# Targeted training. **Brought to you.**







Advanced Manufacturing Workshops

## Targeted training. **Brought to you.**



This brochure provides a list of workshops that can be brought to your business by Goodwin University. Goodwin, through partnerships and grants, can provide scholarship funding to roll out targeted training for you.



Our mission is to help make your company the most competitive and profitable that it can be by providing specific skills training for your staff.



Training that is facilitated by knowledgeable industry experts can be provided in our **Advanced Manufacturing Mobile Lab** or directly in your facility, making it easy for you and keeping your employees working right up to and after training sessions.

#### For more information, contact:

Melanie Hoben, MSOL Director, Workforce Development Mhoben@goodwin.edu 860-913-2283

Guy LaBella Director, University Relations Glabella@goodwin.edu 860-727-6948

Kyle Zachary, MSOL Instructor, Continuing Education Kzachary@goodwin.edu 860-913-2990





We worked together to bring a series of workforce development classes to our facility utilizing the Advanced Manufacturing Mobile Lab. The instructors were great, and the funding assistance process was made extremely easy by the Goodwin team. Thank you for making this resource available to Penn Globe.

Marcia LaFemina President CEO The Pennsylvania Globe Gaslight

#### **Basics of Metrology - Theory & Practice**

Metrology is the science of measurement and includes all theoretical and practical aspects of measurement. Participants learn through both lecture and hands-on training.

4 hours (1 day)

## Basics of Metrology & Coordinate Measurement Machines (CMM)

Metrology is the science of measurement. The workshop lecture includes the theoretical and practical aspects of these measurements. Hands-on activities in this workshop include the use of handheld gauges, manual height gauges, and a portable CMM measuring arm.

6 hours (1 day)

## Introduction to Coordinate Measurement Machines (CMM)

Instruction on the use of a Coordinate Measuring Machine (CMM), which measures the physical geometrical characteristics of an object. This machine may be manually controlled by an operator, or it may be computer controlled. Measurements are defined by a probe attached to the third moving axis of this machine. Probes may be mechanical, optical, laser, or light.

8 hours (2 days, 4 hours)

## Introduction to Geometric Dimensioning & Tolerancing (GD&T)

A system for defining and communicating engineering tolerances. It uses a symbolic language on engineering drawings and computer-generated, three-dimensional solid models that explicitly describes nominal geometry and its allowable variation.

8 hours (2 days, 4 hours)

#### **Gauge Repeatability & Reproducibility Analysis**

A statistical tool that measures the amount of variation in the measurement system arising from the measurement device and the people taking the measurement.

4 hours (1 day)

#### **Introduction to Blueprint Reading**

This workshop introduces the basic principles of print reading. Topics include line types, orthographic projections, dimensioning methods, and notes. Upon completion, students should be able to interpret basic prints and visualize the features of a part or system.

8 hours (2 days, 4 hours)

#### **Mentoring**

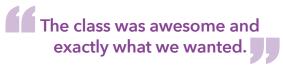
The on-boarding and retaining of skilled workers are important aspects of the mentor-mentee relationship. This workshop provides the training to help experienced workers as they train new workers and pass on institutional knowledge.

4 hours (1 day)

#### **Advanced Mentoring Practices**

The on-boarding and retaining of skilled workers are important aspects of the mentor-mentee relationship. This skilled-based workshop provides advanced training to help experienced workers understand their roles as mentors and mentees. In addition, this workshop provides advanced training in mentor relationship building, employing communication techniques to share information, effective conflict resolution, and creating/utilizing teachable moments.

8 hours (1 or 2 day)



**Senior Aerospace** 

#### **Basics of CAD Software (Solid Works)**

The use of computer systems to aid in the creation, modification, analysis, or optimization of a design. CAD software is used to increase the productivity of the designer, improve the quality of design, improve communications through documentation, and create a database for manufacturing. Participants learn introductory programming on laptops using Solidworks software.

