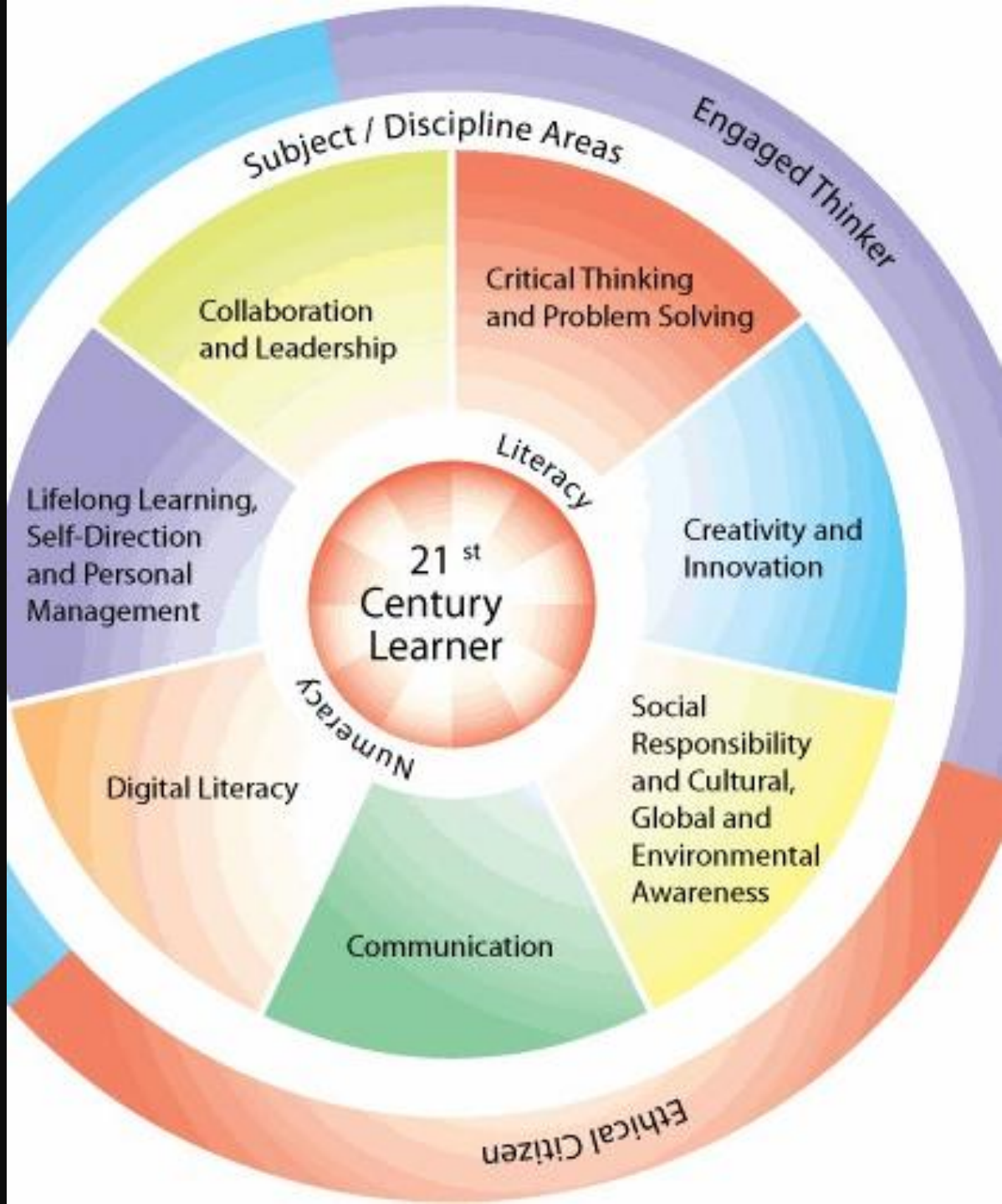
Jason Hoffman, Vice President
Jake Hoffman, K12 Implementation

Industry 4.0 Middle School Career Pathways

STEM Pathway Programs Feature:

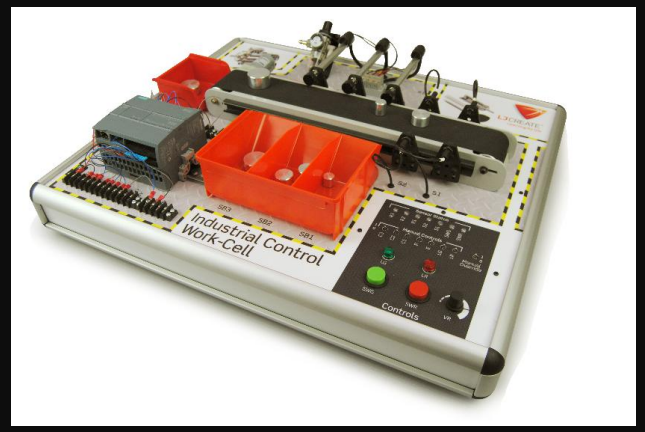
- Application of Science and Math
- Application of English Language Arts
- 21st Century Skills
- Accessible for ALL students
- Academic Support
- Career Exploration
- Everything you need
  - Curriculum
  - Learning Management
  - Innovative Hardware
  - Teacher Resources
  - Professional Development

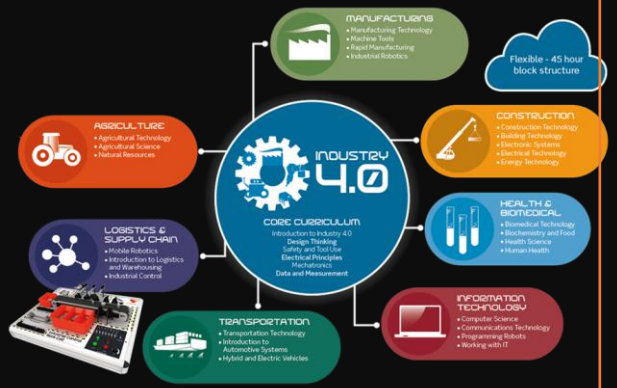


Industry 4.0 Pathways Program Grades 7- 9

- The Industry 4.0 program is designed to give students a foundation in how Industry 4.0 and STEM concepts are applied in career pathways and then develop their knowledge and skills in specific industry sectors:

- * Manufacturing
- * Construction
- * Biotechnology and Healthcare
- * Information Technology
- * Logistics
- * Transportation
- * Agriculture

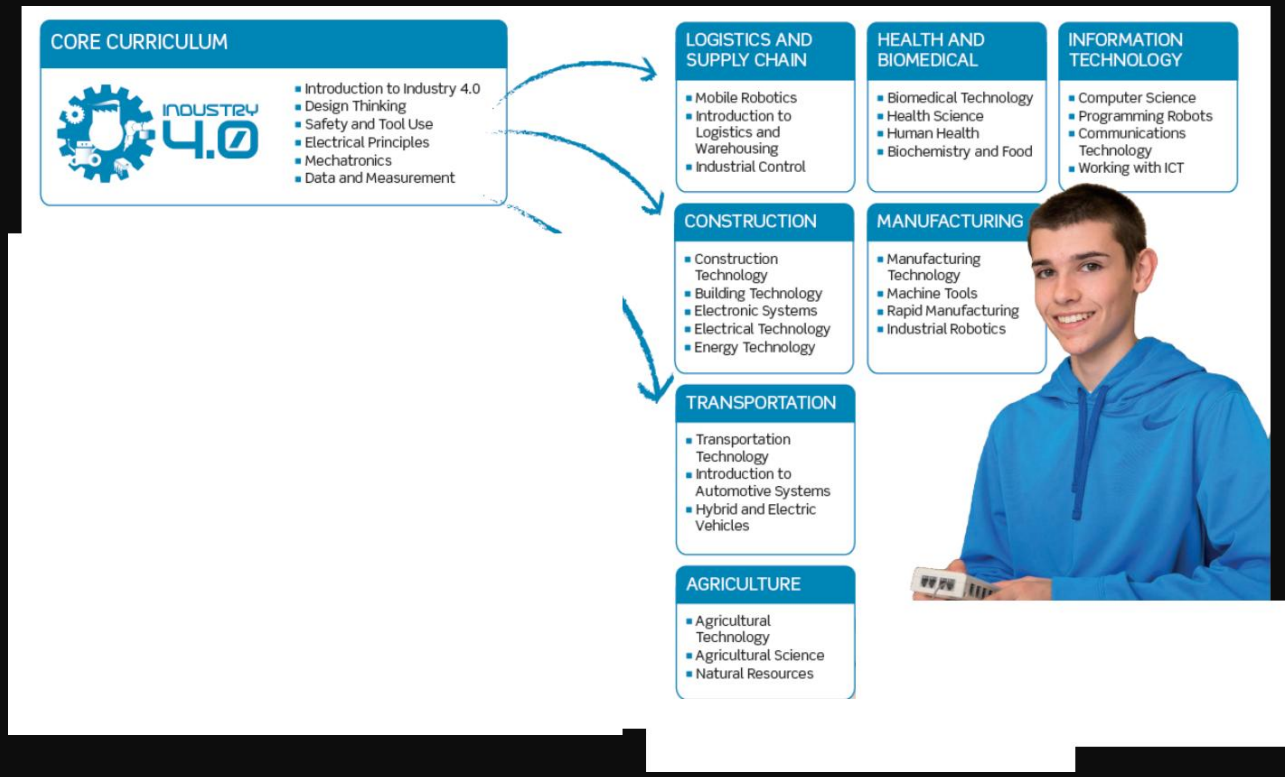




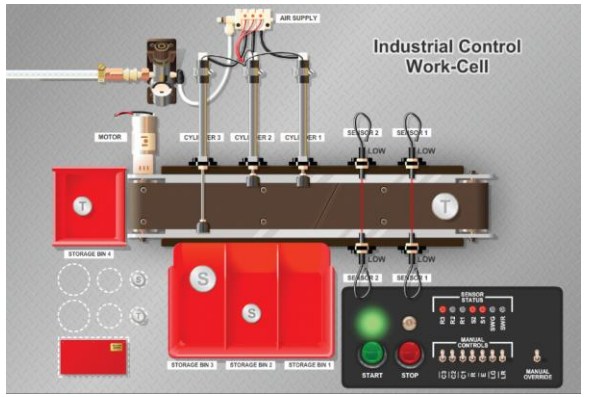
Industry 4.0 Career Pathways

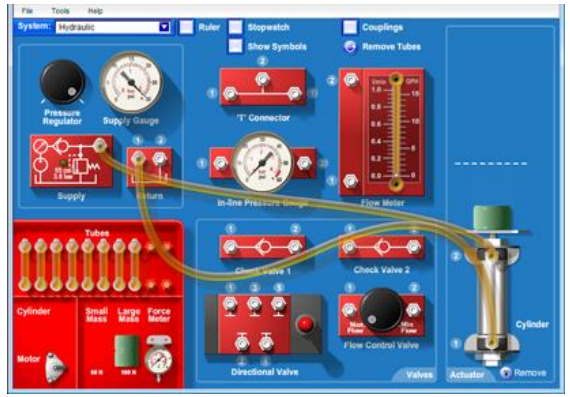
Students study a **Core** 45 block and then explore industry 4.0 concepts in specific sectors. Each sector is a 45 block of instruction.

