

Westmoreland County Community College
WORKFORCE DEVELOPMENT

Online Technical Training Catalog



The Workforce Development Department of Westmoreland County Community College is pleased to offer an expansion to our extensive corporate training course offerings. Utilizing Amatrol's eLearning platform that includes start-of-the-art visual simulators and stunning graphics, students have the flexibility to learn in a 24/7 environment from a location that is most convenient for them.

Begin a course on your schedule! Tuition includes a 6-month access license to the Amatrol® Learning Management System.

To register for a course or for additional information, contact Judy DeWitt, Workforce Development coordinator, at 724.925.4090 or dewittju@westmoreland.edu.

Automation & Industry 4.0

Principles of Factory Automation - ATCC 7000

Principles of Factory Automation introduces the types and uses of automation in manufacturing. Review the use of PLCs for material handling and movement, process control systems, workpiece handling and conveyors. 2.0 CEUs

Average course completion time: 20 hours

Cost: \$770

- Control Logic Circuits
- Electrical Control Diagrams
- Relay Control Circuits
- Automation Sequence Circuits

Principles of Robotics - ATCC 7010

Principles of Robotics begins with basic robot operation and programming before moving into interfacing, material handling, application development, flexible manufacturing cells, quality control and production control. 3.5 CEUs

Average course completion time: 35 hours

Cost: \$1,220

- Basic Robot Operation
- Basic Robot Programming
- Interfacing and Material Handling
- Application Development
- Flexible Manufacturing Cells
- Quality Control
- Production Control

NEW Introduction to Mechatronics - ATCC 7030

This course covers a wide range of advanced manufacturing topics including safety, basic hand tools, measurement, print reading and the fundamentals of mechanical, fluid power, electrical and automation. 17.5 CEUs

Average course completion time: 175 hours

Cost: \$5,420

- Introduction to Advanced Manufacturing
- Technology and Advanced Manufacturing
- Industrial Internet of Things
- Safety Responsibilities
- Machine Safety
- Practicing Safety in the Workplace
- Emergency and Accident Response
- Hazardous Materials Standards
- Hazardous Material Handling and Storage
- Fire and Electrical Safety

- Work Area Safety
- Types of PPE
- Equipment Safety
- Material Handling Safety
- Hand Tools
- Dimensional Measurement
- Measurement Conversion
- Introduction to Print Reading
- Multiview Drawings
- Blueprint Dimensions and Notes
- Tolerancing
- Manufacturing Drawings and Scales
- Caliper Measurement
- Micrometer Measurement
- Mechanical Power
- Introduction to Fluid Power
- Pneumatic Power
- Basic Cylinder Circuits
- Basic Electrical Circuits
- Electrical Voltage and Current Measurement
- Electrical Resistance Measurement
- Power in Electrical Circuits
- Control Logic Circuits
- Electrical Control Diagrams
- Relay Control Circuits



NEW Introduction to Industrial Control Systems - ATCC 7040

This course covers a wide range of advanced manufacturing topics including mechanical drives, more advanced fluid power concepts, material handling, sensors, PLC programming and project development, CNC machining and more. 12.0 CEUs

Average course completion time: 120 hours

Cost: \$3,770

- Manufacturing Metrics
- Advanced Manufacturing Operations
- Manufacturing Materials
- Principles of Manufacturing Processes
- Basic Mechanical Elements
- Power Efficiency
- Mechanical Power Transmission
- Gear Drives
- Belt Drives
- Hydraulic Power
- Basic Hydraulic Cylinder Circuits
- Fluid Power Speed Control
- Fluid Force and Friction
- Automation Sequence Circuits
- Basic PLC Program Instructions
- PLC Project Development
- PLC Motor Control
- PLC Timer Instructions
- PLC Event Sequencing 1
- Introduction to CNC Machining
- CNC Workspace
- CNC Programming and Operation
- PLC Event Sequencing 2

Electronics

AC Electronic Drives - ATCC 1070

AC Electronic Drives introduces AC motion control by discussing motion control and induction motor fundamentals, AC drive rectifier and DC and inverter circuit operator. Also introduced are AC vector drives with topics on flux vector control, AC vector drive current and velocity feedback and programming and calibrating AC vector drives. Learners will also explore AC axis drives with the components, control selection, amplifier section, calibration and PWM switching circuitry. This course will explain general purpose AC drives and the control parameters such as accelerating, decelerating, and stopping modes, AC axis, vector, and general purpose drive troubleshooting will be covered giving learners the skills to test and troubleshoot the drives. 3.5 CEUs

