Penn College Apprenticeship News

written by Lauri Moon | March 23, 2022

New Apprenticeship Cohorts Forming

Penn College Apprenticeship Cohorts to begin in August 2022! Topics include:

- Industrial Manufacturing Technician (IMT)
- Intro-Mech
- Machining Fundamentals – CNC Machining Year 1
- Mechanical Components – Mechatronics Year 1
- Robotics – Year 1

IMT is DESIGNED FOR NEARLY ANY OPERATOR OR TECHNICIAN. The Industrial Manufacturing Technician (IMT) program emphasizes foundational skills for a broad range of manufacturing roles. Technical competency development is combined with communication, teamwork, and other business skills to train a well-rounded apprentice.

Intro-MECH is a one-year introduction to mechatronics and maintenance aligned to NIMS Industrial Technology Maintenance (ITM) credentials. This course consists of four, 36-hour modules (144 hours total) each dedicated to one of four core mechatronics competencies: Mechanical Systems, Fluid Power-Pneumatics/Hydraulics, Electrical Systems and Electrical Controls (PLCs & VFDs).

Machining Fundamentals provides a fundamental knowledge of machining processes. Topics include machining technologies, shop safety, understanding drawings, layout work, hand tools, processes of drilling, lathes, grinding and milling machines. Emphasis is on production performance as a basic machinist or CNC operator who is training for advancement in the CNC precision machining field.

Mechanical Components provides apprenticed and associate technicians with fundamental knowledge of industrial mechanical systems and component topics considered necessary by subject matter experts for successful completion of routine mechanical maintenance and troubleshooting tasks on advanced manufacturing equipment.

Robotics provides maintenance technicians with robotic and automation systems repair responsibilities, the skillsets for troubleshooting the PLC interfaces comprising most modern manufacturing robotic/automation systems. This course strengthens existing PLC knowledge with emphasis on the control interface between PLC's and robotic automated process equipment.

Sessions attended via two-way live streaming internet at employer's site via the iris system. All sessions are recorded and available 24/7 through Penn College's Learning Management System so off-shift technicians may join in!

Note: Manufacturers are eligible for grant funding through Penn College's Modular Industry-Driven Apprenticeship Strategies (MIDAS) Grant that will cover a significant portion of the tuition. Anyone can participate at the full tuition.

For more information contact apprenticeship@pct.edu or call 570.327.4775.

Pennsylvania Manufacturing Advisory Council Seeks Input From Manufacturers

written by Lauri Moon | March 23, 2022

The Pennsylvania Manufacturing Advisory Council was formed last year as a public-private consortium. Its goal is to provide the Commonwealth's legislative leaders and leading gubernatorial candidates with policy, program and legislative priority recommendations that will enhance the competitiveness of Pennsylvania's nearly 15,000 manufacturing firms and their 585,000 employees. The Council has heard from more than 130 PA-based manufacturers through roundtables, town halls and other venues and **now wants to hear from other manufacturing leaders through their completion of a short survey**.

Manufacturers all across the Commonwealth are being asked to invest 8 minutes of their time to take an online survey that asks their opinions and experience in the areas of workforce, supply chain, technology and the Commonwealth's overall business climate. **Please submit responses by April 8**.

Manufacturers, CLICK HERE to access the survey. More information about the Pennsylvania Manufacturing Advisory Council can be found here.

Success Story: Custom Container Solutions, LLC Surpasses Production Objectives with IMC Support

written by Lauri Moon | March 23, 2022

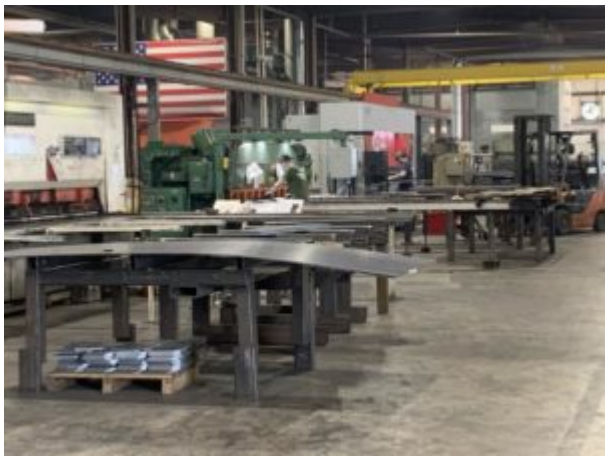
IMC has been working with Custom Container Solutions (CCS), an area manufacturer of industrial roll-offs, for several years. Past projects have included operational improvements, ERP selection, HR policies, hiring and selection practices and improved job training.