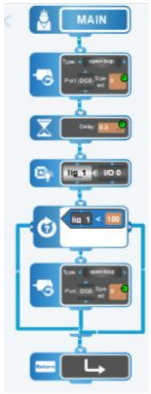
- 45 Lesson Blocks
- Flexible Implementation
- Project based Learning
- Active Learning
  - Engaging Hardware
  - Exciting Curriculum
  - Learning Management
- Accessible for ALL students
- Teacher Support
- Career Focused
- Integrated Academics

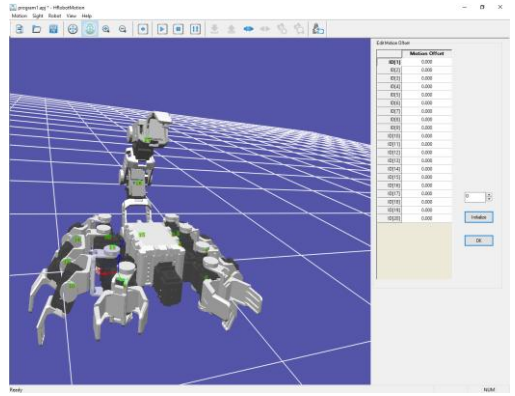


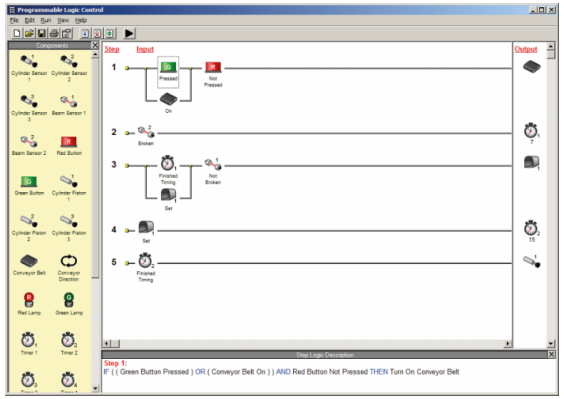
- Online Virtual Trainers

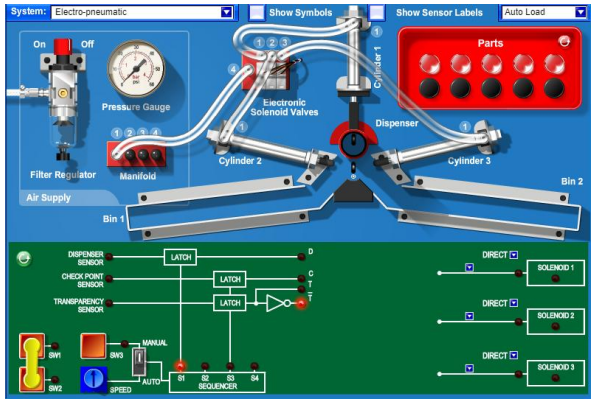












MANUFACTURING IS THE LARGEST OF THE **20** SECTORS OF OHIO'S ECONOMY

TOTAL U.S. MANUFACTURING JOBS
12,820,000

ABOUT **9** IN **10**
U.S. MANUFACTURING WORKERS ARE ELIGIBLE FOR HEALTH INSURANCE

$63K
AVERAGE SALARY
FOR OHIO WORKERS IN MANUFACTURING

3

OHIO IS THE THIRD MOST PRODUCTIVE MANUFACTURING STATE IN THE NATION MEASURED BY ECONOMIC CONTRIBUTION

ANNUAL PAYROLL FOR OHIO MANUFACTURING JOBS:
$44 BILLION
THE HIGHEST TOTAL WAGES OF ANY OHIO SECTOR

OHIO MANUFACTURING PROVIDES ABOUT **700K** JOBS

10,000
new jobs

Manufacturing is growing rapidly.

That's a third of the way to our 10-year goal for the region in just two years! The industry is growing overall and the need for new talent in new positions continues to expand.

Source: Team NEO

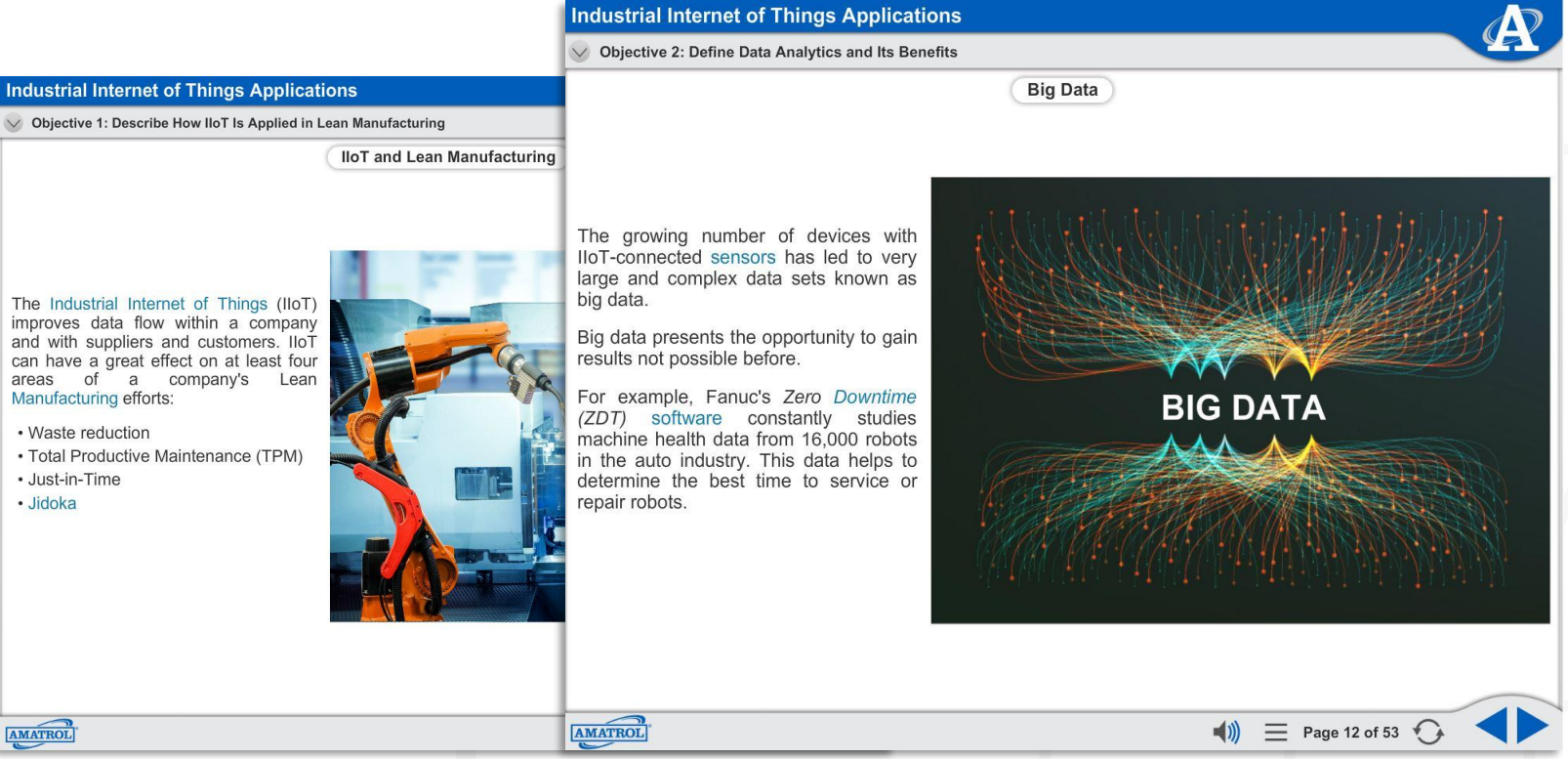
Industry 4.0 Fundamentals

AMATROL

CERTIFIED ISO 9001:201

Presented By: Jacob Hoffman,
Jason Hoffman

HANDS-ON EQUIPMENT



HIGHLY INTERACTIVE MULTIMEDIA!!!

- ANIMATIONS
- VOICEOVERS
- 3D GRAPHICS
- VIDEOS
- INTERACTIVE QUIZZES
- INTERACTIVE EXCERCISES

IN-DEPTH CURRICULUM

IT TAKES 200 MAN HOURS TO DEVELOP 1 HOUR OF CURRICULUM!

INDUSTRY4.0

Learning Program

Industry 4.0 Fundamentals

END OF THE 18TH CENTURY

INDUSTRY 1.0
Mechanization

Introduced mechanization of production by using water and steam to increase production capacity and productivity, versus manual craft work

1784 First mechanical loom

START OF THE 20TH CENTURY

INDUSTRY 2.0
Electrification

Introduced labor-based mass production (assembly lines) powered by electrical energy

1870 First production line, Cincinnati slaughterhouses

START OF THE 1970S

INDUSTRY 3.0
Automatization

Introduced electronics and computers to replace manual work by stand-alone robotic systems

1969 First programmable logic controller (PLC), Modicon 084

PRESENT

INDUSTRY 4.0
Cyber-Physical Systems

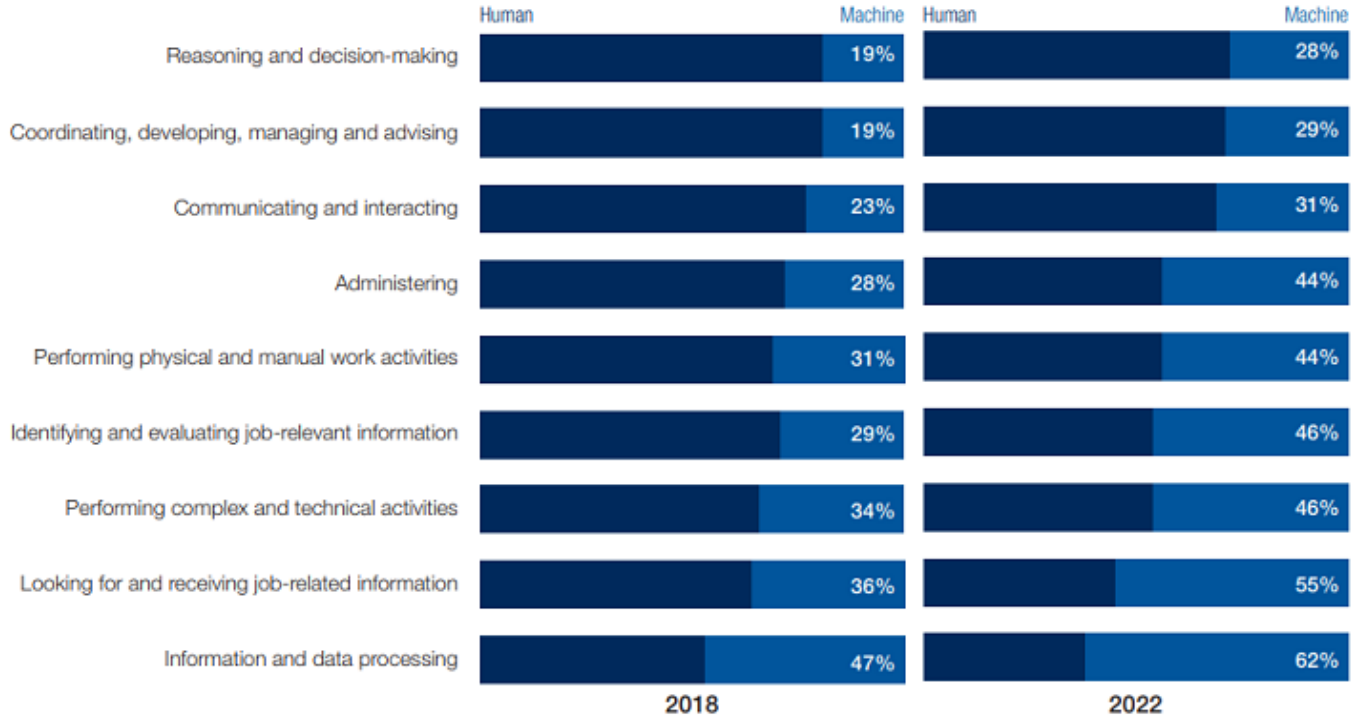
The convergence of physical, digital, and virtual environments through **Cyber-Physical Systems (CPS)** and the **Internet of Things (IoT)**

2018 AWS, ChatGPT, Watson

Rapid Transition to Automation

The Future of Jobs Report 2018

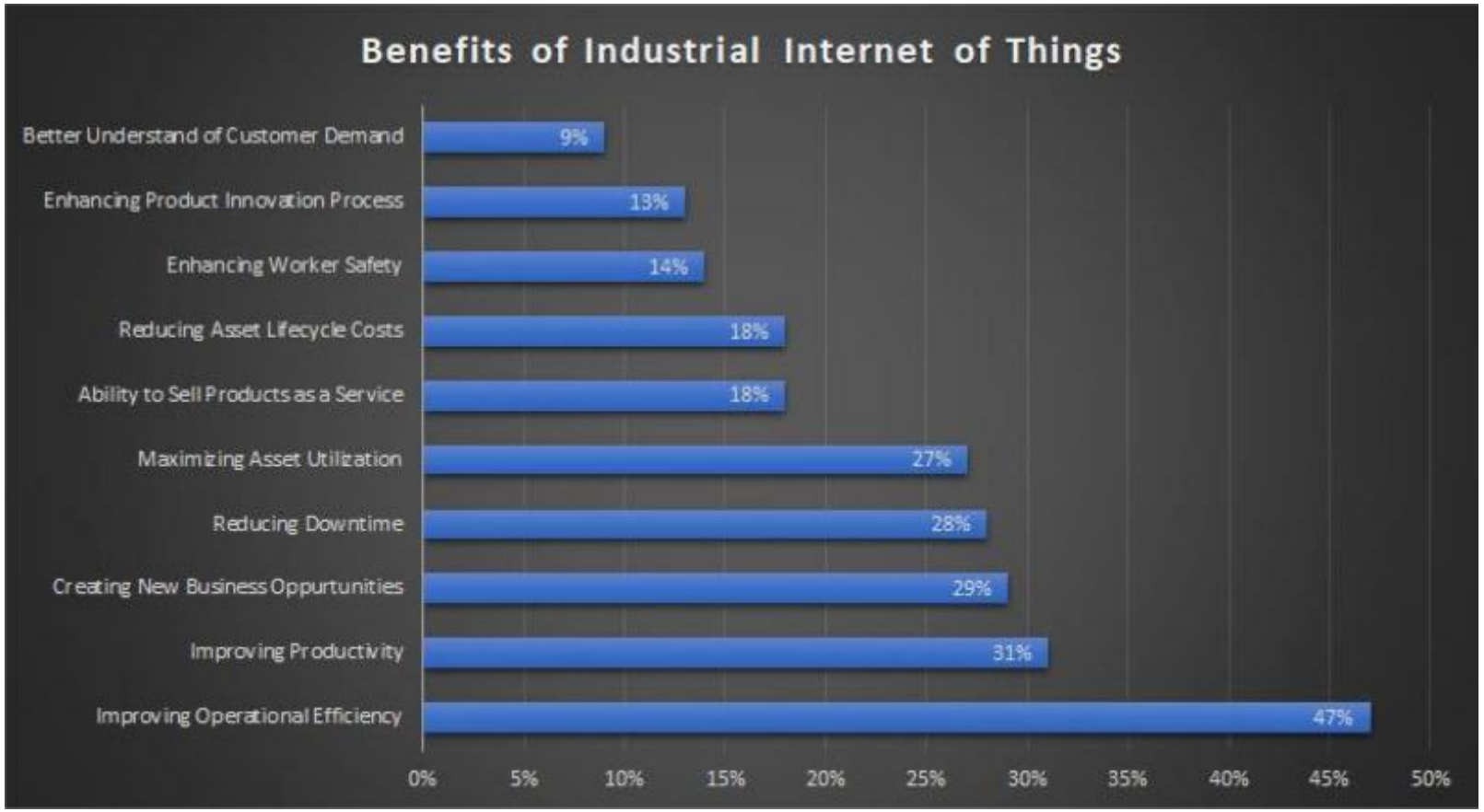
Figure 5: Ratio of human-machine working hours, 2018 vs. 2022 (projected)



Source: Future of Jobs Survey 2018, World Economic Forum.