Average course completion time: 35 hours

Cost: \$1,220

- Introduction to AC drives
- Configuring AB PowerFlex 70 Drives
- AB Powerflex 70 Control Parameters
- Communications and Diagnostics for AB PowerFlex 70 Drives
- Troubleshooting AB PowerFlex 70 Drives
- Configuring and Troubleshooting the AB PowerFlex 70 Drive
- Configuring and Troubleshooting Servo Drives

Electrical

AC/DC Electrical Systems - ATCC 1010

AC/DC Electrical Systems teaches fundamentals of AC/DC electrical systems used for power and control in industrial, commercial, agricultural and residential applications using Amatrol's virtual training technology. Students learn industry-relevant skills included in subject areas such as electrical circuits, measurement, and circuit analysis. 3.0 CEUs

Average course completion time: 30 hours

Cost: \$1,070

- Basic Electrical Circuits
- Electrical Measurement
- Circuit Analysis
- Inductance and Capacitance
- Combination Circuits
- Transformers

NEW Electric Motor Control - ATCC 1015

Electric Motor Control teaches electric relay control of AC electric motors found in industrial, commercial, and residential applications. Learners gain understanding of the operation, installation, design and troubleshooting of AC electric motor control circuits for many common applications. This course will develop skills in interpreting schematics, system design, motor start/stop circuits, motor sequence control, reversing motor control and motor jogging. Safety is emphasized throughout the course. 5.0 CEUs

Average course completion time: 50 hours

Cost: \$1,670

- Introduction to Electric Motor Control
- Manual Motor Control and Overload Protection
- Control Transformers
- Control Ladder Logic
- Control Relays and Motor Starters
- Introduction to Troubleshooting
- Systems Troubleshooting
- Reversing Motor Control
- Automatic Input Devices
- Basic Timer Control: On-Delay and Off-Delay

NEW Electrical Control 1 - ATCC 1016

Electric Relay Control introduces the functions of relay logic control circuits used in industrial, commercial and residential applications. Describing functions and application of functions covered in control logic include logic elements such as AND, OR, NOT, NOR, and NAND. Ladder diagrams are explained and learners connect, operate and design a ladder diagram using one or more logic elements. Additional concepts include electro-pneumatic solenoid valves, sequencing control including relay operation, relay application, limit switch operation and application, and timers and advanced systems including time-delay relays, multiple cylinder control and machine modes of operation. 1.5 CEUs

Average course completion time: 15 hours

Cost: \$620

- Control Logic
- Sequencing Control
- Timers and Advanced Systems



Electrical Fabrication - ATCC 1060

Electrical Fabrication introduces electrical system wiring and develops fundamental knowledge of electrical wiring and components. This course will cover basic electrical system wiring, interpreting wire installation plans, handling non-metallic cable, understanding application of basic components such as switches, outlets and lighting and connecting electrical services. 1.5 CEUs

Average course completion time: 15 hours

Cost: \$620

- Introduction to Electrical Wiring
- Residential Wiring System Components
- Service Connection and Circuit Protection

Fluid Power

NEW Principles of Hydraulics - ATCC 3000

Principles of Hydraulics introduces the theory and application of hydraulics in manufacturing. The learner will study the fundamentals of hydraulic theory; the form, fit and function of components of a hydraulic system; common applications of hydraulics in manufacturing; and how to safely operate and maintain hydraulic systems. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

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Basic Hydraulics - ATCC 3010

Basic Hydraulics introduces hydraulic power use and application, allowing learners to develop skills and knowledge needed to apply hydraulics in modern industry. This course will take learners through key topics and skills in hydraulic power and safety, hydraulic circuits, hydraulic schematics, the principles of hydraulic pressure and flow and hydraulic speed control circuits. This course will cover pumps, fluid friction, how to connect hydraulic circuits, hydraulic cylinders and valves (including needle valves) and a wide array of hydraulic applications. 2.5 CEUs

Average course completion time: 25 hours

Cost: \$920

- Hydraulic Power Systems
- Basic Hydraulic Circuits
- Principles of Hydraulic Pressure and Flow
- Hydraulic Speed Control
- Pressure Control Circuits

Intermediate Hydraulics - ATCC 3020

Intermediate Hydraulics builds on basic hydraulic skills teaching hydraulic components and system applications. Students will learn industry-relevant skills related to new topics including operation, installation, performance analysis, and design. These topics include accumulator sizing, system design, circuit applications, component operation/installation, pilot-operated directional control valves (DCVs), 2-stage directional control valves, cam-operated directional control valves, DCV spool center types and applications, cylinder types and mountings, pressure-compensated flow control valves, pilot-operated check valves, direct-operated relief valves, non-compensated flow control valves, rapid traverse slow feed circuits, cylinder sequencing, remote pressure control, pump unloading circuits and p-port check valves. 2.5 CEUs