As CCS has grown, they transitioned to a larger facility and now have three production lines instead of one. Each line makes a certain type of unit.

One of the lines makes smaller roll-offs and has proved to be most challenging in terms of reaching desired throughput quotas. The company contacted IMC to

provide support for their efforts to improve production results on the small roll-off production line.

IMC proposed a 3-day value stream mapping (VSM) initiative that also included the supporting fabrication area. The VSM involved workers and supervisors from both production and fabrication along with CCS management and IMC facilitators. The VSM effort started with a map of the current state of both the fabrication support and production operations including critical facts and data on task times, wait times, throughput history and layout, sequence and flow.



A direction and quantitative goals were established, and a future state map developed. Within the initiative, numerous opportunities for improvement were identified, prioritized and structured to ensure successful implementation. Included were multiple visits to the factory floor and many coaching opportunities by IMC's VSM facilitator.

The result to date (2 months following the end of the initiative) is that the line has surpassed the production objectives and is now operating at a consistent level of 25-30% above pre-initiative throughputs. The improvements made in fabrication have also led to improved operations for the other production lines.

"IMC has played a crucial part in the success of CCS – it's like the gift that keeps on giving. IMC has helped us recognize system failures and ask the right questions of our team members without fear. Jeff, Russ and Jen spent multiple days working with our team digging deeper then we could ever dig because we needed outside eyes to see the problems. By implementing workflow processes that are cyclical, we are able to pull the work down the line versus pushing it down the line, which creates a more efficient and happier workforce which, in turn, increases productivity and reduces absenteeism significantly. As we identify areas of improvement, we utilize IMC and its expertise to improve. We are grateful for the help and we look forward to working with IMC again in the future." Chuck Williams, General Manager, Custom

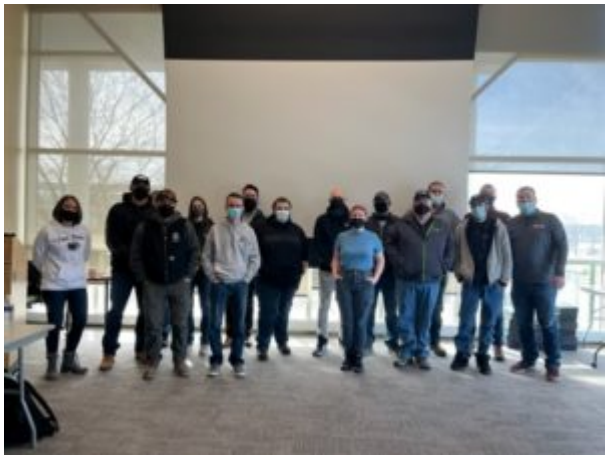
Container Solutions

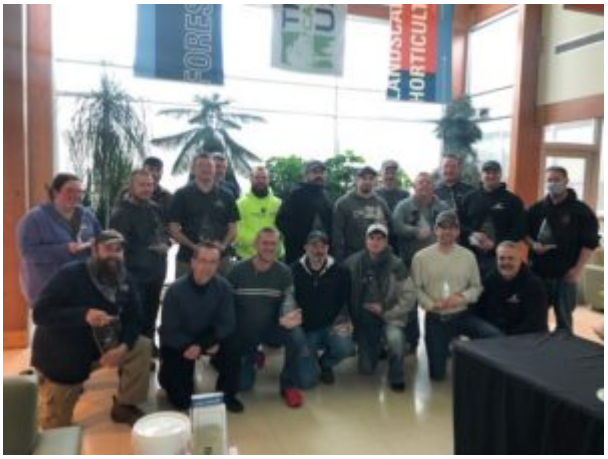
This project was funded, in part, by a grant made available by PennTAP.

IMC Announces Winter 2022 Lean Manufacturing Level One Certification Graduates

written by Lauri Moon | March 23, 2022

IMC is excited to announce the latest graduates of our Lean Manufacturing Level One Certification program.





Congratulations: Strong Spas, Timberhaven Log Homes, LLC, Susquehanna Mills, Pik Rite, Inc., Jersey Shore Steel Company, High Steel Structures LLC, Q.E. Manufacturing, Atlantic Culinary Environments, Inc., ANDRITZ, Actuated Medical, Inc., Philips Ultrasound, TRS Technologies, Remmey – The Pallet Company, SilcoTek Corporation, DiamondBack Covers, Steller Floors and Architectural Precast Innovations, Inc.