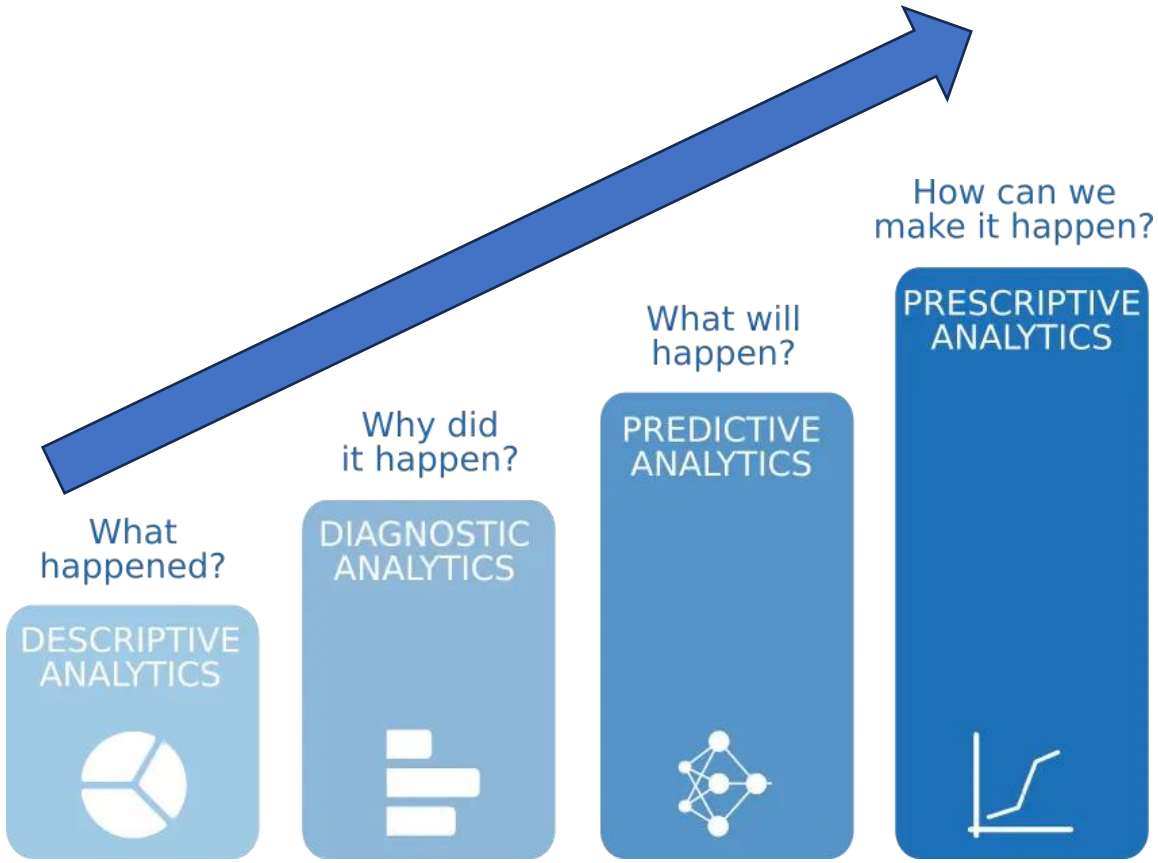
What does the Modern Smart Factory Look Like?

Benefits of IIOT (Industrial Internet of Things)



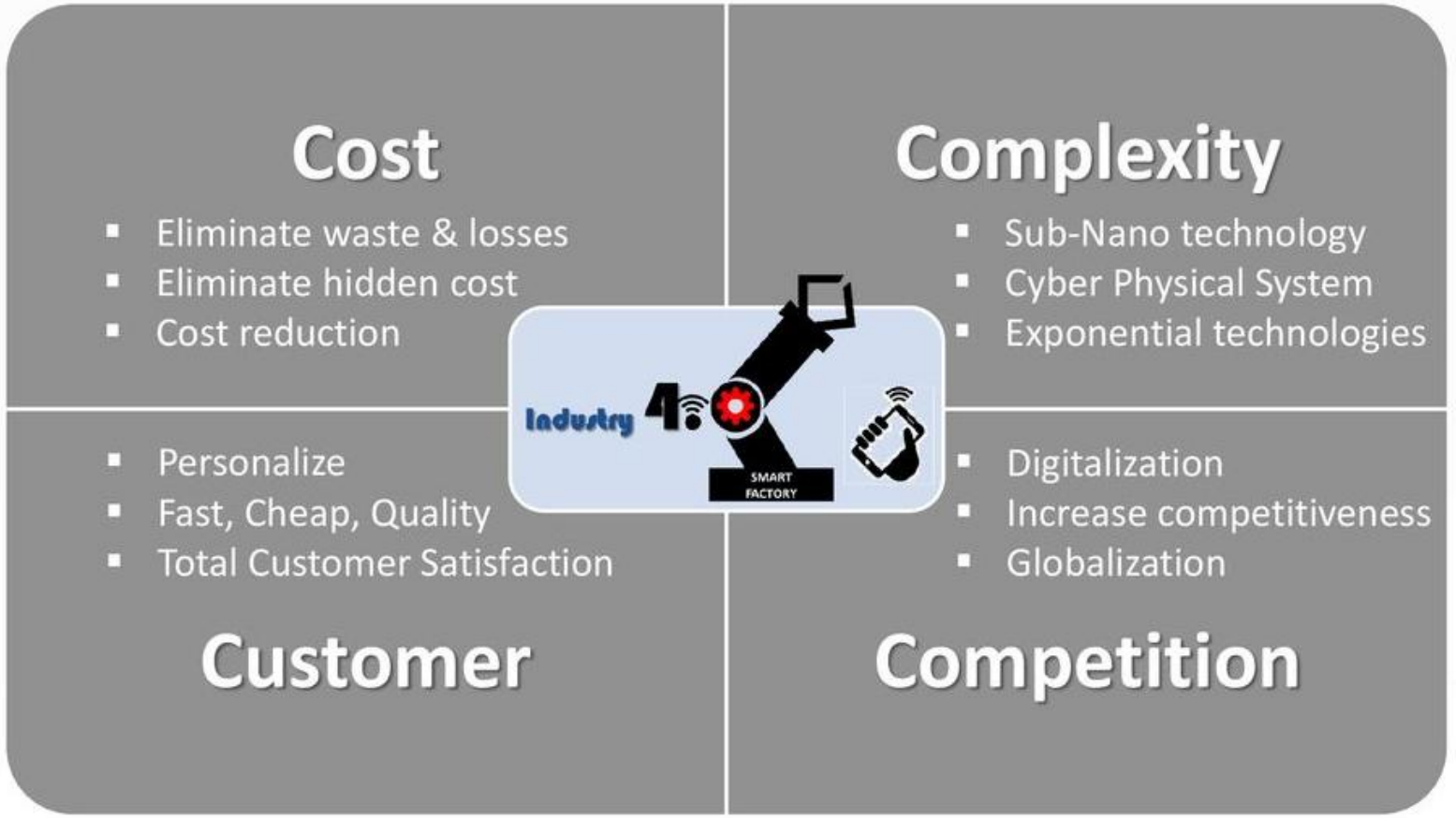
Data Analytics

- Increasing Intelligence & Improving Performance



Why We Need Industry 4.0

- Strain on Human Resources: More jobs less people
- Demand for automation: Jobs are becoming increasingly automated
- Cyber Security: Data Security
- Data Analytics: Predictive Maintenance, Making Data Driven Decisions
- Competitive Advantage: Globalization
- Increasing Complexity:



Amatrol High School Program

Industry 4.0 Fundamentals

High School Industry 4.0

High School Industry 4.0

4 Course Industry 4.0 Program

Course 1: Introduction to Mechatronics

Course 2: Introduction to Industrial Control Systems

Course 3: Certification Prep Courses (SACA, FANUC & MSSC)

Course 4: Introduction to the Industrial Internet of Things

Industry 4.0 Fundamentals

A complete, four-semester program

65 Hours per Semester

Components of Amatrol's I4F Learning System

Teach Hands-on Skills

Develop Online Curriculum (Approx. 400+ Hours)

- 24/7 Access to LMS
- High Quality Graphics
- Virtual Trainers

INDUSTRY4.0
Learning Program

Project Based Learning

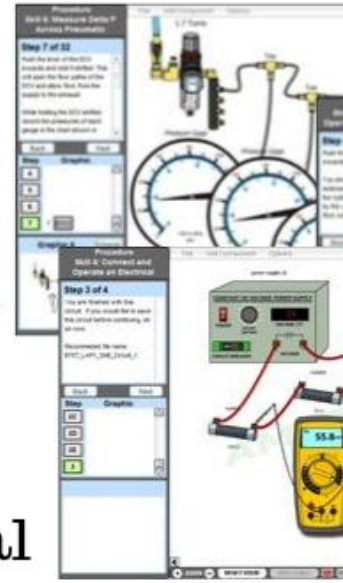
- Mini Projects

Develop Instructor Resources

- Instructor Guide
- Installation Guide
- Instructor Training

eLearning

AMATROL®
CERTIFIED ISO 9001: 2015



Virtual Simulators

I4F Curriculum

INDUSTRY4.0
Learning Program

I4F Virtual Trainers

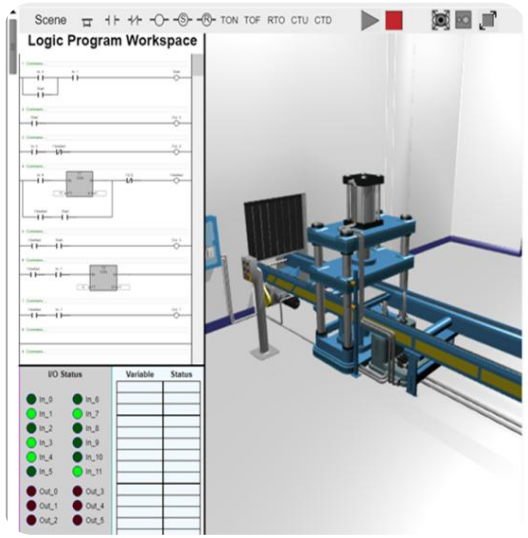
- **Electrical:**
- (T7017A) Electrical Sys.
- Electrical Control (96-ECS1)

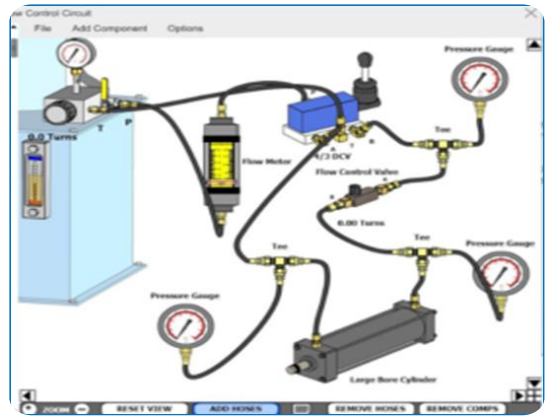
- **Fluid Power:**
- Pneumatics (96-PNE1/85-BP)
- Basic Hydraulics (85-BH)