Average course completion time: 25 hours

Cost: \$920

- Hydraulic DCV Applications
- Hydraulic Cylinder Applications
- Hydraulic Relief Valve Operation
- Hydraulic Check Valve Applications
- Accumulator Applications

NEW Basic Pneumatics - ATCC 3050

Basic Pneumatics prepares learners to work intelligently in industry with pneumatic applications. It introduces pneumatic power and takes learners through key topics and skills in pneumatic power and safety, pneumatic circuits, pneumatic schematics, the principles of pneumatic pressure and flow and pneumatic speed control circuits. This course will cover pressure regulation, air filtration, how to connect pneumatic circuits, pneumatic cylinders, valves and actuators, a wide array of pneumatic applications, pressure and cylinder force, pneumatic leverage, pressure and volume and airflow resistance. 2.0 CEUs

Average course completion time: 20 hours

Cost: \$770

- Pneumatic Power Systems
- Basic Pneumatic Circuits
- Principles of Pneumatic Pressure and Flow
- Pneumatic Speed Control Circuits

NEW Lean Manufacturing

Lean Overview and Workplace Organization - ATCC 8050

This course covers lean manufacturing, the Toyota Production System (TPS), workplace organization, and the 5S program. Learners will study in-depth topics like similarities and differences of traditional and lean manufacturing methods, visual management tools used in the workplace and the 5S program (sort, straighten, shine, standardize and sustain). 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Introduction to Lean - ATCC 8051

Introduction to Lean introduces the concepts, terms and application of lean manufacturing principles and practices in the manufacturing process. This course provides an overview of the history and evolution of lean, the benefits of lean process and the role of management in the lean process. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

5S - ATCC 8052

5S is the lean manufacturing technique that introduces principles and methods of workplace organization. This course reviews the 5S tool for organizing and maintaining the workplace: sort, straighten, shine, standardize and sustain. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Total Productive Maintenance - ATCC 8053

Total Productive Maintenance takes learners through key topics and skills including the importance of total productive maintenance and describing three principles of preventative maintenance, overall equipment effectiveness, implementing the elements of an autonomous maintenance program and maintaining equipment including cleaning the equipment, eliminating sources of contamination, training, visual control methods, equipment inspection and developing and testing standards. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Poka-Yoke - ATCC 8054

Poka-Yoke covers key concepts such as zero quality control, terms defect and error, defect levels of a plant, types of inspection, poka-yoke systems, poka-yoke methods, poka-yoke devices, red flag conditions, contact method devices, fixed-value method devices and motion-step method devices. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Lean Theory - ATCC 8055

Lean Theory explores the concept underlying lean manufacturing theory: identifying and eliminating waste. This course will study the elements, rules and tools of lean theory and how to employ them to eliminate waste. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Lean Process Flow - ATCC 8056

Lean Process Flow covers key concepts including elements of lean production, comparing push-and-pull production systems, the Kanban system and its benefits, the Replenishment Interval and its importance, production scheduling, production balancing, and flow production and its benefits. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Visual Workplace - ATCC 8057

Visual Workplace takes learners through key topics and skills including visual communication, elements of a visual factory, four types of visual devices, guidelines for a visual facility, selecting workplace borders, assigning location addresses and workplace territory, elements of the visual workplace, visual documentation, visual production control system, visual schedule display, visual quality system, visual production indicators, and creating and sustaining the visual workplace. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Standardized Work - ATCC 8058

Standardized Work teaches the fundamentals of standards and standardization including different types and levels and their role in lean manufacturing, interpreting standardized work documents, how standards are created and communicated, and improving standards through systems such as Genbe Kanri. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Kaizen - ATCC 8059

Kaizen teaches concepts to learners such as the term Kaizen and its role in manufacturing: Kaizen event planning including selection of a team, training, preparation, scheduling, and communication; Kaizen event implementation including rules, collection of data, performing a time and motion study, methods used for identifying and analyzing waste, types of reports and application; Kaizen event conclusion; and Kaizen event examples including how to perform a 5S Kaizen event, a bottleneck Kaizen event and a lead time reduction Kaizen event. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Value Stream Mapping - ATCC 8060

Value Stream Mapping teaches key learning concepts to participants including value and value-added processes, value stream and the value stream map, preparation for value stream mapping, current state value stream mapping, process analysis using a value stream map, and future state value stream map and implementation. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Set-up Reduction - ATCC 8061