8 hours (2 days, 4 hours)

#### **Introduction to Applied Statistics**

The theory covers approaches to statistical-decision problems and to statistical inference, and the actions and deductions that satisfy the basic principles stated for these different approaches. Within a given approach, statistical theory gives ways of comparing statistical procedures; it can find a best possible procedure within a given context for given statistical problems, or can provide guidance on the choice between alternative procedures. *4 hours (1 day)* 

#### **Shop Math Fundamentals**

Math skills are necessary to most all aspects of modern manufacturing. This workshop covers math topics with an emphasis on applying math principals to practical shop problems. The topics include review of arithmetic calculations, calculations with common fractions and decimals, conversion of fractions and decimals, calculating ratios, proportions and percentages, reading and calculating customary and metric units of measure, fundamentals of algebra, calculating area and volume of geometric figures, fundamentals of plane geometry (triangles and circles), and an introduction to trigonometry. 4 hours (1 day)

Goodwin University aligns their workshop training with the manufacturing skills training that we are seeking.

Gail Burdon, Business Unit Manager RGBSI

#### **Essentials of Failure Mode Effects Analysis (FMEA)**

The first step of a system reliability study. It involves reviewing as many components, assemblies, and subsystems as possible to identify failure modes and their causes and effects. For each component, the failure modes and their resulting effects on the rest of the system are recorded in a specific FMEA worksheet.

4 hours (1 day)

#### **Electrical Soldering and Wiring Fundamentals**

This workshop presentation includes lecture and hands-on activities to train workers to solder and de-solder surface mount, radial and axial lead components as well as wires for installation or re-work applications. Point-to-point wiring, dressing, and wire management are presented. Workers will receive hands on training with a variety of wiring schemes. Wire gauges, various schematic work, and identification of several components are discussed in this workshop.

4 hours (1 day)

#### **Continuous Quality Improvement (Kaizen)**

An ongoing effort to improve products, services, or processes. These efforts can seek "incremental" improvement over time or "breakthrough" improvement all at once.

4 hours (1 day)



#### ISO 9001:2015

This workshop is an introduction to the Quality Management System standard ISO 9001:2015. The standard focuses on the following quality management principles: strong customer focus, motivation and support of top management, the process approach and continual improvements. The goal of the standard is to ensure that customers get consistent, good quality products and services, which results in benefits for the business. Following an introduction, we will examine scope, normative reference and terms, and definitions used in the standard. Further, an overview of the following topics will be provided: Context of the Organization, Leadership, Planning, Support, Operation, Performance Evaluation and Improvement.

4 hours (1 day)

The presence of the Mobile Lab at our facility is a sign that we are reinvesting in our people and in our business.

Scott Livingston, President and CEO Horst Engineering

### The Essentials in the Use of Statistical Process Control Charts

Statistical Process Control (SPC) is a control charting method of quality assurance that applies statistical methods in order to monitor and control a manufacturing process over time. Monitoring and controlling ensures that the process functions at its full potential so that the process can produce as much conforming product as possible with a minimum of waste (scrap).

4 hours (1 day)

#### **Introduction to Supply Chain Management**

Understanding the many facets of a supply chain is very important in today's ever-advancing world. In order to extract the maximum profitability today, it is important to identify supply chain drivers, then plan and design a system that maximizes potential for all companies involved throughout the supply chain. This workshop provides insight into the many components of today's supply chain, then highlights best practices with regard to planning and management.

4 hours (1 day)

#### **Lean Manufacturing Principles – A Primer**

A systematic method for the elimination of waste ("Muda") within a manufacturing system. Lean also takes into account waste created through overburden ("Muri") and waste created through unevenness in workloads ("Mura").

4 hours (1 day)

#### **Safety and Ergonomics in Manufacturing**

The science of designing the workplace, keeping in mind the capabilities and limitations of the worker. Poor worksite design leads to fatigued, frustrated, and hurting workers. This leads to the loss in productivity and quality, and exposes the company to potential lawsuits.