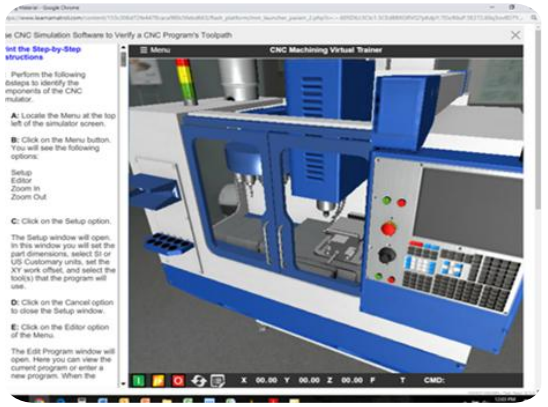
- **Machining:**
- CNC Programming and Operation

- **Measurement:**
- Measurement Tools 1 (950-MES1)

- **PLC's:**
- Basic PLC Programming







Industry 4.0 Building Blocks

Teaching Skills Needed for Industry 4.0

Building Block 1
- Safety
- Quality
- Lean
- Soft Skills

Building Block 2
- AC/DC
- Pneumatics
- Mechanical
- Hydraulics
- Thermal
- Hand Tools
- Materials

Building Block 3
- Control Systems
- Motor Control
- Robots
- PLC's
- CNC
- VFD's
- Drives

Building Block 4
- Sensors
- Smart Sensors
- Smart Devices
- Data Collection

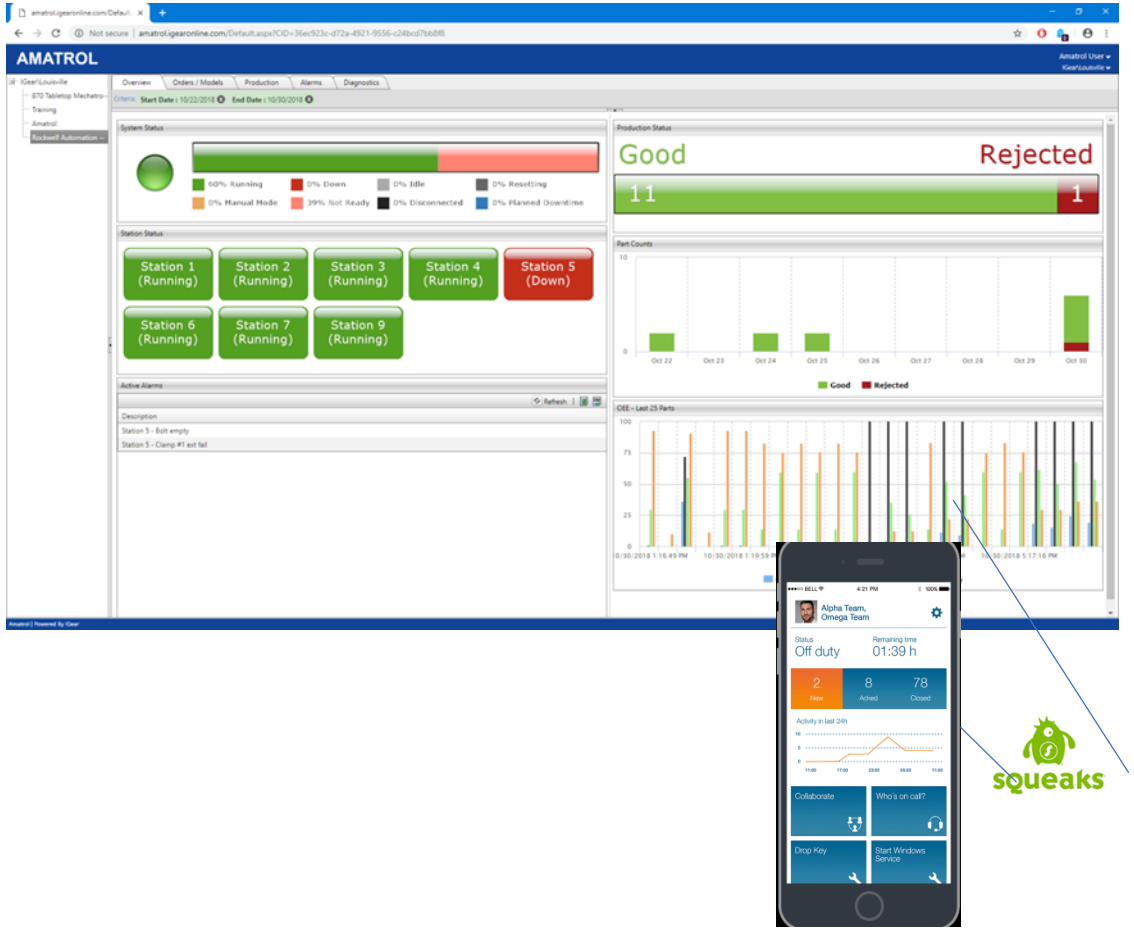
Building Block 5
- Industrial Networking
- Ethernet
- Profinet
- Wireless
- Network Security
- Routers
- Servers
- Switches
- IP Addresses

Building Block 6
- Data Analysis
- Continuous Improvement
- Statistical Analysis
- Data Delivery

IGEAR

Manufacturing Execution:

- **87-MEAB53A – Allen Bradley**



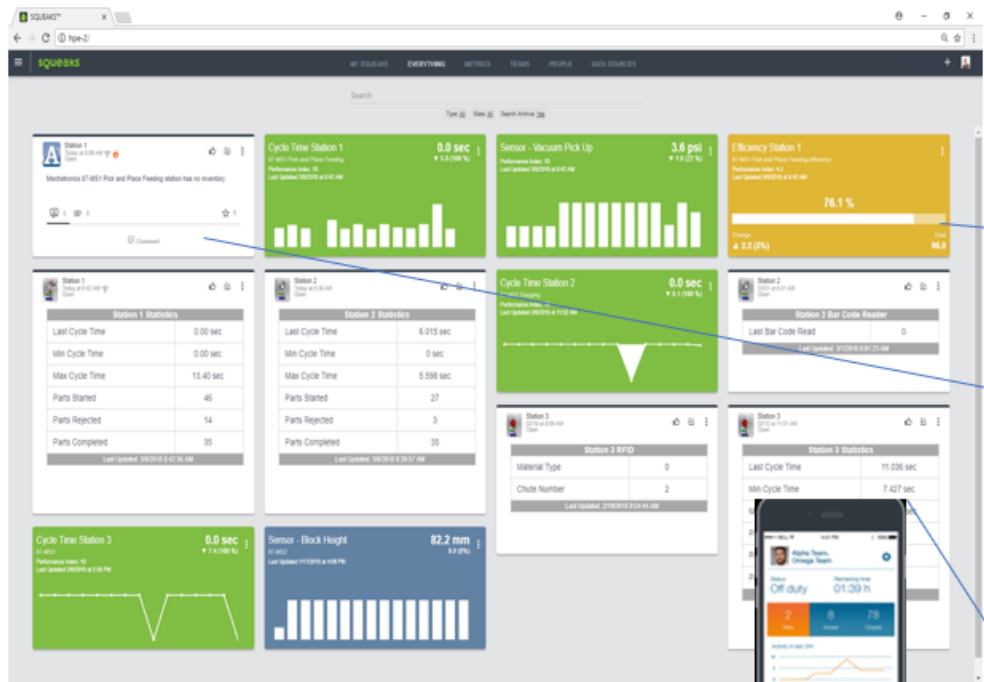
IGear: PULSE (MES)

- Cloud based Manufacturing Execution Software
- Display of Real-time Manufacturing Data
  - Current System Status
  - Active Alarms
    - Alarms /station
    - Alarms / specified time
- Production data
  - Total Parts
  - Quality Information
  - Rejected Parts
  - Good Parts
  - Production History
- Equipment Performance
  - Tracks OEE over last 25 parts
  - Tracks OEE for each Station
  - History of OEE
- Order Entry / Tracking
  - Order @ HMI – on location
  - Enter “Remote” Custom Orders
  - Order History
  - Order Tracking
- Diagnostics

IGEAR

Visual Communications:

- **87-VCAB53A – Allen Bradley**



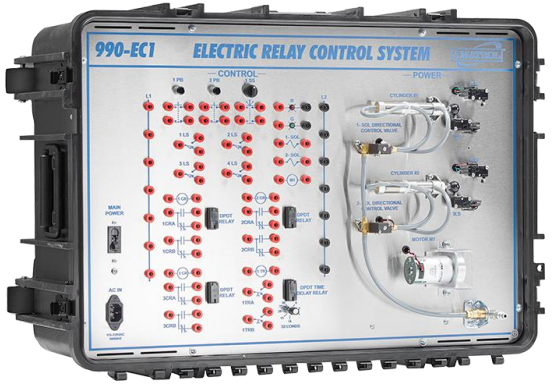
IGear: SQUEAKS

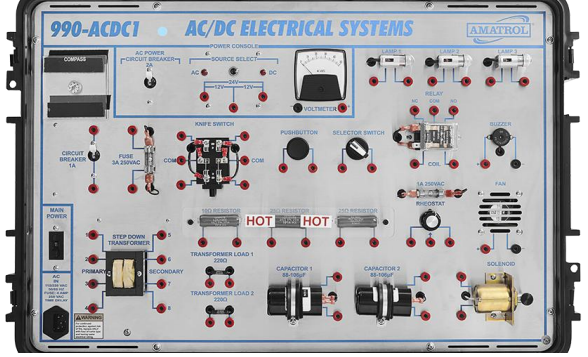
- Cloud based – Data Acquisition Software
  - Data accessible anywhere, including mobile devices
- Data is retrieved from each Smart Sensor
- SCADA Software
  - Monitor real-time process status through graphic display
- Maintenance Management
  - Reduce Equipment downtime
  - Notification of preventive maintenance
  - Mobile Push Notification to maintenance team members in response to a malfunction
  - Workflow and Escalation Rules
  - Messages between individuals and team members
- More DATA Helps Companies
  - Make smarter decisions
  - Communicate system problems
  - Minimize downtime

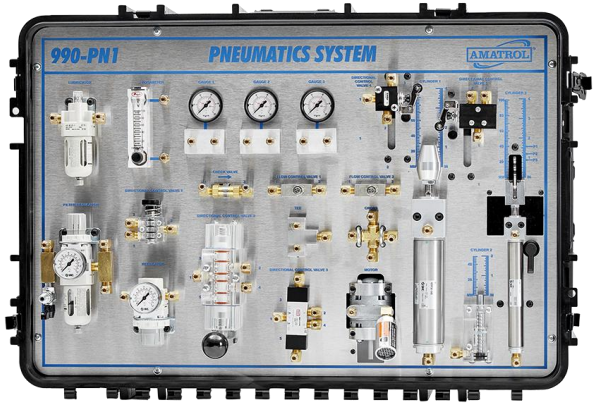
Download Squeaks Mobile App – Apple/Android

I4F Course 1: Introduction to Mechatronics

- **Topics include:**
  - Industry 4.0 Principles 1
  - Safety (Haz Mat, Fire, Electrical, PPE)
  - Hand Tools 1 (Skill Boss)
  - Basic Measurement
  - Print Reading 1 & 2
  - Precision Measurement 1 & 2
  - Mechanical Drives 1
  - Fluid Power 1
  - AC/DC Electricity 1 & 2
  - Electrical Relay Control 1
  - Robot Programming 1 (Simulation)
  - Electronic Sensors 1
  - Mini Projects
  - Field Trips
  - Class Discussion



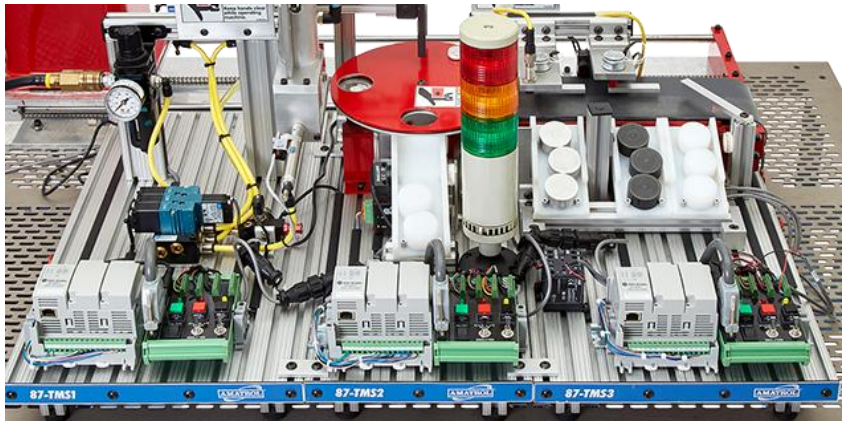




I4F Course 2: Introduction to Control Systems

Topics include:

- Industry 4.0 Principles 2
- Mechanical Drives 2 & 3 (Skill Boss)
- Fluid Power 2 & 3 (Hydraulics & Pneumatics)
- Electronic Sensors 2
- Electric Relay Control 2
- Programmable Controllers 1, 2 & 3
- CNC Machines 1 & 2
- Robot Programming 2
- Ethernet Network Communications 1
- Mechatronic Systems 1
- Mini Projects (Skill Boss)
- Field Trips – Class Discussion



FANUC

MSSC

Educational Robot Cell

Model Number: EDU-CELL-RV2

Introducing the Educational Robot Cell featuring Mitsubishi Electric's RV-2 Series industrial robot. This robot cell is ideal for high schools, technical colleges, and universities offering basic to advanced industrial automation curriculum. Flexible in design and configuration, the RV2 robot cell can be customized for added functionality. Options include safety, gripping, additional I/O and integration into a CNC machine or other industrial automation equipment for more advanced training. Coupled with Mitsubishi Electric's Basic Robot Programming course materials, this robot cell aligns with general learning standards for robotics and automation, provides hands-on experience with industrial robotics, and offers students the opportunity to earn industry-recognized credentials.

