machines and lathes, loading and monitoring programs, monitoring the feed rate and speed of machines, and measuring, examining and testing completed products for defects. They also cover related content such as metal and materials, geometry, safety and problem solving.

**CORE MATH SKILLS FOR MANUFACTURING**
This learning path includes content in basic arithmetic including basic math, arithmetic operations, numbers and the number line, fractions, decimals and positive and negative numbers.

**CORE MEASUREMENT SKILLS FOR MANUFACTURING**
This learning path has courses on virtually all measurement devices used in a manufacturing environment.

**DIE SETTER**
PMA’s die setter training is organized into two learning paths, both including PMA’s lockout/tagout courses.

» Die Setter 1 introduces different types of clamping systems, die assembly removal and installation processes, how to determine and properly set press shut height, and how to set and adjust common types of straighteners and uncoiling equipment.

» Die Setter 2 introduces air operated slide feeds, grip feeds, servo roll feeds, and mechanical roll feeds. It also addresses how to thread the die, prepare the press for production and how to make the first hit.

**ENGINEERING AND DESIGN**
These two learning paths provide core knowledge to work with drafting and CAD programs, including blueprint reading fundamentals, GD&T, geometry and technical writing. CAD software not included.

**GEOMETRIC DIMENSIONING & TOLERANCING (GD&T)**
This learning path starts with the basics of terms and symbols and datums, and moves on to more complex topics such as orientation, location and runout tolerances.

**INTRODUCTION TO ADVANCED MANUFACTURING**
This learning path immerses learners in the fundamentals of manufacturing procedures and processes. Courses include introductory-level content in industrial automation, blueprint reading, lean manufacturing, logistics, precision instruments, the engineering process and more.
MAINTENANCE TECHNICIAN
These three learning paths prepare employees for roles in mechatronics and industrial automation, exposing them to pneumatics, hydraulics, robotics, electronics, PLC and process controls.

NEW HIRE ONBOARDING
This learning path provides all you need to train a new hire consistently, on-demand, without tying up key staff. Courses include critical content on safety, precision measurement tools, introduction to metal stamping, quality and more.

NON-DESTRUCTIVE EXAMINATION
This learning path provides an overview of key NDE concepts, including the NDE process, methods, personnel qualification, visual testing, product standards and more.

PRESS TECHNICIAN
PMA’s Press Technician training is organized into three learning paths, all including PMA’s lockout/tagout courses:
» Press Technician 1 prepares new operators to safely use hand-operated presses, stack and inspect parts, and monitor progressive die operations.
» Press Technician 2 prepares employees to run hand transfer and automatic presses, including understanding and operating coil handling, straightening and feeding equipment.
» Press Technician 3 prepares employees to run presses without assistance and supervise other operators.

QUALITY ASSURANCE TECHNICIAN
This learning path covers critical content in quality, blueprint reading, GD&T, Statistical Process Control (SPC) and more. Just as important in this role is the ability to work well with people, and as such, content also includes conflict resolution and management, communication skills and teamwork.

SIX SIGMA GREEN BELT
This learning path teaches employees to understand, interpret and use the core concepts of Six Sigma.

STATISTICAL PROCESS CONTROL
This learning path shows employees how to monitor and inspect processes, with courses in probability and variation, control charts, problem solving and more.

SUPERVISORY SKILLS
Leader, manager, supervisor, team leader—no matter the official title, supervisors are expected to get the job done through delegation. Management success depends upon a supervisor’s abilities as a coach, team builder, time and project manager, and employee motivator and disciplinarian. This learning path provides the courses current and future leaders and managers will need for success.

WORKPLACE SAFETY
This learning path includes courses on safe work practices, personal protective equipment, emergency preparedness, OSHA compliance and more. All courses in the learning path are configured as electives, enabling you to customize to best fit your company’s needs.

For more information on METALFORM EDU’s learning paths, visit pma.org/METALFORMEDU/resources.asp#Learning-Paths
COURSE OVERVIEW

PMA-DEVELOPED

- Press Shop Operations
  - PMA-1001 Introduction to Metal Stamping
  - PMA-1002 Stamping Presses
  - PMA-1003 Press Specifications
  - PMA-1004 Press Controls
  - PMA-1005 Modes of Operation
  - PMA-1006 Safeguarding
  - PMA-1007 Die Assembly
  - PMA-1008 Basic Die Operations
  - PMA-1009 Indicators of Improper Die Operations
  - PMA-1010 Operating the Stamping Press
  - PMA-1011 Operating Coil-Fed Automatic Press Lines
  - PMA-1012 Safe Coil Handling
  - PMA-1013 Loading Coils
  - PMA-1014 Straightening the Coil
  - PMA-1015 Feeding the Coils
  - PMA-1016 Dimensional Measuring
  - PMA-1017 Attribute Gaging and Checking Fixtures

- Die Setting
  - PMA-1018 Standardized Inspection Methods and SPC
  - PMA-2001 Die Fastening and Clamping Systems
  - PMA-2002 Removing the Die Assembly
  - PMA-2003 Press Shut Height
  - PMA-2004 Die Assembly Installation
  - PMA-2005 Setting Up Uncoiling and Straightening Equipment
  - PMA-2006 Air-Operated Slide Feeds
  - PMA-2007 Grip Feeds
  - PMA-2008 Servo Roll Feeds
  - PMA-2009 Mechanical Roll Feeds
  - PMA-2010 Threading the Die
  - PMA-2011 Preparing the Press for Production
  - PMA-2012 Trial Stamping – First Piece Approval