4 hours (1 day)

#### **Yellow Belt Certification**

Goodwin University's Advanced Manufacturing Program has developed a Six Sigma Yellow Belt workshop to train management, professional staff, and production operators on the project-based methodology that focuses on improvement of existing products, processes, or services. A Six Sigma Yellow Belt certificate will be awarded upon successful completion of the certification exam administered on day two of the workshop. 8 hours (2 days, 4 hours)

#### Introduction to MS Excel

MS Excel is part of the Microsoft Office suite of applications. It is a spreadsheet program that is used for automating calculations, performing data analysis/mining, creating budgets, and a more. This beginner course is designed for the individual who has a working knowledge of the Windows desktop with little to no experience with spreadsheets. This workshop will introduce you to the following concepts: navigating the Office Ribbon; understanding the various components within Excel; creating formulas; data manipulation and analysis; and formatting, saving, and printing your information. At the end of this workshop, you will be confident in your ability to work with spreadsheets, ready to apply your knowledge in the workplace, and prepared to take the next Excel class.

8 hours (2 days, 4 hours)

The multiple activities and examples during the workshop, along with the instructor's proficiency, were absolutely essential for me in my engineering role at Cirtec.

Root Cause Analysis Workshop Participant, Cirtec Medical



#### **Advanced Excel Concepts for Data Analysis**

MS Excel is one of the most commonly used applications for data analysis. This advanced Excel course is suitable for those with a sound working knowledge of Excel, who wish to gain the skills necessary to use effectively worksheets, mathematical formulas, nesting function, charting, pivot tables, conditional formatting, lookup formulas, and the index and match function. Learning these features on your own, however, would be a daunting task. This workshop will instruct you in the use of these important advanced Excel features and functions, taking your level of proficiency from basic to advanced. After this training, you will be prepared to use your newly gained knowledge to excel at your job.

8 hours (2 days, 4 hours)

#### **Root Cause Analysis Primer**

This workshop is designed for the non-technical staff and provides explanations of the tools that are taught in the Root Cause Analysis Workshop. This workshop will provide the participants with an understanding of the quality tools used to define and describe the problem, the flow of the process, how to create a list of causal factors, how data is collected, distinguish between causal factors and root causes, develop a corrective action plan, and ensure that the root cause cannot reoccur. 4 hours (1 day)



#### **Root-Cause Analysis – Problem Solving Tools**

A very useful tool for improving the reliability of plant process equipment. It is a logical, structured, and deductive technique that can identify the causes behind the failure.

4 hours (1 day)

#### **Root-Cause Analysis II**

Workshop participants, under the direction of the workshop instructor, will participate in several failure analysis events using root-cause analysis tools. The participants will define the problem, outline the process flow, analyze data, determine root cause, and recommend corrective action, including mistake-proofing for actual failure events defined by the workshop customer. Prerequisite: Root-Cause Analysis – Problem Solving Tools workshop 4 hours (1 day)

#### **Creating Standard Work (SW)**

Documenting the current best practice, standardized work forms the baseline for Kaizen or continuous improvement. As the standard is improved, the new standard becomes the baseline for further improvements, and so on.

4 hours (1 day)

#### **Essentials of Risk Management**

The identification, assessment, and prioritization of risks, followed by coordinated and economical application of resources to minimize, monitor, and control the probability and/or impact of unfortunate events or to maximize the realization of opportunities. Risk management's objective is to assure uncertainty does not deflect the endeavor from the business goals.

4 hours (1 day)

#### The Fundamentals of Value Stream Mapping (VSM)

A lean-management method for analyzing the current state and designing of a future state for the series of events that bring a product or service from its beginning through to the customer. It can be applied to nearly any value chain.

4 hours (1 day)

#### **Overall Equipment Effectiveness (OEE)**

This workshop introduces the Overall Equipment Effectiveness (OEE) metric, and how it is used to evaluate the efficiency and effectiveness of a manufacturing operation. The underlying metrics of availability, performance, and quality are identified and discussed. The Traditional Six Big Losses related to OEE are explained in detail as well as the Recommended Six Big Losses which are explored. The relationship between Statistical Process Control (SPC) and OEE is presented, along with the definition and usefulness of the Process Capability Index (Cpk). The use of Root Cause Analysis is explained for OEE improvement in terms of problem definition, root cause analysis, and corrective action.