PURPOSE

Featuring the RV-2 Series robot, this cost-effective cell provides quick and easy setup, high performance and accuracy, safety-first functionality, advanced learning, and maximum portability. It is designed to allow for the simulation of real-world industrial applications in the classroom or lab environment such as pick & place, material handling, labeling, packaging, and palletizing. For those with no prior experience, integration is seamless by the accompaniment of our course materials, intuitive software, robust safety features, and portability. This simulator is a great tool for students wanting an introduction to robotic applications commonly found in industrial automation.

Standard Options

- Aluminum portable stand with lockable casters
- Area safety scanner
- Emergency stop
- Tower light
- Basic Robot Programming course materials
- RT ToolBox3 software

Additional Options

- EDU R86TB enhanced teach pendant with 7 meter cable
- EDU R32TB basic teach pendant with 7 meter cable
- EDU teach bracket (machined bracket for teach pendant)
- EDU-MEAGRP-RG2 gripper kit
- EDU M90 SIM (Direct robot control for integration into a CNC machine)

Specifications

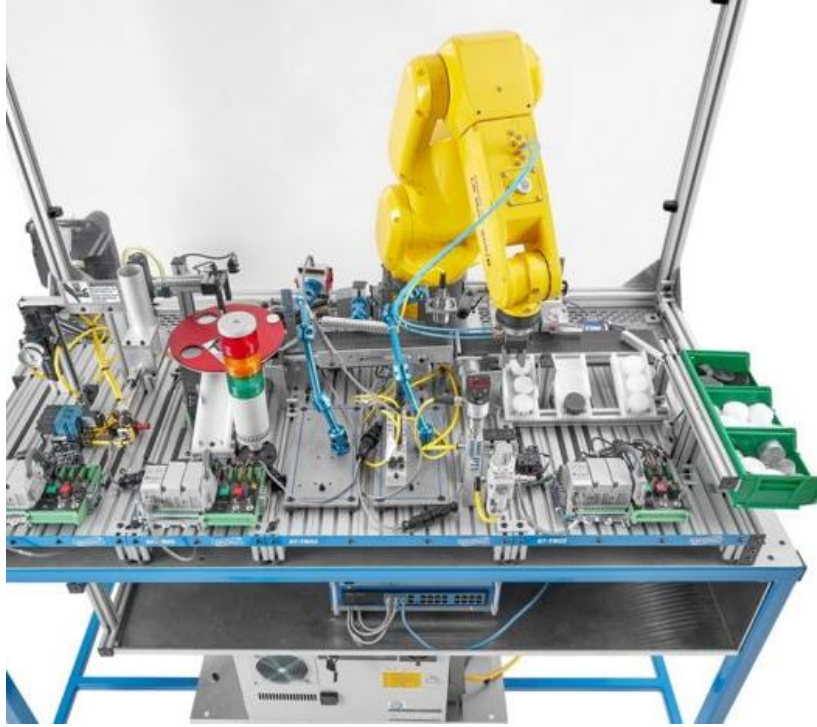
Payload Capacity	2 kg
Maximum Reach	649 mm
Axes	6 (J1-J6)
Maximum Speed	9027 mm/sec
Position Repeatability	0.02 mm
Controller Type	CR750 or CR800
Software	RT ToolBox3

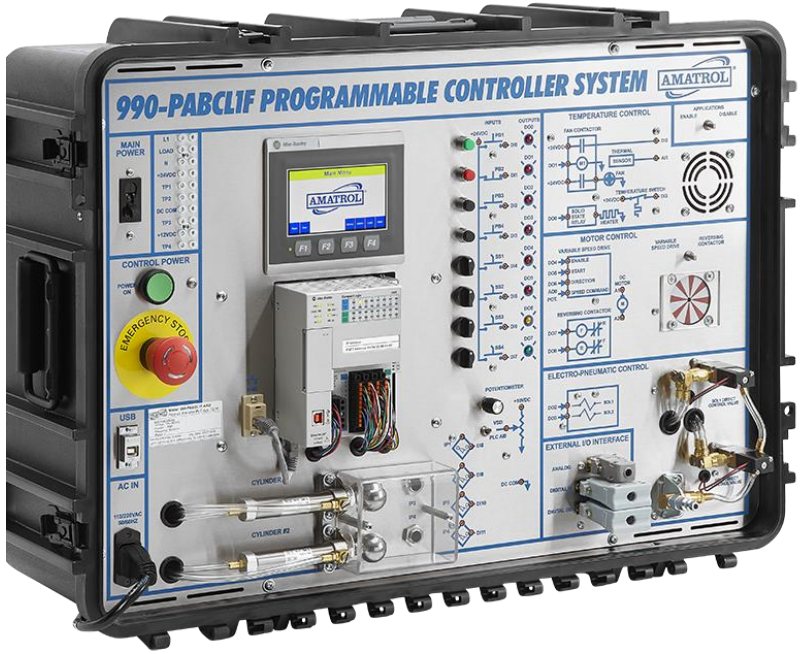
I4F Course 3: Independent Study Certification Course

SACA
SMART AUTOMATION CERTIFICATION ALLIANCE

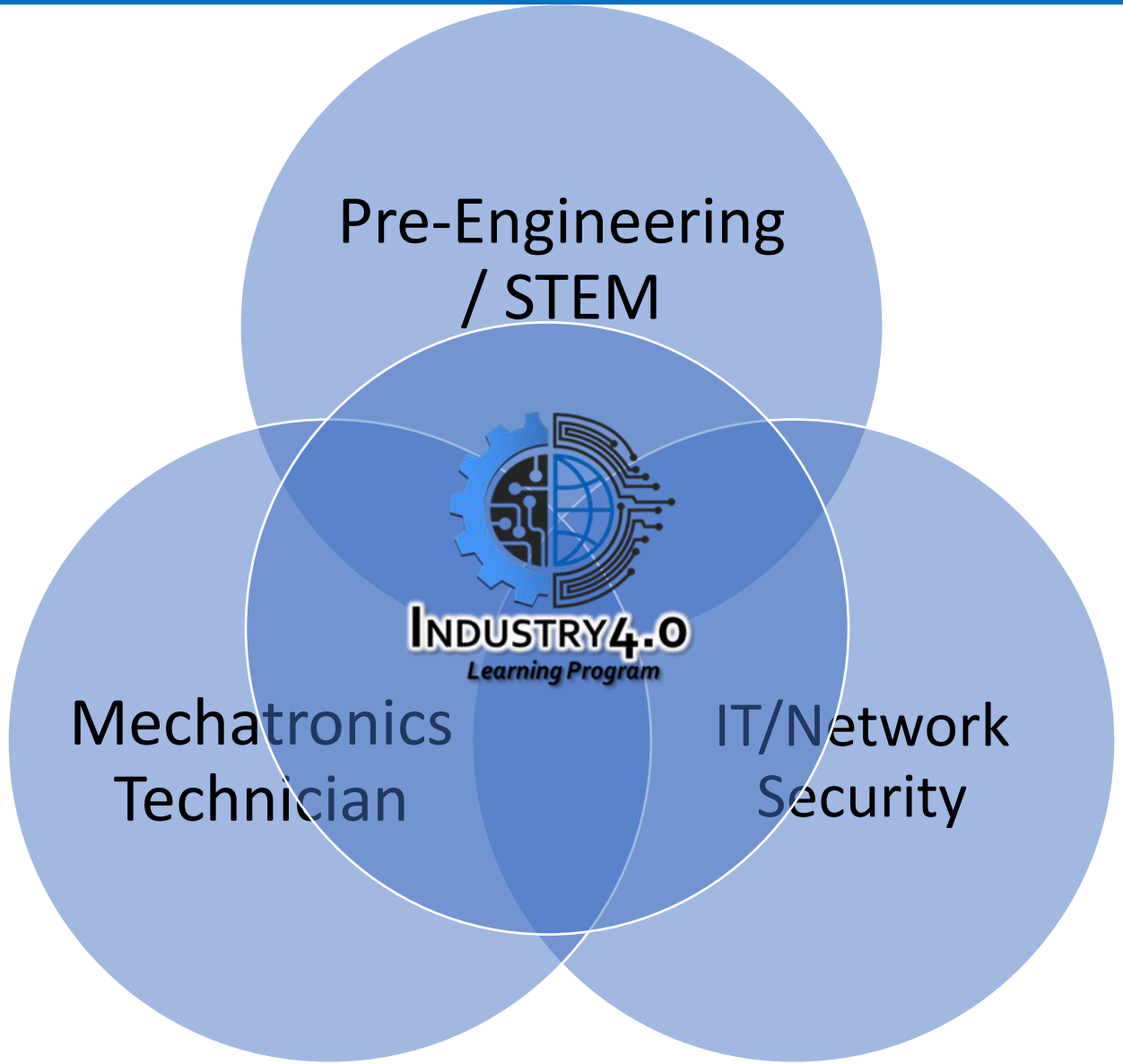
I4F Course 4 : IIOT

- **Topics include:**
  - Internet of Things Applications
  - Variable Frequency Drives (Skill Boss)
  - Programmable Controllers 4 & 5
  - Mechatronic Systems 2, 3, 4, 5
  - Barcode Product Identification
  - Programmable Controller Troubleshooting
  - RFID Product Identification
  - Smart Sensors
  - Ethernet Network Communications 2
  - Data Analytics 1 & 2
  - Skill Boss/Mechatronics/Fanuc System Projects
  - Field Trips – Class Discussion



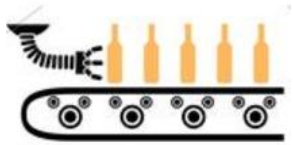


“Not Just Manufacturing”



“Not Just Manufacturing”

A True STEM Program



Students can find out what career in technology interests them most

- Advanced Manufacturing
- Automation / Robotics
- Industrial Design
- IT / Network Security
- Industrial Maintenance
- Systems Integration
- CNC Machining
- Data Analytics
- Engineering
- Processes / Lean / Safety

Smart Automation Certification Alliance (SACA)

- **Mission:** Smart Automation Certification Alliance (SACA): develop and deploy modular Industry 4.0 certifications for a wide range of industries
- **Vision:** Provide Highly Affordable ACCESSIBLE certifications that significantly increase the number of individuals who possess the skills represented by these credentials ensuring that companies have highly skilled workers in an Industry 4.0 world

CERTIFICATIONS: DEVELOPED for INDUSTRY by INDUSTRY!!!!