Set-up Reduction includes concepts for participants such as setup and SMED overview including large-lot productions; preparing for SMED including the four phases of traditional setup and transitioning from traditional to SMED; separating external setup and internal setup tasks; converting internal setup tasks to external setup tasks; and streamlining all setup tasks including stages 1-3 of SMED (implementation, tracking and creating an action plan for open issues at the end). 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Six Sigma - ATCC 8062

This course covers Lean Six Sigma principles, project management, customer determination, team development and management, measurement, analysis, and improvement and control. Participants will study topics like customer value and expectations, team dynamics, data collection, normal distribution and probability, process capability, hypothesis testing, non-parametric analysis, design of experiments and more. 3.0 CEUs

Average course completion time: 30 hours

Cost: \$1,070

- Lean Six Sigma Principles
- Product Management and Customer Determination
- Team Development and Management
- Measurement
- Analysis
- Improvement and Control

Machining

NEW Principles of CNC - ATCC 6010

Principles of CNC covers the fundamentals of the Computer Numerical Control (CNC) device. This course reviews the history, common components and functions, and common types and functions of CNC machines. Learn how a CNC machine uses the Cartesian coordinate system and reference points to control machine movement. This course also provides an overview of part programming, including programming methods and program structure and codes. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Principles of Turning - ATCC 6020

Principles of Turning provides an overview of the equipment and application used in the turning process. Learn the history of lathes, major components of manual and CNC lathes, the major types of lathes and common turning operations. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Principles of Machining Centers - ATCC 6025

Principles of Machining Centers provides an overview of the equipment and applications used in the machining process. Learn the history of machining centers, major components of horizontal and vertical machining centers, major types of machining centers, and common machining center operations. 3.0 CEUs

Average course completion time: 30 hours

Cost: \$1,070

- Introduction to Machining Centers
- Advanced Manufacturing Organization
- Manufacturing Materials
- CNC Turning Center Operations
- CNC Machining Center Operations
- CNC Programming with Circular Interpolation

Principles of Grinding - ATCC 6030

Principles of Grinding provides an overview of the equipment and applications used in the grinding process. Learn the history of grinding machines, major components of grinding machines, major types of grinding machines and common grinding operations. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Principles of Workholding - ATCC 6035

Principles of Workholding introduces the theory and concepts of workholding and the devices used for locating and securing workpieces. Study the fundamentals of the workholding process and the components, operations, and maintenance of the major types of workholding devices. 1.0 CEUs

Average course completion time: 10 hours

Cost: \$470

- Principles of Workholding
- Vises and Fixtures

Principles of Coolants and Oils - ATCC 6040

Principles of Coolants and Oils introduces the fundamentals of the major types of coolants and oils used in manufacturing. This course covers oil-based and chemical-based cutting fluid, gases, and machine lubricants and oils. This class focuses on the properties, purpose, application and safety issues of each type of coolant and oil. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Principles of Gear Manufacturing - ATCC 6045

Principles of Gear Manufacturing introduces the concepts, technology, terminology and operations required to manufacture gears. The learner will gain an understanding of the fundamentals of gear design, the various manufacturing processes used to create a gear including shaping, hobbing, grinding, and honing and the tools and methods used for gear inspection. 1.0 CEUs

Average course completion time: 10 hours

Cost: \$470

- Introduction to Gear Generation
- Gear Inspection

Principles of Tooling - ATCC 6050

Principles of Tooling introduces the tools used for metal cutting on lathes and machining centers. Review basic concepts in metal removal, tool materials and their properties and tool selection and maintenance. Learn the major types of tools, cutting applications, materials and properties of tools and the types and causes of tool defects. 0.5 CEUs

Average course completion time: 5 hours
Cost: \$320

Tooling for Machining Centers - ATCC 6055

Tooling for Machining Centers provides an in-depth study of the major types of tooling used for machining center operations. Review the major components of each type including inserts, tool and tool holder types. Participants also study the ANSI and ISO nomenclature for machining center tools and the proper care of tooling. This course includes practical lessons on assembling and mounting machining center tools, nomenclature standards for grinding wheels as well as proper dressing types and methods and care of grinding wheels. Includes practical lessons on dressing and mounting grinding wheels. 0.5 CEUs

Average course completion time: 5 hours
Cost: \$320

Tooling for Turning - ATCC 6057

Tooling for Turning is an in-depth study of the major types of tooling used for turning operations. Review the components of each type including insert, tool and tool holder types. Study the ANSI and ISO nomenclature standards for inserts, tool holders, boring bars and learn the proper care of tooling. Includes practical lessons on assembling and mounting turning tools. 0.5 CEUs