The video interactions were great. Want more!

Mentoring Workshop Participant Cirtec

#### **Managing the Marginal Employee**

In this workshop, the four factors of job performance (job understanding, capability, opportunity, and willingness) are examined in light of why work doesn't get done and what strategies a manager may use to positively influence performance. This is folded into strategies to work with employees who are identified as marginal to improve their chances for success and productivity in the workplace. Methodologies such as Training Within Industry (TWI) are explored for implementing a positive approach to performance and ultimately coaching employees for excellence. 4 hours (1 day)

### Conflict Response

This workshop introduces conflict dynamics and its implications in day-to-day situations. Conflict is not always negative and needs to be approached with care and consideration. Participants examine their approach to conflict with the TKI instrument to understand how they typically approach conflict and work on developing strategies to enable working with people who have different conflict approaches.

4 hours (1 day)

## Diversity and Team Dynamics – The Functional Team

In this workshop, the variations of diversity and the interconnectedness of teams is explored as are strategies that strengthen functional teams through the use of personality and performance tools. Additionally, the roles and responsibilities within the functional team and how they manifest in the work environment are defined. Functional teams are often composed of members from several vertical levels who perform specific functions for the team. This structure works in both large and small organizations.

4 hours (1 day)

#### **Basics of Programmable Logic Controllers (PLC)**

PLCs are used extensively to drive automation and work with associated devices such as robots in today's manufacturing sector. This workshop walks through the basics of the microcontroller and associated input and output devices, their configuration, and wiring to external devices. Ladder logic is the language that programs the PLC microcontroller. Attendees will learn to program using this simple language, followed by a debugging session. 8 hours (2 days, 4 hours) **NEW** 

## The instructor was great and very knowledgeable about the topic.

GD&T Participant HORST Engineering

#### **45-Hour Programs**

#### **CPT – Safety & Quality**

This extended workshop explores core areas of safety, and quality practices & measurement. Leads to opportunity to test for nationally recognized MSSC credentials.

45 hours (15 days, 3 hours)

#### Six Sigma Green Belt

This extended workshop in Six Sigma lean tools identifies waste while driving continuous improvements to process and product quality. Leads to the opportunity to earn a Green Belt from Goodwin University.

45 hours (15 days, 3 hours)

#### **CPT – Process & Maintenance Awareness**

This extended workshop explores core areas of manufacturing process & production and maintenance awareness. Leads to opportunity to test for nationally recognized MSSC credentials. 45 hours (15 days, 3 hours)

#### **Technical Drawings**

This extended workshop covers the basic principles of engineering drawings and how to read and interpret them. The six basic views of drawings are explored and then transferred to CAM software for CNC programming.

45 hours (15 days, 3 hours)

#### **CLT – Certified Logistics Technician**

This extended workshop in core areas of logistics includes warehouses, distribution centers, and international transportation networks. Leads to opportunity to test for nationally recognized MSSC credential.

45 hours (15 days, 3 hours)





## **180 Team Building in Quality Management Systems**

This extended, self-paced workshop consists of 27 units that will train to build effective teams of personnel, then explain the basics of a quality management system. Team topics include working in a group, group Communication, effective collaboration, life stages of a team, meetings, diversity, creativity, problem solving, decision making, and conflict management. Quality topics include intro to quality, ISO9000, standards organizations, basic quality roles and responsibilities, quality concepts, the cost of quality, managing quality, quality documents, corrective and preventative action, intro to SPC, probability and variation, the control chart, control chart analysis, process capability, problem-solving tools and problem solving. 45 hours (Self-Paced) **NEW** 

#### **180 Quality Measurement Tools**

This extended, self-paced workshop consists of 25 units that walk the student through familiarization and use of the most widely used tools to measure parts in a quality or production setting. Measurement topics include intro to precision instruments, rules, calipers, micrometers, small hole gages, dial indicators, bore gages, height gages, go/no-go gages, attribute gages, thickness and radius gages, squares and protractors, adjustable parallels, surface plates, optical comparators, optical center finders, grip gages, countersink gages, fastener height gages, rivet inspection gages, fastener inspection gages, gap inspection, and welding gages.