Rockwell Automation
FANUC
BOEING
KOHLER
FOXCONN
ASHLEY
Schlumberger
HERSHEY
THE HERSHEY COMPANY
OMNITECH
Nypro
MISCO
SARGENTO

SPECIALIST CERTIFICATIONS

Certified Industry 4.0 Automation Systems Specialist I

SMART AUTOMATION CERTIFICATION ALLIANCE

Micro Credentials (Approx. 40 Hrs./each)

Core Micro-Credentials:

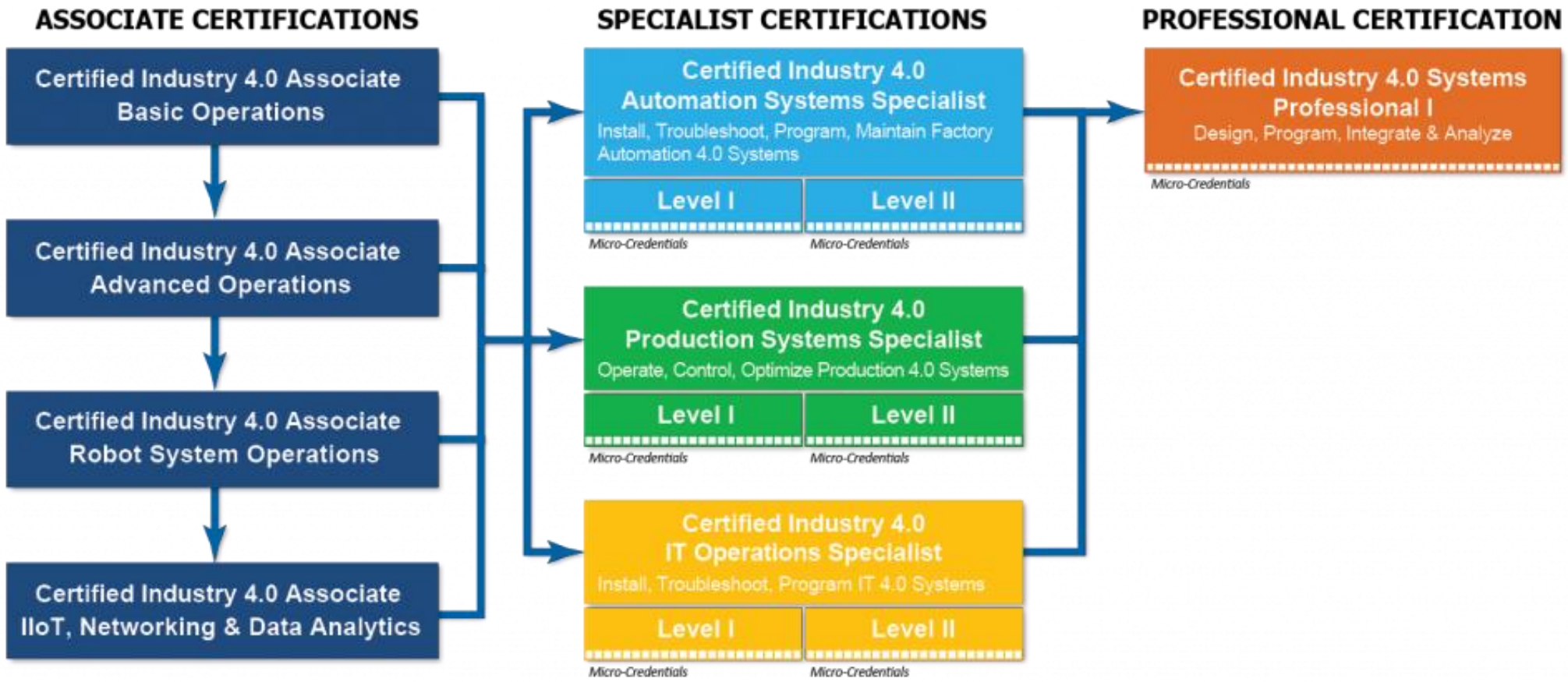
- **C-101 Associate-Basic Operations**
- **C-102 Associate-Advanced Operations**
- **C-103 Associate-Robot Operations**
- **C-104 Associate-Smart Factory Systems 1**
- **C-201 Electrical Systems 1**
- C-202 Electric Motor Control Systems 1
- C-203 Variable Frequency Drive Systems 1
- C-204 Motor Control Troubleshooting 1
- **C-205 Sensor Logic Systems 1 (*)**
- C-206 Electrical System Installation 1
- **C-207 Programmable Controller Systems 1 (**)**
- **C-208 Programmable Controller Troubleshooting 1**
- **C-209 Pneumatic Systems 1**
- C-210 Mechanical Power Systems I
- **C-211 Industry 4.0 Total Productive Maintenance**
- **C-212 Ethernet Communications 1**
- **C-213 Smart Sensor and Identification Sys. 1**
- **C-214 Smart Factory Systems 1**
- **C-215 Robot System Operations 1**
- **C-216 Robot Systems Integration 1**

Elective Micro-Credentials:

- C-251 Mechanical Power Troubleshooting
- C-252 Laser Shaft Alignment
- C-253 Electric Motor Troubleshooting
- C-254 Pneumatic Troubleshooting 1
- **C-255 Hydraulic Systems 1**
- C-256 Hydraulic Maintenance
- C-257 Process Control Systems 1
- C-258 Process Control Troubleshooting 1
- C-259 Rigging Systems 1
- C-260 Rigging Systems 2

Stackable Credentials !!!

SMART AUTOMATION CERTIFICATION ALLIANCE



Ohio Department of Education and Workforce Certifications - SACA

SACA Certification	Point Value	EMIS Code
Certified Industry 4.0 Associate I – Basic Operations	3	CQ83
Certified Industry 4.0 Associate II – Advanced Operations	3	CQ84
Certified Industry 4.0 Associate III – Robot System Operations	3	CQ85
Certified Industry 4.0 Associate IV – IIoT, Networking, and Data Analytics	3	CQ86
Certified Industry 4.0 Automation Systems Specialist I – Electric Motor Control Systems I	4	CQ87
Certified Industry 4.0 Automation Systems Specialist I – Electrical Systems I	4	CQ82
Certified Industry 4.0 Automation Systems Specialist I – Variable Frequency Drive Systems I	4	CQ88
Electrical System Installation I	4	CQ89
Industry 4.0 Total Production Maintenance Management	4	CQ91
Mechanical Power Systems I	4	CQ92
Motor Control Troubleshooting I	4	CQ93
Pneumatic Systems I	4	CQ94
Programmable Controller Systems I	4	CQ95
Programmable Controller Troubleshooting I	4	CQ96
Robotic Systems Operations I	4	CQ97
Robotic Systems Integrations I	4	CQ98
Sensor Logic Systems I	4	CQ99
Smart Factory Systems I	4	CR01
Smart Sensor & Identification Systems I	4	CR02

The University of Akron

This Agreement of Articulation is hereby entered into between Brookfield Local School District and The University of Akron's (UA) Buchtel College of Arts and Sciences as of the 1st day of July, 2024. Both institutions throughout the remaining document shall collectively be referred to as Institutional Partners.

This Agreement provides for collaboration between the Institutional Partners in order to enhance and further the educational opportunities available to eligible students at various degree levels. The goal of this collaborations is to create a seamless learning progression of technical and academic skills from the secondary level to the associate and/or bachelor degree level and beyond in order to meet career needs and opportunities.

The Institutional Partners, thought this Agreement, are providing a broader educational service to students in the region, enhancing the workforce potential by providing necessary skills and competencies more quickly and with fewer obstructions, and utilizing more fully the educational resources of the region to the benefit of all citizens and taxpayers of Ohio.

Goals of this Agreement are:

1. To provide broader educational opportunities for eligible students of the Institutional Partners.
2. To provide clarity of and credit for identified learning experiences and competencies that will articulate into each consecutive level of educational advancement.
3. To provide eligible students the opportunity to complete an associate and/or baccalaureate degree in a shorter time period than might otherwise be possible.
4. To afford eligible students an opportunity to continue along an educational and career pipeline with greater ease and support.
5. To afford eligible students an opportunity to acquire additional skills and competencies, thus aiding their employment opportunities.
6. To afford eligible students an opportunity to progress along an educational and career pipeline that will provide a comprehensive degree and employment opportunities at each consecutive degree step.
7. To create a partnership between the participating institutions that will broaden and enhance, for the benefit of all students, the educational and career potential of each institution.

Exhibit A

Articulated Courses into The University of Akron
Buchtel College of Arts and Sciences

The following University of Akron courses will be awarded to students who have fulfilled the requirements outlined in this Agreement of Articulation.

Course Number / Name	Credits	Criteria for Credit
Block Technical Credit	30.0	SACA Credentials *Basic Operations is REQUIRED *Need 9 Additional Credentials

COPELAND

copeland.com

26th March 2025

To:
Ohio Industry Recognized Credentials Review Committee
Ohio Department of Education and Workforce
25 South Front Street
Columbus, OH 43215

Subject: Letter of Support for the Inclusion of Additional SACA Micro-Credentials

Dear Members of the Credentials Review Committee,

I am writing to express my strong support for the addition of further micro-credentials from the Smart Automation Certification Alliance (SACA) to Ohio's list of approved industry-recognized credentials.

As Ohio continues to position itself as a national leader in advanced manufacturing , it is imperative that our workforce development systems adapt to meet the evolving needs of Industry 4.0. The modular, stackable nature of SACA micro-credentials allows students and job seekers to build competencies in critical areas such as industrial automation, robotics, mechatronics, cybersecurity, IIoT, and systems integration—skills that are foundational to these high-tech sectors.

SACA's credentialing framework provides a structured, flexible pathway for learners to incrementally gain in-demand skills while progressing toward comprehensive certification. This is especially valuable in preparing a workforce that can not only meet the needs of today's employers, but also quickly adapt to tomorrow's innovations in technology and production.

Adding more of these micro-credentials to the approved list will empower schools, career centers, and training providers across Ohio to align more closely with industry demand, helping students gain relevant skills and stackable credentials that are portable, measurable, and valued by employers.

I urge the committee to approve the expansion of SACA micro-credentials within the state's industry-recognized credentials framework and further support Ohio's goal of building a future-ready workforce.

Thank you for your time and consideration.

Sincerely,

A J Gillies

Andrew Gillies
Technical Training Program Manager

ASHLEY®
FURNITURE INDUSTRIES, INC.

Ronald G. Wanek
Founder & Chairman Of The Board

December 12, 2022

President Jay Rothman
University of Wisconsin System Administration
1720 Van Hise Hall, 1220 Linden Drive
Madison, Wisconsin 53706

Re: Support of proposed B.S in Automation Leadership for the University of Wisconsin-Stout

Dear President Jay Rothman,

I would like to first congratulate yourself on earning the leadership role as the 9th President of the University of Wisconsin (UW) System earlier this year. As you are aware, the responsibilities that follow are significant and must ensure that Wisconsin is a leader in both post-secondary education and the development of talent – to best compete within a global economy.

When I began Arcadia Furniture Corporation in 1970, now known as Ashley Furniture Industries, LLC, (Ashley), we began very small and by the end of our first year we grew to 35 employees. Even though we were small, our aspirations were big to become the best in the industry. Throughout our history, a large part of our company's growth was made possible through effective educational and training opportunities that positively impacted the career paths of our near 4,000 team members in Wisconsin and over 30,000 team members across the globe.

Our team is proud to share that we have continued to develop meaningful partnerships and have worked very closely with both K-12 and post-secondary education throughout the country, including the UW System and UW-Stout. To enhance this partnership, I am pleased to write this letter of commitment in support of the proposed B.S. in Automation Leadership program submitted by the UW-Stout.

The proposed program is being created directly in response to our workforce needs in the area of digital transformation. There is a workforce shortage of graduates prepared for positions in diverse automation and digital leadership roles. As Wisconsin's Polytechnic University, UW-Stout is positioned to help fill that need. The program aligns with UW-Stout's mission to deliver a career-focused education, via applied learning and collaborative partnerships.

I admire yourself and your staff for leading this great endeavor. Please know that Ashley is committed to growing our educational partnerships and I would very much look forward to the opportunity to connect with you and your team in the upcoming year. Thank you for your level of dedication and I wish you a Happy Holiday Season.

Sincerely,

Ronald G Wanek

Ron Wanek
Founder and Chairman
Ashley Furniture Industries, LLC.

Rockwell Automation

01/06/2023

President Jay Rothman
University of Wisconsin System Administration
1720 Van Hise Hall, 1220 Linden Drive
Madison, WI 53706

Dear President Rothman,

RE: Letter of Support- University of Wisconsin-Stout Proposed B.S. in Automation Leadership Program

We are pleased to write this letter of commitment in support of the proposed B.S. in Automation Leadership program submitted by the University of Wisconsin-Stout.

The proposed program is being created directly in response to our workforce needs in the area of digital transformation. There is a significant workforce shortage of graduates adequately prepared for positions in diverse advanced automation and digital leadership roles. As Wisconsin's Polytechnic University, UW-Stout is well positioned to help fill that need. The proposed program aligns with UW-Stout's mission to deliver a career-focused education, via applied industry learning and collaborative partnerships.

Rockwell Automation Inc. is a leading global provider of industrial automation controls and information solutions to a broad range of industries and is singularly focused on industrial automation and helping our customers achieve, smart, safe and sustainable and secure manufacturing operations and the productivity necessary to remain globally competitive

Please feel free to reach out if you need additional information or have questions.

Sincerely,

Michael Cook
Director, Global Academic Organization
Rockwell Automation, 1201 South Second Street, Milwaukee, 53204,mcook@ra.rockwell.com

GreenheckGroup™
Inspired People Doing Extraordinary Things

December 15, 2022

President Jay Rothman
University of Wisconsin System Administration
1720 Van Hise Hall, 1220 Linden Drive
Madison, WI 53706

Dear President Rothman:

It is my pleasure to provide this letter of commitment and support for the proposed B.S. program in Automation Leadership being developed and submitted by the University of Wisconsin-Stout.

In order to address the general workforce shortage, and continue to grow our business, we have more than doubled our capital investment rates with respect to machine and process automation but there is also a shortage of graduates prepared for positions in diverse automation and digital leadership roles to support these investments.

Greenheck Group has had a very longstanding industry advisory relationship with UW and we are very excited about the proposed program being created directly in response to our workforce needs in the area of digital transformation and automation. As Wisconsin's Polytechnic University, UW-Stout is positioned to help fill that need and we believe the program aligns with UW-Stout's mission to deliver a career-focused education via applied learning and collaborative partnerships.

Please feel free to reach out if you need additional information or have questions.