Average course completion time: 5 hours
Cost: \$320

Tooling for Grinding - ATCC 6060

Tooling for Grinding provides an in-depth study of the major types of grinding wheels used for grinding operations. Review the fundamentals of grinding wheels and grinding operations. 0.5 CEUs

Average course completion time: 5 hours
Cost: \$320

Tooling for Tapping - ATCC 6065

Tooling for Tapping introduces tapping tools used for metal cutting. This course focuses on tapping terminology, types, properties and applications. 0.5 CEUs

Average course completion time: 5 hours
Cost: \$320

To register for a course or for additional information, contact Judy DeWitt, Workforce Development coordinator, at 724.925.4090 or dewittju@westmoreland.edu.

NEW Maintenance

Maintenance Operations - ATCC 5000

This course covers machine operation, machine monitoring and documentation, troubleshooting techniques and total productive maintenance (TPM). Examples of topics within this course include the function of a basic Human Machine Interface (HMI), how to issue, interpret and resolve a maintenance work order, the types of fluid power test instruments and their applications and methods of eliminating breakdown losses. 2.0 CEUs

Average course completion time: 20 hours
Cost: \$770

- Machine Operation
- Machine Monitoring and Documentation
- Troubleshooting Techniques
- Total Productive Maintenance (TPM)

Manufacturing Processes

Blueprint Reading - ATCC 5020

Blueprint Reading introduces reading and interpreting blueprints with a focus on reviewing common elements, the alphabet of lines and the differences between types of drawings. This course also provides dimension definitions for height, width and depth and reviews dimension and geometric symbols and datums. 0.5 CEUs

Average course completion time: 5 hours
Cost: \$320



NEW General Dimensioning and Tolerancing - ATCC 5025

General Dimensioning and Tolerancing provides the learner with an understanding of fundamental dimensioning rules, units and types of dimensioning, dimensioning features, and tolerancing methods. Study the ASME Y14.5M-1994 standard for uniform dimensions and tolerances, common symbols used for dimensioning and tolerance practices for part features. 0.5 CEUs

Average course completion time: 5 hours
Cost: \$320

Geometric Dimensioning and Tolerancing - ATCC 5030

Geometric Dimensioning and Tolerancing introduces the learner to the underlying concepts and practices of GD&T. Focus on understanding dimensions and tolerances on engineering drawings per the ASME Y14.5M-1994 standard. Study datums, geometric rules, types and characteristics and tolerance zones. 2.0 CEUs

Average course completion time: 20 hours

Cost: \$770

- Geometric Dimensioning and Tolerancing
- Location Tolerances
- Orientation Tolerances
- Form Tolerances

AWS Welding Symbols on Blueprints - ATCC 5035

AWS Welding Symbols on Blueprints introduces the learner to the common weld and welding symbols found on blueprints per standards set by ANSI/AWS A2.4-79. Topics include the distinction between weld and welding symbols, the elements of a welding symbol, overview of welding codes, rules, regulations and specifications. Focus of the course is on identifying and interpreting the common symbols found on blueprints. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

NEW Production Assembly - ATCC 5050

Production Assembly teaches the fundamentals of assembly skills used throughout modern industry. High quality assembly skills are in short supply with the impact being more product failures which lead to increased costs, customer dissatisfaction and in some cases, safety issues. Participants will develop skills in identifying and safely handling torque wrenches as well as click-type and air impulse torque wrenches. This course will focus on properly sequencing fittings and installing, operating and maintaining O-rings and lip seals. This course will also provide knowledge in hose and coupling assembly, hose routing, use of clamps, brackets and clips, identification of STOR and Zerk hydraulic fittings, and handling both steel and plastic tubing. 4.0 CEUs

Average course completion time: 40 hours

Cost: \$1,370

- Torque Basics
- Torque Tools
- O-Ring Seals
- Lip Seals
- Hydraulic Fittings
- Hose and Coupling Assembly
- Hose Installation
- Tubing Installation

NEW Split Flange Coupling Assembly - ATCC 5055

Split Flange Coupling Assembly teaches learners how to identify, select, install and troubleshoot a split flange coupling. Incorrect assembly of a split flange coupling can lead to product failure, code compliance issues and safety problems. This course will focus on the selection and application of split flange couplings. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

NEW Electric Torque Wrench Assembly - ATCC 5056

Electric Torque Wrench Assembly teaches learners how to use a high-speed, precise torque tool. Precision assembly requires accurate fastener tension in bolted assembly. Electric Torque Wrench Assembly teaches the operation and application of electric torque wrenches with threaded fasteners. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Materials