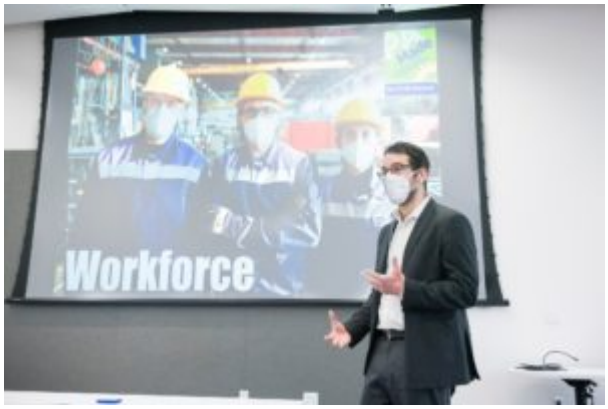
IMC Hosts PA House Democratic Policy Committee Meeting & Manufacturing Roundtable

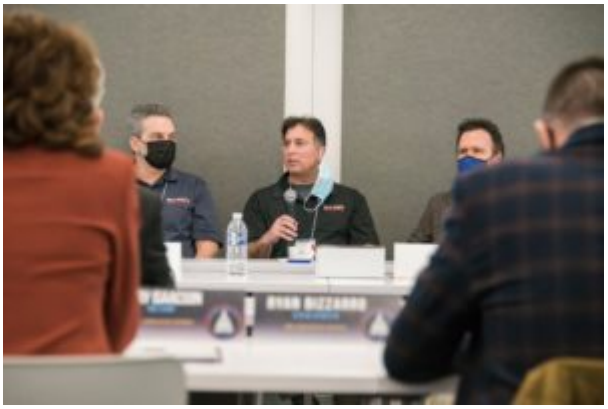
written by Lauri Moon | March 23, 2022

On Tuesday, February 1, 2022, IMC and the PA Industrial Resource Center (IRC) Network had the opportunity to host the PA House Democratic Policy Committee Meeting and Manufacturing Roundtable at Penn State University's Innovation Hub. Attracting and retaining a qualified workforce, implementing advanced manufacturing technologies (AMTs) and creating localized supply chains were among the topics discussed during the Policy Committee Meeting.

Thanks to Rep. Scott Conklin and all the Representatives for taking the time to hear from manufacturing leaders across Pennsylvania. We appreciate the Policy Committee's support of PA manufacturing and the mission of the IRCs. Special thanks to Daniel Lutz and Marc Dagata from Metal Integrity, Dr. Tom Kane from Restek Corporation, and Ben Eltz from DiamondBack Covers for their participation on the manufacturing roundtable.

020122 PA House Democratic Policy Committee Mtg Press Release





Success Story: IMC Client Achieves Highest Safe Quality Food 9.0 Certification Rating of “Excellent”

written by Lauri Moon | March 23, 2022

Founded in 2006, Lang’s Chocolates LLC is a family owned and operated manufacturer of handcrafted fine chocolate confections sold at their retail location in downtown Williamsport, PA, as well as, sold and shipped to a worldwide customer base via their online storefront. Father and son, Robert and William Lang (Master Chocolatier) create and oversee the gourmet products, ensuring the highest quality ingredients are used in production.

Over the past two years, the company has been expanding into providing their own products, such as chocolate chips, as ingredients to other manufacturers of food products. This led to a substantial opportunity to increase company revenues by opening new markets in the US and worldwide as an ingredient

manufacturer/supplier.

Due to regulations and standards that are required and requested as conditions of doing business with this market and to fully develop and execute on this substantial new market opportunity, Lang's Chocolates was required to develop a Hazard Analysis and Critical Control Point Plan (HACCP) and become SQF (Safe Quality Food) trained and certified, as recognized by the Global Food Safety Initiative (GFSI), and ultimately required by the Food & Drug Administration's (FDA) Food Safety Modernization Act (FSMA) by 2021.

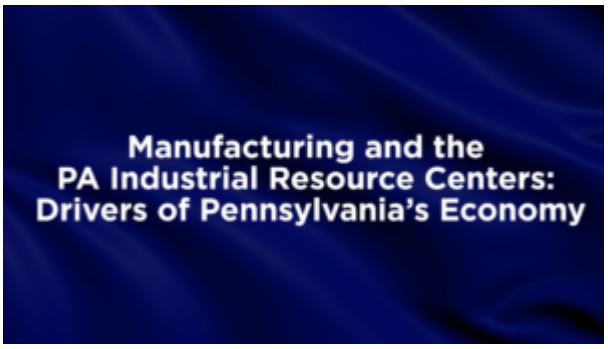
The company reached out to IMC, who was able to partner with Lang's and an exceptional third-party consultant to successfully prepare them for the audit, ultimately resulting in the highest SQF 9.0 certification rating of "Excellent". The company is currently 1 of only 37 confectionary companies to achieve this level of certification in Pennsylvania. This also allowed the company to execute a planned 6300 square foot expansion into a new manufacturing facility and resulted in more than $500,000 in new ingredient market sales (and growing), as well as the creation of several new jobs.