Sincerely,

Scott E. Graf
Chief Manufacturing Officer

To: President Jay Rothman

From: Scott Theune

Date: January 3, 2023

Re: University of Wisconsin Stout - Automation Leadership program

---

Dear President Rothman,

I am pleased to write this letter of commitment in support of the proposed B.S. in Automation Leadership program submitted by the University of Wisconsin-Stout.

The proposed program is being created directly in response to our workforce needs in the area of digital transformation. There is a workforce shortage of graduates prepared for positions in diverse automation and digital leadership roles. As Wisconsin's Polytechnic University, UW-Stout is positioned to help fill that need. The program aligns with UW-Stout's mission to deliver a career-focused education, via applied learning and collaborative partnerships.

Please feel free to reach out if you need additional information or have questions.

Sincerely,

Scott Theune
Regional President - AMER
Plexus Corp

OSHKOSH™

1917 Four Wheel Drive
Oshkosh, WI 54902
920.502.3009
oshkoshcorp.com

December 12, 2022

President Jay Rothman
University of Wisconsin System Administration
1720 Van Hise Hall, 1220 Linden Drive
Madison, WI 53706

Dear President Rothman,

I am pleased to write this letter of commitment in support of the proposed B.S. in Automation Leadership program submitted by the University of Wisconsin-Stout.

The proposed program is being created directly in response to our workforce needs in the area of digital transformation. There is a workforce shortage of graduates prepared for positions in diverse automation and digital leadership roles. As Wisconsin's Polytechnic University, UW-Stout is positioned to help fill that need. The program aligns with UW-Stout's mission to deliver a career-focused education, via applied learning and collaborative partnerships.

Please feel free to reach out if you need additional information or have questions.

Sincerely,
OSHKOSH CORPORATION

John Pfeifer
President and Chief Executive Officer

BRIGGS & STRATTON, LLC

January 2, 2023

President Jay Rothman
University of Wisconsin System Administration
1720 Van Hise Hall, 1220 Linden Drive
Madison, WI 53706

Dear President Rothman,

I am pleased to write this letter of commitment in support of the proposed B.S. in Automation Leadership program submitted by the University of Wisconsin-Stout.

The proposed program is being created directly in response to our workforce needs in the area of digital transformation. There is a workforce shortage of graduates prepared for positions in diverse automation and digital leadership roles. As Wisconsin's Polytechnic University, UW-Stout is positioned to help fill that need. The program aligns with UW-Stout's mission to deliver a career-focused education, via applied learning and collaborative partnerships.

Please feel free to reach out if you need additional information or have questions.

Sincerely,

Steve Andrews
President & CEO
Briggs & Stratton, LLC

Generac Power Systems
S45W29290 Highway 59
Waukesha, WI 53189

P: (262) 544-4811
W: www.Generac.com

December 21, 2022

President Jay Rothman
University of Wisconsin System Administration
1720 Van Hise Hall, 1220 Linden Drive
Madison, WI 53706

Dear President Rothman,

I am pleased to write this letter of commitment in support of the proposed B.S. in Automation Leadership program submitted by the University of Wisconsin-Stout.

The proposed program is being created directly in response to our workforce needs in the area of digital transformation. There is a workforce shortage of graduates prepared for positions in diverse automation and digital leadership roles. As Wisconsin's Polytechnic University, UW-Stout is positioned to help fill that need. The program aligns with UW-Stout's mission to deliver a career-focused education, via applied learning and collaborative partnerships.

Please feel free to reach out if you need additional information or have questions.

Sincerely,

Aaron Jagdfeld
Chief Executive Officer
Generac Power Systems, Inc.

MERCURY MARINE
P.O. Box 1939
Fond du Lac, WI 54936
MercuryMarine.com

December 21, 2022

President Jay Rothman
University of Wisconsin System Administration
1720 Van Hise Hall, 1220 Linden Drive
Madison, WI 53706

Dear President Rothman,

I am pleased to write this letter of commitment in support of the proposed B.S. in Automation Leadership program submitted by the University of Wisconsin-Stout.

The proposed program is being created directly in response to our workforce needs in the area of digital transformation. There is a workforce shortage of graduates prepared for positions in diverse automation and digital leadership roles. As Wisconsin's Polytechnic University, UW-Stout is positioned to help fill that need. The program aligns with UW-Stout's mission to deliver a career-focused education, via applied learning and collaborative partnerships.

Please feel free to reach out if you need additional information or have questions.

Sincerely,

Chris Drees
President – Mercury Marine

STOUT
UNIVERSITY OF WISCONSIN

Date: December 14, 2023
Re: Recommendation Letter for West Branch Local School

Dear Sir or Madam,

I am writing to express my enthusiastic support for West Branch Local Schools' application for the grant to acquire essential equipment for its courses to train skilled employees.
Industries are facing challenges of finding skilled employees due to the following reasons:

- Technological Advancements: Rapid technological changes require employees to have up-to-date and specialized skills, especially in fields like IT, engineering, and manufacturing. Many potential employees may not have the necessary training or expertise in these evolving technologies.
- Aging Workforce: In many industries, a significant portion of the workforce is reaching retirement age. This leads to a skills gap as experienced workers leave the workforce, and there may not be enough younger workers with the required skills to replace them.
- Educational Gaps: There is often a disconnect between the skills taught in educational institutions and the specific needs of industries. This gap means that even well-educated graduates may not possess the practical skills or specific knowledge that employers need.
- Changing Nature of Jobs: As automation and artificial intelligence become more prevalent, the nature of many jobs is changing. This requires a workforce that is not only technically skilled but also adaptable and capable of continuous learning.
- High Standards and Specific Requirements: Some industries have very specific requirements or high standards for certain roles, which many job seekers may not meet. This could be due to a lack of experience, specialized certifications, or specific technical skills.
- Lack of Attraction to Certain Industries: Some sectors, particularly those perceived as traditional or less glamorous, might struggle to attract younger workers. Industries like manufacturing, for instance, often face challenges in attracting young talent due to misconceptions about the nature of the work.
- Rapid Industry Growth: In rapidly growing industries, such as renewable energy or tech, the demand for skilled workers can outpace the supply, leading to a significant skills shortage.

Malcolm Baldrige National Quality Award 2001 Award Recipient
University of Wisconsin-Stout

STOUT
UNIVERSITY OF WISCONSIN

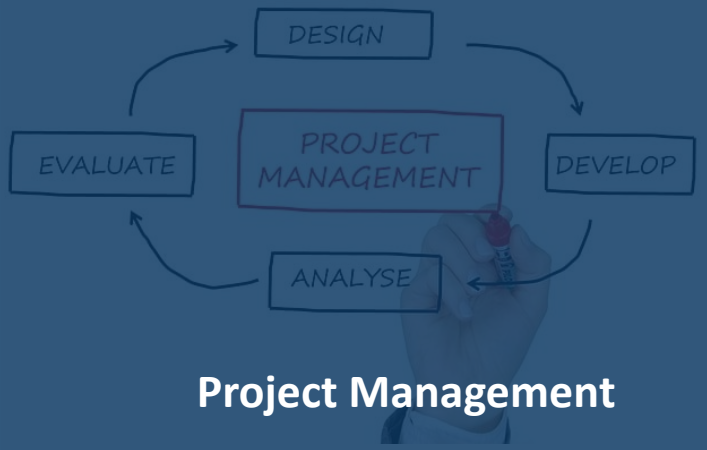
- Inadequate Training and Development Opportunities: Some industries don't invest sufficiently in training and development programs, leading to a workforce that isn't equipped with the latest skills and knowledge.

I believe the grant application submitted by West Branch Local Schools, aimed at enhancing their curriculum and acquiring necessary equipment directly answers the call from industry. This initiative aligns seamlessly with the University of Wisconsin-Stout's innovative undergraduate B.S. in Automation Leadership (https://www.uwstout.edu/programs/bs-automation-leadership) , designed to address the growing demand in the industry by fostering early interest and skill development in manufacturing careers.
Our program allows high school partners to offer courses leading to Smart Automation Certification Alliance (SACA) certifications. Students can earn college credits through these courses, which are transferable to our Automation Leadership program. This dual enrollment opportunity is pivotal not only in accelerating the process of training more engineers to meet industry needs but also in allowing high school students to explore manufacturing careers at an early stage.
The grant sought by West Branch Local Schools is crucial for them to implement a curriculum centered around Advanced Manufacturing that leads to valuable credentials, certifications, and transferable college credits. I firmly believe that supporting this initiative will have a significant impact on both the state and national industry sectors, contributing to a more robust and skilled workforce.
Your consideration of this proposal will be instrumental in shaping the future of manufacturing education and industry readiness. I strongly recommend funding this proposal and am available for any further information or clarification you might need.

Sincerely

David Ding, PhD, Professor, Director, School of Engineering
College of Science, Technology, Engineering, Mathematics and Management
University of Wisconsin – Stout, Wisconsin's Polytechnic University
269 Tech Wing - Jarvis Hall
Menomonie, Wisconsin 54751
Tel: 715 232 1195 / Email:dingx@uwstout.edu

Malcolm Baldrige National Quality Award 2001 Award Recipient
University of Wisconsin-Stout



Project Management

Digital Transformation

Lean Manufacturing

Organizational Leadership

IIoT Integration

University breaks new ground in manufacturing world with industry-inspired automation leadership degree

UW System Board of Regents approves flexible program that stacks management skills onto smart automation training

SMART AUTOMATION CERTIFICATION ALLIANCE

CORE

Credits

40

YEARS 1-2 REQUIRED CREDENTIALS (15 credentials)

- C-101 Certified Industry 4.0 Associate-Basic Operations
- C-102 Certified Industry 4.0 Associate-Advanced Operations
- C-103 Certified Industry 4.0 Associate - Robot System Operations
- C-201 Electrical Systems 1
- C-202 Electric Motor Control Systems 1
- C-203 Variable Frequency Drive Systems 1
- C-204 Motor Control Troubleshooting 1
- C-205 Sensor Logic Systems 1
- C-207 Programmable Controller Systems 1
- C-208 Programmable Controller Troubleshooting 1
- C-209 Pneumatic Systems 1
- C-212 Ethernet Communications 1
- C-213 Smart Sensor and Identification Systems 1
- C-214 or C-104 Smart Factory Systems 1
- C-216 Robot Systems Integration 1

Year 1-2 Electives

- C-206 Electrical System Installation 1
- C-210 Mechanical Power Systems 1
- C-304 Pneumatic Troubleshooting 1
- C-255 Hydraulic Systems 1

YEARS 1-2 REQUIRED CREDENTIALS (15 credentials)

1. ***C-101 Certified Industry 4.0 Associate-Basic Operations***
2. ***C-102 Certified Industry 4.0 Associate-Advanced Operations***
3. ***C-103 Certified Industry 4.0 Associate - Robot System Operations***
4. ***C-201 Electrical Systems 1***
5. **C-202 Electric Motor Control Systems 1**
6. **C-203 Variable Frequency Drive Systems 1**
7. **C-204 Motor Control Troubleshooting 1**
8. ***C-205 Sensor Logic Systems 1***
9. ***C-207 Programmable Controller Systems 1***
10. ***C-208 Programmable Controller Troubleshooting 1***
11. ***C-209 Pneumatic Systems 1***
12. ***C-212 Ethernet Communications 1***
13. ***C-213 Smart Sensor and Identification Systems 1***
14. ***C-214 or C-104 Smart Factory Systems 1***
15. ***C-216 Robot Systems Integration 1***

Year 1-2 Electives

- **C-206 Electrical System Installation 1**
- **C-210 Mechanical Power Systems 1**
- **C-304 Pneumatic Troubleshooting 1**
- ***C-255 Hydraulic Systems 1***

SMART AUTOMATION CERTIFICATION ALLIANCE

CORE

Credits

40

YEARS 1-2 REQUIRED CREDENTIALS (15 credentials)

- C-101 Certified Industry 4.0 Associate-Basic Operations
- C-102 Certified Industry 4.0 Associate-Advanced Operations
- C-103 Certified Industry 4.0 Associate - Robot System Operations
- C-201 Electrical Systems 1
- C-202 Electric Motor Control Systems 1
- C-203 Variable Frequency Drive Systems 1
- C-204 Motor Control Troubleshooting 1
- C-205 Sensor Logic Systems 1
- C-207 Programmable Controller Systems 1
- C-208 Programmable Controller Troubleshooting 1
- C-209 Pneumatic Systems 1
- C-212 Ethernet Communications 1
- C-213 Smart Sensor and Identification Systems 1
- C-214 or C-104 Smart Factory Systems 1
- C-216 Robot Systems Integration 1

Year 1-2 Electives

- C-206 Electrical System Installation 1
- C-210 Mechanical Power Systems 1
- C-304 Pneumatic Troubleshooting 1
- C-255 Hydraulic Systems 1