NEW Principles of Materials (Ferrous Metals) - ATCC 5040

Principles of Materials (Ferrous Metals) introduces the properties, elements and types of ferrous materials commonly employed in metal manufacturing. Learn about the basics of steel manufacturing, the elements used to create steel and steel alloys, the main types of ferrous materials and their properties and the common tests used to measure metal properties. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Principles of Materials (Nonferrous Metals) - ATCC 5041

Principles of Materials (Nonferrous Metals) introduces the properties, elements and types of nonferrous materials commonly employed in metal manufacturing. This course covers the basics of the nonferrous material manufacturing process, the elements used to create nonferrous materials, the main types of nonferrous materials and their properties and the common tests used to measure metal properties. 1.0 CEUs

Average course completion time: 10 hours

Cost: \$470

- Principles of Nonferrous Metals
- Copper, Aluminum and their Alloys

Principles of Heat Treating - ATCC 5042

Principles of Heat Treating introduces the properties, processes, skills and concepts working with heat treating methods commonly employed in manufacturing. These concepts include the different types of heat treating processes, chemical changes of ferrous and nonferrous metal during heat treatment, batch and continuous production heat treating, heat treated metal testing and heat treating nomenclature and standards. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Principles of Plastics - ATCC 5043

Principles of Plastics introduces the properties, processes, skills and concepts of working with plastics. These concepts include the importance of plastics, the two types of plastics and their specific characteristics, basic plastics-making processes, mechanical properties, physical properties, thermal properties, optical properties, electrical properties, environmental properties, standards and environmental considerations of the impact of plastics. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320



Quality Assurance

Principles of Composites - ATCC 5044

Principles of Composites introduces the importance, properties, processes and skills of working with composites. These concepts include the types of materials that makeup a composite, the history of composites, mechanical properties, thermal properties, electrical properties, environmental properties, the many types of composite manufacturing processes, and environmental considerations for composites including how the composite industry is reducing its impact on the environment today. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Principles of Ceramics - ATCC 5045

Principles of Ceramics introduces the importance, properties, processes and skills of working with ceramics. These concepts include the types of characteristics for each type of ceramics, the history of ceramics, mechanical properties, physical properties, thermal properties, electrical properties, environmental properties, and the types of ceramic manufacturing processes including pressing, extrusion, injection molding, drain and solid casting and post manufacturing. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Mechanical

Mechanical Drives 1 - ATCC 2010

Mechanical Drives introduces mechanical systems and develops fundamental knowledge of mechanical systems and practices. This course will cover basic safety, installation, key fasteners, power transmission systems, v-belt drives, chain drives, spur gear drives and multiple shaft drives. Topics covered include learning how to select, install, adjust, troubleshoot and repair a range of mechanical systems which are commonly found in both automated and manual machines used in every industry around the world. 3.5 CEUs

Average course completion time: 35 hours

Cost: \$1,220

- Introduction to Mechanical Drive Systems
- Key Fasteners
- Power Transmission Systems
- Introduction to V-Belt Drives
- Pliers and Locking Devices
- Mallets and Non-Threaded Fasteners
- Torque Wrench
- Portable Power Tools

Quality Control Concepts - ATCC 8000

In this course, learners will study the definition and benefits of quality management systems (QMS), the various types of quality management systems, International Organization for Standardization (ISO), several types of standards that work in various industries and the details about the ISO/TS 16949 automotive standard. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

NEW Statistical Process Control 1 - ATCC 8015

Statistical Process Control 1 introduces the concepts of variation and probability and the control chart tool. This course will define variation and explain how it impacts the production process. This course will also define probability and teach the learner to use histograms to find the variability of the standard deviation of a distribution. Learn how to calculate and plot the required statistics to construct control charts. 1.5 CEUs

Average course completion time: 15 hours

Cost: \$620

- Introduction to SPC
- Control Chart Operation
- Control Chart Analysis

Statistical Process Control 2 - ATCC 8020

Statistical Process Control 2 continues the study of SPC by focusing on how to interpret control charts. Learn how to recognize the difference between points within and outside statistical control limits, and the differences between variations within assignable causes and system causes. Study how to interpret graphical information to determine process capability and how to calculate the capability index of a machine or process. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Inspection Techniques 1 - ATCC 8025

Inspection Techniques 1 introduces the purpose and use of gauges. This course focuses on identifying and using commonly used gauges including variable analog and digital gauges, micrometers, Go/No-Go plug gauges, thread gauges, and attribute gauges. Learn how to verify calibration, use gauge masters for accurate measurement and care for and store gauges when not in use. 1.5 CEUs