45 hours (Self-Paced) **NEW** 

#### 180 Electricity I

This extended, self-paced workshop consists of 24 units that bring the participant through the basics of electricity from power generation through the building blocks of electronics today. Electricity I topics include production, transmission and uses of electricity, atomic structure, circuits, current, voltage, power, resistance, ohm's and watt's laws, direct current, batteries, circuit analysis, electromagnetism and associated devices, AC waveform generation, transformers, capacitors, and semiconductors.

45 hours (Self-Paced) **NEW** 

#### **180 Electricity II**

This extended, self-paced workshop consists of 24 units that build upon the Electricity I workshop while adding more application-specific devices such as wires, connectors and circuit protection, DC, AC, and 3-phase motors, fiber optics, quality and safety, sensor technology, hand tools and techniques for wiring, electrical measurement and unit conversion, and resistance measurement equipment.

45 hours (Self-Paced) **NEW** 

#### **180 Production Techniques**

This extended, self-paced workshop consists of 24 units and includes a combination of electrical production techniques, the use and installation of a wide array of fasteners, and the use of several hand tools used widely in industry today. Topics include electrical terminals and splices, crimp lugs and terminals and associated tooling, coaxial cable, associated connectors, connector tools and assemblies, temporary fasteners, rivets, bolts, screws, and washers, threaded inserts, Hi-Loks, lockbolts, nut plates, blind rivets, identifying fasteners, fasteners and fits, securing and lock wiring fasteners, torques tools, files, hand reamers and lapping tools, hammers, punches and chisels, pliers and ratchets, scribes, optical center finders, and drill blocks. 45 hours (Self-Paced) NEW



#### 180 Team Building with Lean and SPC

This extended, self-paced workshop consists of 25 units and examines the basics of developing and managing a good team structure with an emphasis on lean manufacturing and statistical process control. Topics include working in a group, group communication, effective collaboration, life stages of a team, meetings, diversity, creativity, problem solving, decision making, conflict management, lean principles, the history of lean manufacturing, workplace organization, the 5S's (sort, straighten, shine, standardize, and sustain), intro to SPC, probability and variation, control chart and control chart analysis, process capability, and problem-solving tools.

45 hours (Self-Paced) **NEW** 

#### **180 Manufacturing Maintenance**

This extended, self-paced workshop consists of 17 units and addresses the basics of shop automation and associated drive mechanisms. The primary goals are to familiarize participants with the programmable logic controllers, hydraulics, and pneumatics. Topics include introduction to programmable controllers and digital electronics, types, functions, structure and physical integration of PLC, internal structure of a CPU, basic concepts of programming PLC, common applications of PLC, intro to hydraulics, theory, fluids and systems, intro to pneumatics, systems, the property of gases, air compression, and distribution.

45 hours (Self-Paced) **NEW** 

#### 180 Non-Destructive Examination I

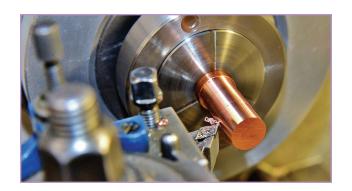
This extended, self-paced workshop consists of 16 units covering the basics of NDE with examination of the methods along with some of the testing types. Topics include "What is NDE?," NDE methods, careers, intro to visual testing, light and human eye, standard inspection techniques, visual testing equipment, manufacturing produced discontinuities, standards and procedures, visual testing of castings, visual testing of wrought metal, visual testing of welds, in-service visual inspection, magnetic particle inspection and examination, magnetism, and magnetic flux.