Robert Lang enthusiastically credits the skill and experience of the SQF consultant, Martin Ziegler, with their successful certification efforts. "His background and knowledge were so relevant, and his delivery set a solid foundation upon which we could build for our re-certification as well."

Manufacturing and the PA Industrial Resource Centers:

Drivers of Pennsylvania's Economy Video

written by Lauri Moon | March 23, 2022



Recently, the Pennsylvania Industrial Resource Centers (IRCs) released their 2020 annual report video, which outlines the strides our state's manufacturing industry has made this year in terms of the number of established manufacturing companies, job creation, dollars of goods produced and the number of exported goods – all despite the onset of COVID-19.

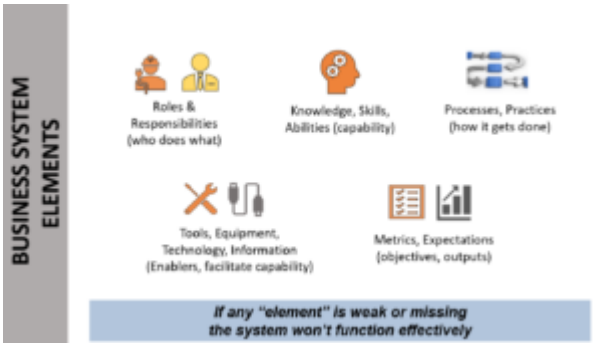
With the support of the national Manufacturing Extension Partnership (MEP) Program, the Pennsylvania Department of Community & Economic Development, our clients and our outstanding team members, the Innovative Manufacturers' Center (IMC) has played a key role in moving our regional manufacturers forward. Please click here to take three minutes to learn more about the size, strength and resiliency of our manufacturing base here in PA!

Please don't hesitate to leave your comments or email us at info@imcpa.com.

Two Minutes on Manufacturing Excellence – The Power of Systems Thinking (Part II)

written by admin | March 23, 2022

In our previous article (read first), we talked about the value of thinking models and in particular "systems thinking". To support systems thinking we identified the 5 Elements of a Business System. And we said that ***every business system is comprised of these same 5 elements.*** Now let's dig into systems thinking a little further.



I sometimes call systems thinking "instant business genius". And here's why.

Common Weak Thinking

By our nature, we tend to have two weaknesses in our thinking, especially when we view a problem.

One, we often think that what we know is what there is to know. We erroneously don't respect the fact that any of us can only know a percentage, often a small percentage, of what there is to know and understand about a situation or a problem.

The other common thinking weakness is we see problems "in isolation" – we might say within a small "immediately viewable" circle of causes and effects.

Those two "thinking weaknesses" lead to reactivity as a way of operating. They cause us to draw conclusions and implement solutions that range from totally ineffective to limited or partial success. Surely we can do better.

"Seeing" the System

In the workplace there are "3 levels of activity" going on all the time:

1. The specific tasks being done
2. The larger business process that the task is a part of
3. The overall output of the process (both expected and actual)

And along with that activity we have our "5 Elements of a Business System":

- Roles and Responsibilities (R&Rs)

- Knowledge skills and abilities (KSAs)
- Work processes
- Enablers (tools, equipment technology, info)
- Expectations and metrics

Systems thinking has our mind's eye "seeing" the workplace in terms of all 3 of those levels and all 5 of those elements all the time. We're seeing the workplace as a system. It's not hard to do if we make efforts to do it. And with that we carry an assumption. That is, that if any of those 5 elements is weak, let alone a combination of them, then the process and the outputs will almost certainly be sub-par.

Seeing Problems Systematically

So when a problem occurs, we immediately "see" the problem within the context of the system. It's easy to see how that perspective immediately defeats those two weak thinking tendencies. And do you now get why Deming said that problems are 93% because of the system?

In our next article we'll use an example to apply systems thinking and then begin to talk about another powerful thinking model.

Two Minutes on Manufacturing Excellence – The Power of Systems Thinking

written by admin | March 23, 2022

It's accurate to say that effective businesspeople routinely apply "thinking models" in their work and less effective businesspeople don't. That's a pretty sweeping generalization, but it holds up much of the time because thinking models consistently do two things.