Average course completion time: 15 hours

Cost: \$620

- Calibrating and Mastering Gauges
- Variable Gauges and Micrometers
- Plug Gauges, Thread Gauges and Attribute Gauges

Surface Plates - ATCC 8030

Surface Plates focuses on the types and uses, components and accessories, and best practice uses and applications of surface plates. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Gauge Blocks - ATCC 8032

Gauge Blocks focuses on the types and uses, components and accessories and best practice uses and applications of gauging blocks. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Test Indicators - ATCC 8033

Test Indicators focuses on the types and uses, components and accessories, and best practice uses and applications of test indicators. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Height Gauges - ATCC 8034

Height Gauges focuses on the types and uses, components and accessories, and best practice uses and application of height gauges. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Bench Comparators - ATCC 8035

Bench Comparators focuses on the types and uses, components and accessories, and best practice uses and applications of bench comparators. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Optical Comparators - ATCC 8036

Optical Comparators focuses on the types and uses, components and accessories, and best practice uses and applications of optical comparators. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Bore Gauges - ATCC 8037

Bore Gauges focuses on the types and uses, components and accessories and best practice uses and applications of bore gauges. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Air Gauges - ATCC 8038

Air Gauges focuses on the types and uses, components and accessories and best practice uses and applications of air gauges. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Specialty Micrometers - ATCC 8039

Specialty Micrometers focuses on the types and uses, components and accessories and best practices and applications of micrometers. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Miscellaneous Inspection Instruments - ATCC 8040

Miscellaneous Inspection Instruments focuses on the types and uses, components and accessories, and best practice uses and applications of sine plates, radius gauges, hardness gauges, Rockwell testers and other inspection instruments. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

NEW Safety**Safety Practices and Regulations - ATCC 8070**

This course covers the importance of workplace safety, OSHA regulations and practicing safety in the workplace. Learners will study topics like the importance of safety policies, common causes of workplace injuries and accidents, and OSHA regulation for general workplace safety, personal protective equipment, tools, machines and more. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Personal Protective Equipment - ATCC 8071

This course covers the workplace personal protective equipment requirements and types. Learners will study in-depth objectives such as the importance of personal protective equipment, hazards that require PPE, types of PPE for your head, eyes, face, ears, hands, arms, feet, legs and lungs. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Hazardous Communication - ATCC 8072

Hazardous Communication reviews the definitions, uses and standards related to hazardous materials. Participants will learn how to use and understand a Safety Data Sheet (SDS), hazardous chemical labels, the Hazardous Material Identification System (HMIS) and the HMIS color bar. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Overhead Crane Safety - ATCC 8073

Overhead Crane Safety reviews the requirements for safe operation of overhead crane equipment. This course focuses on understanding the components of an overhead crane system as well as the safety requirements and practices for the safe operation and inspection of the overhead crane. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Lockout/Tagout - ATCC 8074

This course covers the basics of lockout/tagout. The course begins with the dangers of hazardous energy, how to use lockout/tagout to safeguard a machine, and the requirements for an energy-control program (ECP). 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

To register for a course or for additional information, contact Judy DeWitt, Workforce Development coordinator, at 724.925.4090 or dewittju@westmoreland.edu.

Accident Response - ATCC 8075

This course covers first aid and accident procedures. Learners will study about bloodborne pathogens and how to prevent them, the guidelines of administering first aid, how to respond to a workplace accident, how to use an eyewash station and how to report workplace accidents. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Confined Spaces - ATCC 8076

This course defines confined spaces in the workplace, discusses the hazards of working in these spaces and covers the OSHA requirements for working in confined spaces. Learners will study objectives like characteristics of a permit-required confined space, atmospheric and physical hazards present in confined spaces and equipment required for working in confined spaces. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

NEW Workplace Effectiveness

Principles of Advanced Manufacturing - ATCC 9000

Principles of Advanced Manufacturing introduces advanced manufacturing through study of the technologies, processes, performance objectives and personnel employed in modern manufacturing. This course includes examination of computer technologies such as CNC, PLC, automation and software. Learn how to calculate critical performance objectives as well as common physical plant layouts and the typical organization of manufacturing personnel and their responsibilities. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Mathematics - ATCC 9001

Mathematics reviews the math operations and concepts commonly used on the job in the production environment. The learner hones addition, subtraction, multiplication, division, fraction, decimal, percentage, averaging, ratio and geometry skills. This course will expose students to basic linear problem solving and geometric operations such as calculating surface area and volume. 1.5 CEUs