45 hours (Self-Paced) NEW

#### 180 Non-Destructive Examination II

This extended, self-paced workshop consists of 19 units that build upon the NDE I workshop, where there is a greater emphasis on theory and technique, with an emphasis on magnetic particle testing for metals. Topics include electricity and magnetism, cast and wrought ferromagnetic metals, secondary metal processing, intro to magnetic particle examination equipment and materials, both portable and non-portable, lighting equipment, magnetic particle materials, field testing devices, light meters, part preparation, technique selection, magnetizing currents, sample examinations, and magnetic particle examination standards.

45 hours (Self-Paced) **NEW** 







#### 180 Non-Destructive Examination III

This extended self-paced workshop consist of 17 units. In this final segment of this workshop series, greater emphasis is placed on examining commercial products that are in use, such as aeronautic parts. Topics include the NDE process, materials, metals manufacturing and processes, material properties, loads, stresses and discontinuities, fracture mechanics, personnel qualifications, visual testing, light, standard inspection techniques, visual testing equipment, hierarchy of product standards, visual testing of castings, rolled products, welds and industrial components.

45 hours (Self-Paced) **NEW** 

I enjoyed the hands-on material, questions and answers, sample of different shapes and measuring exercises.

GD&T Participant EBM Pabst, Inc.

#### **180 Introduction to Composites I**

This extended, self-paced workshop consists of 25 units. This session discusses composite materials and the processing that is used to manufacture them. Discussions take you through the factory floor, equipment used, curing and post-processing. Topics include background and history of composites, composite industries and products, advantages and disadvantages, safety and hazards, facility layout, contamination, layup and curing areas, fibers, tapes and fabrics, glass and carbon fibers, matrix types and properties, curing process, honeycomb core materials, material compatibility, galvanic reactivity, core potting compounds, fiber material storage, forming tools, coefficient of thermal expansion, forming tool inspection, cleaning and storage, rollers and sweeps, overhead laser system.

45 hours (Self-Paced)



#### 180 Introduction to Composites II

This extended, self-paced workshop consists of 36 units. In this follow-up session, there is greater focus on kitting, layup, and inspection of composite parts. Topics include kitting with a sheeter, by-hand or by an automated machine, ply-balancing, material splicing, wrinkles and gaps, pockets and voids, radius filler fabrication, bagging, layup equipment and processes, cure cycle, inspection of composites, visual, ultrasonic, and tap inspection techniques, damage assessment and composite re-pairs, repair tools and material, different layups, unidirectional 4-ply, carbon 8-ply with core, fiber-glass 6-ply wet layup, marking holes and drilling composites, enlarging holes, surface damage assessment and repair, disbonding damage assessment and repair.

45 hours (Self-Paced) **NEW** 

#### **180 Blue Print Reading Fundamentals**

This extended self-paced workshop consists of 20 units on the fundamentals of blueprint reading and interpretation. Students develop basic knowledge and skills in engineering drawing and blueprint terminology, views, line types, dimensions and tolerances, and symbols. The second half of the course expands on these skills with GD&T introduction, assemblies and fits, fasteners, wire bundle installation, electrical production illustrations, engineering communication, composite drawings, and work instructions.

45 hours (Self-Paced) **NEW** 





#### 180 Advanced Blue Print Reading and GD&T

This extended, self-paced workshop consists of 19 units for students who already possess basic blue print reading skills. The course includes advanced blue print skills and GD&T. Topics include assemblies and fits, fasteners, wire bundle installation, electrical production illustrations, engineering communication, composite drawings, and work instructions. The second half of the course covers the basics of GD&T, including terms and symbols, rules of GD&T, geometric tolerances, datums, and form, profile, orientation, runout, and location tolerance types. 45 hours (Self-Paced) **NEW** 

#### **180 Shop Math and Geometry**

This extended, self-paced workshop consists of 32 units and starts with a basic review of arithmetic skills manufacturing workers use regularly. These include arithmetic operations, fractions, decimals, number line, positive and negative numbers, Cartesian coordinates, and the metric system. Geometry topics include basic geometry, angles, lines, polygons, and triangles. Geometry is recommended as a prerequisite for GD&T.