- Metal Spinning
  - PMA-4001 Introduction to Metal Spinning
  - PMA-4002 Operating the Spinning Machine

- Lockout/Tagout
  - PMA-LOTO1 Introduction to Lockout Tagout
  - PMA-LOTO2 Lockout Tagout Procedures

- Economics for Manufacturing
  - PMA-ECON1 Economics At Home and At Work
  - PMA-ECON2 Business and Profitability
  - PMA-ECON3 Competition

CNC MACHINING

- Introduction to Machining
- CNC Horizontal Lathe
- CNC Vertical Machining Center
- CNC Machine Lubricants
- CNC Horizontal Lathe Applications
- CNC Lathe Programs
- CNC Vertical Machining Center Applications
- CNC Machining Center Programs

COMMUNICATION SKILLS

- Interpersonal Communications
- Conflict Resolution
- Technical Writing

COMPOSITES

CUSTOMER SERVICE

CUTTING TOOLS FOR METALWORKING

ELECTRICAL

- Introduction to Electricity
- DC Electricity
- AC Electricity
- Solid State Electricity
- Introduction to Electric Motors
- Electrical Connectors
- Fiber Optics
- Sensor Technology
- Electrical Hand Tools
- Electrical Measurement Conversion
- Electrical Resistance Test Equipment
- Crimping Terminals and Splices
- Assembly of Coaxial Connectors

ENGINEERING DRAWINGS

- Blueprint Reading Fundamentals
- Blueprints and Pictures Sheets for Aerospace
- Advanced Blueprint Reading
- Aerospace Wire Installation Drawings
- Composite Engineering Drawings and Instructions
- Geometric Dimensioning and Tolerance (GD&T)

FASTENERS
HAND TOOLS

HEALTH & SAFETY SKILLS
• Introduction to Safety
• Personal Protective Equipment Safety
• Hazardous Material Safety
• Workplace Safety
• Electrical and Fire Safety
• Material Handling Safety
• Tool and Machine Safety

HYDRAULICS
• Introduction to Hydraulics
• Components of a Hydraulics System

LEAN MANUFACTURING
• Lean Principles
• Introduction to Lean Manufacturing
• Workplace Organization

LOGISTICS

MANUFACTURING
• Introduction to Manufacturing
• Manufacturing and Logistics Game
• Engineering Processes
• Manufacturing Paperwork

MATERIALS
• Metals and Materials

MATHEMATICS
• Basic Math
• Fractions
• Decimals
• Positive and Negative Numbers
• Cartesian Coordinates
• The Metric System
• Geometry
• Time
• Money

MEASUREMENT
• Precision Measurement Tools
• Fastener Inspection Gauges
• Weld Gauges

MICROSOFT OFFICE

NON-DESTRUCTIVE EXAMINATION (NDE)
• Introduction to Non-Destructive Examination Commercial
• Introduction to Non-Destructive Examination
• Visual Testing Commercial

PERSONAL FINANCES

PNEUMATICS
• Introduction to Pneumatics
• Components of a Pneumatic System
• Pneumatic Applications

POWER TOOLS
• Hand Power Tools
• Stationary Power Tools

PROGRAMMABLE LOGIC CONTROLLERS

QUALITY
• Quality Systems
• Introduction to Statistical Process Control
• Advanced Statistical Process Control

ROBOTICS

SIX SIGMA
• Six Sigma and the Organization
• Six Sigma Define
• Six Sigma Measure
• Six Sigma Analyze
• Six Sigma Improve and Control

STUDY SKILLS

TEAM BUILDING
• Group Dynamics
• Building Effective Teams
• Teamwork and Training

TIME MANAGEMENT

TOOL MAKING
• Tooling Capstone Project

WELDING
• Welding Processes
• Welding for NDE Commercial
METALFORM EDU TEAM

Overcome the manufacturing skills gap by enhancing your training program with METALFORM EDU.

STACEY SCHROEDER
WORKFORCE DEVELOPMENT DIRECTOR, PMA
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Prior to joining PMA, Stacey served as the director of workforce development for the National Tooling and Machining Association, where she led the organization’s online training programs, secured national apprenticeship program sponsorship status, and developed and launched a national pre-apprenticeship program. She also has experience working for several well-known manufacturing companies, including most recently Swagelok, where she was the global learning and development manager.

Stacey has a Bachelor’s of Science degree in Materials Science Engineering and a Master’s of Science degree in Manufacturing Management from Michigan State University, an MBA from Ohio State University focusing on Operations and Logistics, as well as certificates in Lean Six Sigma and Adult Learning & Development.

ERIN RIFFLE
WORKFORCE DEVELOPMENT AND METALFORM EDU LEAD, PMA
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Erin is the workforce development and METALFORM EDU lead at the Precision Metalforming Association. Previously, she worked with the PMA Educational Foundation as a development associate. Erin has a Master’s degree in nonprofit administration and has a passion for education and training.

PETER ULINTZ
TECHNICAL DIRECTOR, PMA
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Peter has worked in the metal stamping and tool and die industries since 1978. He worked for Anchor Manufacturing Group in Cleveland, OH, for 28 years prior to joining PMA in 2015 as technical director. His background includes tool and die making, tool engineering, process engineering, engineering management and product development. Peter speaks regularly at PMA technical seminars and conferences. He also is president of the North American Deep Drawing Research Group, and is a columnist for Tooling by Design in MetalForming magazine.
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