Average course completion time: 15 hours

Cost: \$620

- Basic Math
- Fractions, Decimals and Percentages
- Basic Geometry

Trigonometry - ATCC 9002

Trigonometry provides in-depth study of right triangle trigonometry and its applications to practical manufacturing calculations. The learner studies the foundations of trigonometry including lines, components and types of angles, and angle measurement. Topics of focus include triangles, the Pythagorean Theorem, understanding and calculating trigonometric ratios and inverse functions and the components of circles and their relationship to angles. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Communication Skills - ATCC 9003

Communication Skills explains the importance of effective communication, listening skills and feedback. Upon completion the learner will be able to identify the roles of the sender and receiver and explain the effects of encoding and decoding. The learner will also learn to identify the barriers to effective communication and appropriate types of communication to use in various situations. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Conflict Resolution - ATCC 9004

Conflict Resolution defines conflict and identifies the strategies used to manage it. Participants will learn to identify the sources of the conflict and categorize the conflict as positive or negative. This course also covers active listening skills and strategies to minimize negative effects of conflict. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Working in Groups - ATCC 9005

Working in Groups provides an overview of groups and group decision making. The learner will study group types, group formation and the components and attributes of working effectively in a group. Participants will also learn about the advantages and disadvantages of group decision-making as well as the best decision-making strategies for any situation. 0.5 CEUs

Average course completion time: 5 hours

Cost: \$320

Manufacturing Jumpstart - INDC 5365

This course is ideal for onboarding new employees! Organizations need to be able to locate high-quality talent to fill vacant positions. Increase your employability by participating in this fast-track, short-term program that offers training in workplace skills and techniques most relevant in today's industrial environment. 2.6 CEUs

Average course completion time: 26 hours

Cost: \$950

- Advanced Manufacturing
- Basic Math
- Fractions, Decimals, and Percentages
- Basic Geometry
- Communication
- Conflict Management
- Working in Groups
- Blueprint Lines
- Introduction to Lean Manufacturing
- Workplace Safety
- PPE in the Workplace
- Hazardous Material Communication
- Lockout/Tagout

To register for a course or for additional information, contact Judy DeWitt, Workforce Development coordinator, at 724.925.4090 or dewittju@westmoreland.edu.

Certified Production Technician Fast Track

Are you looking to create an internal pipeline of skilled employees? Would you like to attract, motivate and retain qualified employees? Westmoreland has partnered with the Manufacturing Skills Standards Council to offer the Certified Production Technician (CPT) 4.0 Fast Track online program.

CPT 4.0 Fast Track has been designed especially for incumbent workers with a minimum of 3-5 years manufacturing experience. The certifications prepare participants with the next generation of skills to work in a computer-driven, data intensive advanced manufacturing workplace. CPT 4.0 consists of four subject areas with an average of 15-18 hours estimated completion time per topic:

- Safety & Employability
- Quality Practices & Measurement
- Manufacturing Processes & Production
- Maintenance Awareness

Certification exams will be administered in person at our Advanced Technology Center, 1001 Technology Drive, Mount Pleasant, PA 15666.

Per student pricing is as follows:

- CPT 4.0 Safety, \$285 tuition + \$105 material fee
- CPT 4.0 Quality, \$285 tuition + \$105 material fee
- CPT 4.0 Production, \$285 tuition + \$105 material fee
- CPT 4.0 Maintenance, \$285 tuition + \$105 material fee

Register for the Full CPT 4.0 certification and receive a 20% discount! That's all 4 subject areas for the price of \$912 + \$240 material fee.

To register for a course or for additional information, contact Judy DeWitt, Workforce Development coordinator, at 724.925.4090 or dewittju@westmoreland.edu.



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YOUR COMPANY MAY QUALIFY FOR MONEY FOR TRAINING THROUGH WEDNETPA!



Westmoreland is a proud partner with the Workforce & Economic Development Network of Pennsylvania (WEDnetPA). Beginning July 1, qualified companies can receive up to \$2,000 in training reimbursement per eligible employee. The beauty of this program is that it is

completely employer-driven....you have the freedom to choose the training method(s) that best suit your needs.

WEDnetPA provides training reimbursement funds in several skill-building categories:

- Business Operations
- Computer Operations
- Machine Operations and Maintenance
- Manufacturing Fundamentals
- Manufacturing Technology

To find out if your company qualifies for the WEDnetPA grant or to inquire about customized on-site workforce training courses, contact our Workforce Development team at workforce@westmoreland.edu.

Additional personal and professional online skills training courses are available through our partnership with ed2go-Pro. These interactive courses are led by expert instructors. Ready to explore our catalog?

Please visit www.ed2go.com/wccc-pro for a wide range of online courses that are affordable, convenient and geared just for you!