45 hours (Self-Paced) **NEW** 

#### 180 Basic Blue Print Reading and Shop Math

This extended, self-paced workshop consists of 20 units. The course is for students who need basic blue print skills combined with the requisite arithmetic skills for the manufacturing workplace. Blue print topics include engineering drawing and blueprint terminology, views, line types, dimensions and tolerances, and symbols. Math topics include arithmetic operations, fractions, decimals, number line, positive and negative numbers, Cartesian coordinates, and the metric system.

45 hours (Self-Paced) **NEW** 

#### 180 GD&T and Geometry

This extended, self-paced workshop consists of 21 units. GD&T and Geometry is for students who already possess basic blue print and arithmetic skills and need to raise their skill set to the next level. Competence in geometry directly reinforces students' understanding of GD&T concepts. Geometry topics include basic geometry, angles, lines, polygons, and triangles. GD&T topics include terms and symbols, rules of GD&T, geometric tolerances, datums, and form, profile, orientation, runout, and location tolerance types. 45 hours (Self-Paced) **NEW** 

#### 180 Introduction to Manufacturing

and Quality

This extended, self-paced workshop consists of 24 units and provides an introduction to manufacturing and quality systems. This overview gives students a basic understanding of manufacturing concepts and the importance of quality systems. Manufacturing topics include advanced manufacturing, manufacturing history and technology, ideas to products, manufacturing design, quality and the environment, measuring success in manufacturing, and careers in manufacturing. Quality topics include ISO 9000, standards organizations, quality organizations, quality roles and responsibilities, quality concepts, the cost of quality, managing quality, quality documents, corrective and preventive action, introduction to SPC, probability and variation, the control chart, control chart analysis, process capability, problem solving tools, and problem solving.

45 hours (Self-Paced) **NEW** 

#### 180 Understanding Six Sigma

This extended, self-paced workshop consists of 22 units and provides a complete picture on the set-up, use, and tools of a robust six-sigma system. Course topics include six sigma organization, design, process elements, project management and planning tools, team dynamics and performance, problem-solving tools, process analysis and documentation, probability and statistics, collecting and summarizing data, probability distributions, measurement system analysis, process capability performance, hypothesis tests, design of experiment, SPC, implement and validate, and control plans. 45 hours (Self-Paced) **NEW** 

#### **180 Automation and Robotics**

This extended, self-paced workshop consists of 19 units and gives a broad look at shop control systems and robotics. Topics include intro to automation, systems and processes, process control systems, set point/comparator, PID controllers, multivariate processes, intro to robotics, safety, robot axes, robot manipulator, controller, end effectors, robot programs, and industrial applications. 45 hours (Self-Paced) **NEW** 

So valuable! I can immediately apply the learnings to my job.
The practice spreadsheet was very helpful. Great job!

Advanced Excel Participant Eemax Inc.

# Flexible courses for your company's future.

The nationally recognized Connecticut Manufacturing Workforce Development Initiative (CMWDI) is funding four-week, 45-hour apprenticeship training sessions. Courses will be offered online, on-campus, or in Goodwin University's advanced manufacturing mobile training lab. With the program's online platform, students can review their curriculum at their convenience – anywhere, anytime.

Apprentices are guided and supported by experienced Goodwin faculty and training staff, knowledgeable in the students' chosen course of study.

Learn more at www.goodwin.edu/majors/manufacturing/cmwdi



Having you teach the basics of LEAN reinforced the concepts we've been trying to introduce. I am excited to see how this develops within our organization.

Zac Shannon
Director of Hardware Operations, Datto, Inc.



School of Business, Technology, and Advanced Manufacturing 3 Pent Road East Hartford, Connecticut 06118 www.goodwin.edu/manufacturing