1. They promote and enable clear thinking, reason, analysis and collaboration that lead to good decision-making and positive results.
2. They defeat our tendencies towards weak thinking that is often reactive, emotional and self-centric that lead to ineffective decision-making and poor results.

Anyone can be a good decision-maker

The good news is that these models can be applied by anyone who's willing to learn them and apply them. Clear thinking and good decision-making aren't so much a matter of "smarts" as it is a matter of "effective tools and methods" that are available to anyone.

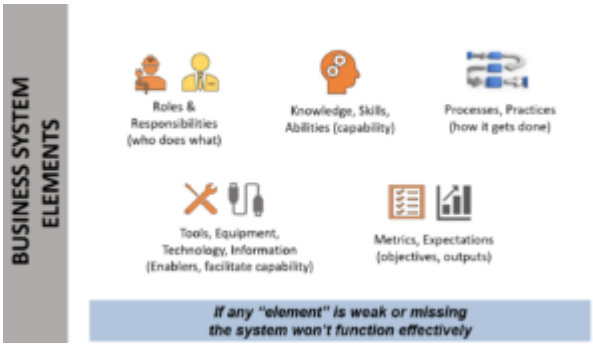
Systems Thinking Basics

There are three practical and useful thinking models we'd like to discuss. In this article, and the next, we'll consider one of those models called "Systems Thinking".

We hear the term "systems" a lot. Edwards Deming famously observed that 93% of problems are caused by "the system" and 7% by "the person". But what is "the system"? What is "system thinking"? And why is it so beneficial?

Systems and Business Systems

Generally speaking, a system is a bunch of parts working together to create an output. So, an automobile engine is a system. And on another level, the car itself is a system. OK, so what's a "business system"?



There are lots of systems in the workplace. We have training systems, production systems, continuous improvement systems, go-to-market systems, maintenance systems and more. ***And key to systems thinking is that, while the parts and pieces of each business system are different, <u>the primary "elements" that comprise each of those systems are the same</u>***. They're all made of the same following 5 elements:

1. Roles and Responsibilities (R&Rs) – Who does what
2. Knowledge, Skills and Abilities (KSAs) – The capabilities to fulfill the R&Rs
3. Work Processes – How work is done, both individually and collaboratively
4. Enablers – Technology, equipment, information, etc. that support the work effort
5. Expectations and Metrics – What's expected and results (ideally quantifiable)

What's the Value of System Thinking?

We'll talk more about the how-to and the benefits of system thinking in the next article. For the moment, let's just say that systems thinking enables us to:

- Ask the right questions
- Recognize "systematic weakness", and
- Identify "systematic solutions" that often yield sustainable positive results

Exactly the things that effective businesspeople do!

Two Minutes on Manufacturing Excellence – Assessing Your Factory Floor Training System

written by admin | March 23, 2022

In our recent blogs posts, we've discussed the challenging manufacturing environment of increasing customization and, with that trend, the need for improved job training as work continues to get more varied, complex and is always changing.

The last two posts identified initial steps to building an improved job training system. Today's is about another critical part of that effort.

The Training System Improvement Initiative

As with all continuous improvement initiatives, an effective improvement initiative requires, among other things, the following components.

- A clear understanding of the *current state* of whatever process is being considered for improvement
- An idea of what is preferred or desired, some kind of *future state* picture
- *Identification of the gaps* between current state and future state
- A *plan for closing the gaps* in a way that most effectively supports the organization's key business objectives

When developing an improved training system, one valuable tool that can help an organization to quickly develop those four components is an effective assessment tool.

IMC Training System Assessment Tool

Given the need for so many manufacturers to improve their job training, IMC has developed such a tool specifically for the purpose of assessing the organization's factory floor training system.

The "Training System Assessment" is structured around the 5 elements of a business system.

- Roles and Responsibilities (who does what in the current training system)
- Knowledge, Skills and Abilities (KSAs required to perform effective training and qualification)
- Work Processes and Protocols (how the training, qualification, etc. is performed)
- Tools, Equipment, Information (enablers required for effective training)
- Expectations and Metrics (clear requirements for the system and quantitative results)

The 5-part format gives logical categorization to the assessment. That makes the assessment easy to complete in just a few minutes. And the categories provide a quick understanding of the current state (component 1). The specific assessment

inquiries within the 5 elements provide a good start for the organization to picture and describe a desired future state (component 2). And the quantitative ratings that the company enters for each assessment item about its training system provide an excellent initial “gap analysis” (component 3). From there, you can develop component 4, a plan to close the most critical gaps.

IMC offers considerable knowledge and experience to support the efforts of manufacturers on any and all aspects of effective training system development. Contact your IMC business advisor or email info@imcpa.com to discuss further.