SMART AUTOMATION CERTIFICATION ALLIANCE

	Credits
CORE	40
GEN ED	27

1. English Composition
2. Foreign Language
3. Natural Sciences
4. Arts & Humanities
5. Mathematics
6. Social Sciences

SMART AUTOMATION CERTIFICATION ALLIANCE

CORE

Credits

40

GEN ED

27

SMART AUTOMATION CERTIFICATION ALLIANCE

PROFESSIONAL

21

YEARS 3-4 REQUIRED CREDENTIALS (CHOOSE 7 OF 14)

- C-211 Industry 4.0 Total Productive Maintenance Management (C-101, 102)
- C-305 Industrial Electronic Systems 1 (pre-req: C-201, 205)
- C-308 Variable Frequency Drive Systems 2 (pre-req: C-203, 204)
- C-309 Programmable Controller Systems 2 (pre-req: C-207, 208)
- C-310 Ethernet Communications 2 (pre-req: C-212)
- C-312 Robot Systems Integration 2 (pre-req: C-216)
- C-313 Smart Factory Systems 2 (pre-req: C-214 or 104)
- C-359 Programmable Controller Systems 3 (pre-req: C-309)
- C-362 Machine Vision Systems 1 (pre-req: C-201, 216)
- C-306 Industrial Electronic Systems 2 (pre-req: C-305)
- C-307 Electronic Systems Installation 1 (pre-req: C-206)
- C-358 Autonomous Mobile Robot Systems 1 (pre-req: C-212, C-207)
- C-360 Motion Control Systems 1 (pre-req: C-359)
- C-361 Programmable Conveyor Systems 1 (pre-req: C-214 or 104)

YEARS 3-4 REQUIRED CREDENTIALS (CHOOSE 7 OF 14)

- *C-211 Industry 4.0 Total Productive Maintenance Management (C-101, 102)*
- C-305 Industrial Electronic Systems 1 (pre-req: C-201, 205)
- C-308 Variable Frequency Drive Systems 2 (pre-req: C-203, 204)
- *C-309 Programmable Controller Systems 2 (pre-req: C-207, 208)*
- *C-310 Ethernet Communications 2 (pre-req: C-212)*
- C-312 Robot Systems Integration 2 (pre-req: C-216)
- C-313 Smart Factory Systems 2 (pre-req: C-214 or 104)
- C-359 Programmable Controller Systems 3 (pre-req: C-309)
- C-362 Machine Vision Systems 1 (pre-req: C-201, 216)
- C-306 Industrial Electronic Systems 2 (pre-req: C-305)
- C-307 Electronic Systems Installation 1 (pre-req: C-206)
- C-358 Autonomous Mobile Robot Systems 1 (pre-req: C-212, C-207)
- C-360 Motion Control Systems 1 (pre-req: C-359)
- C-361 Programmable Conveyor Systems 1 (pre-req: C-214 or 104)

YEARS 3-4 REQUIRED CREDENTIALS (CHOOSE 7 OF 14)

- C-211 Industry 4.0 Total Productive Maintenance Management (C-101, 102)
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- C-360 Motion Control Systems 1 (pre-req: C-359)
- C-361 Programmable Conveyor Systems 1 (pre-req: C-214 or 104)

YEARS 3-4 REQUIRED CREDENTIALS (CHOOSE 7 OF 14)

- C-211 Industry 4.0 Total Productive Maintenance Management (C-101, 102)
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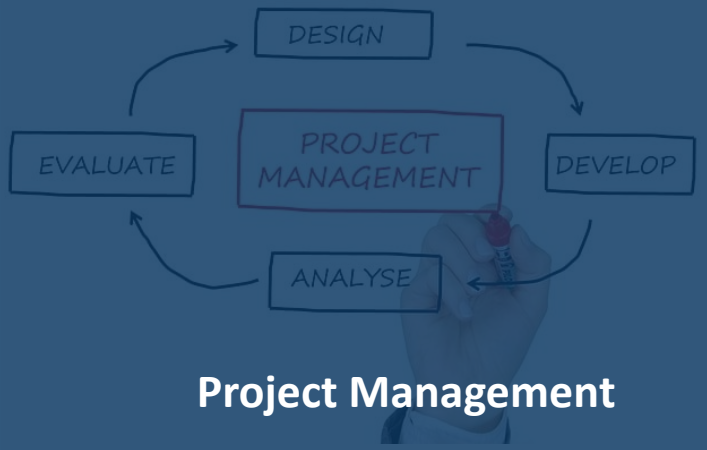
- C-306 Industrial Electronic Systems 2 (pre-req: C-305)
- C-307 Electronic Systems Installation 1 (pre-req: C-206)
- C-358 Autonomous Mobile Robot Systems 1 (pre-req: C-212, C-207)
- C-360 Motion Control Systems 1 (pre-req: C-359)
- C-361 Programmable Conveyor Systems 1 (pre-req: C-214 or 104)

	Credits
SACA SMART AUTOMATION CERTIFICATION ALLIANCE CORE	40
GEN ED	27
SACA SMART AUTOMATION CERTIFICATION ALLIANCE PROFESSIONAL	21
	88

	Credits
SACA SMART AUTOMATION CERTIFICATION ALLIANCE CORE	40
GEN ED	27
SACA SMART AUTOMATION CERTIFICATION ALLIANCE PROFESSIONAL	21
	88
	120



Project Management

Digital Transformation

Lean Manufacturing

Organizational Leadership

IIoT Integration

UW-Stout Automation Leadership (21 CREDITS)

- Digital Transformation
- Internet of Things in Operations
- Project Management
- Organizational Leadership
- Lean Manufacturing
- Automation Leadership Internship
- Automation Leadership Capstone

*Note per Higher Learning Commission requirements a minimum of 32 total credits must be earned from the University of Wisconsin - Stout

University breaks new ground in manufacturing world with industry-inspired automation leadership degree

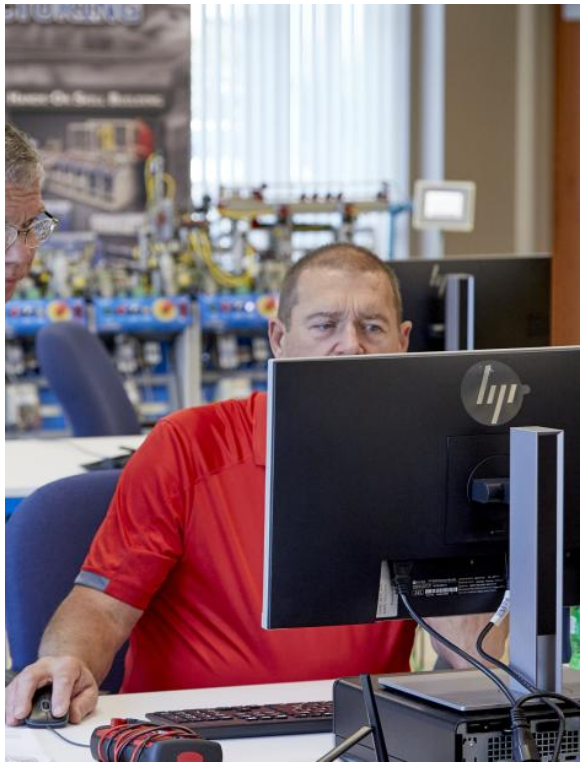
UW System Board of Regents approves flexible program that stacks management skills onto smart automation training

UW-Stout

dingx@uwstout.edu
715-232-1195

Dr. David Ding
Associate Dean – CSSTEM
Director – School of Engineering

Summer Instructor Training



Amatrol Virtual Mentoring Course Series

Four-course series to accelerate effective implementation of Amatrol IGNITE and Industry 4.0 Fundamentals curricula

Includes access to a collaborative network of teachers and experts sharing experiences and tips: ***The PDPlus Amatrol Collaborative***

Course activities are job-embedded and adapted for each unique setting and implementation approach.

Facilitated by mentors that are currently teaching Amatrol **IGNITE** or **Industry 4.0 Foundations.**

Each course

- Prepares and guides new teachers in planning for implementation.
- Provides mentoring feedback based on experience and best practices.
- Gives tips and tricks from experienced mentors.
- Complements the work teachers will already be doing to prepare for successfully engaging students.

Course Series

Creating a Dynamic Launch

Setting Up Your First Weeks

Looking Back and Planning Ahead

Moving Forward: Enhanced Learning Experiences

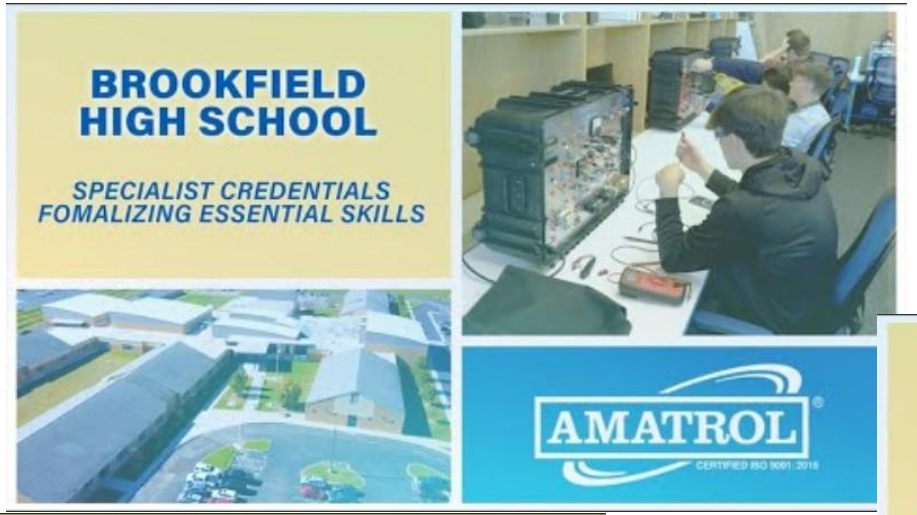
PD PLUS®

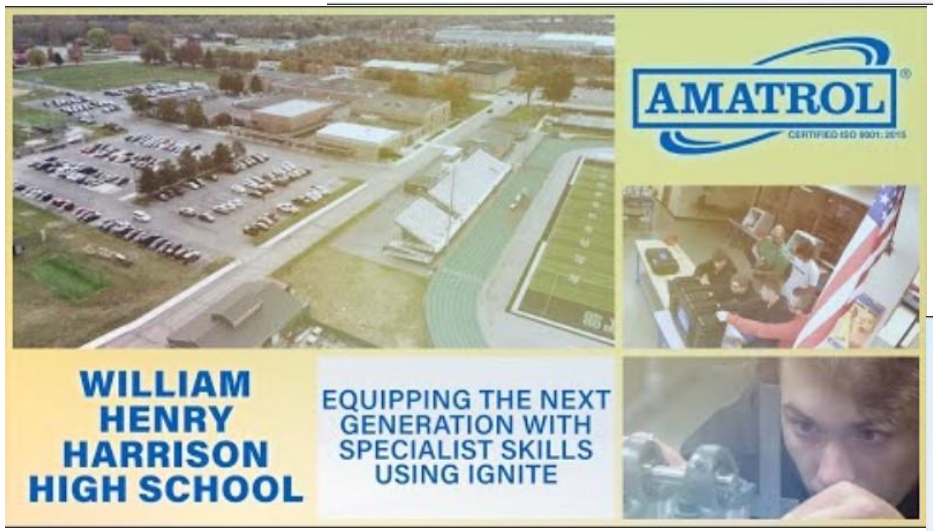
This series uses a targeted but flexible timeline . . .

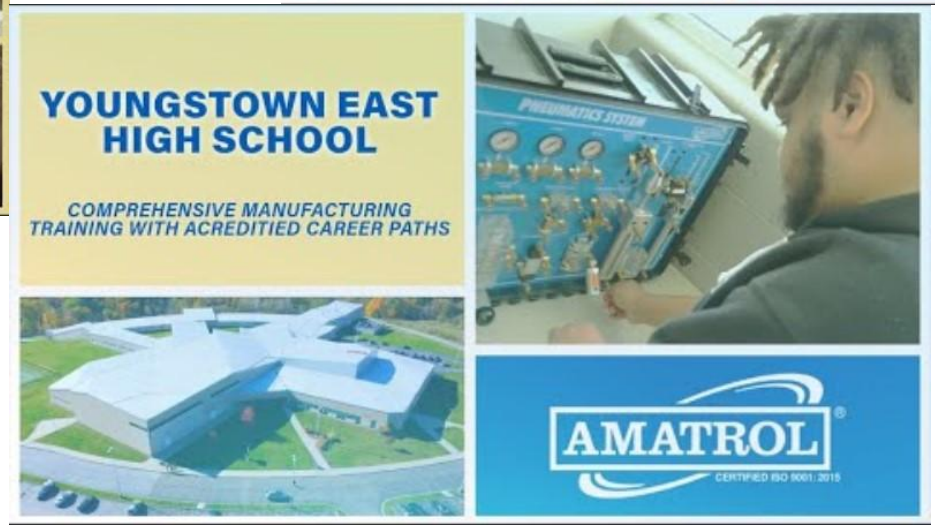
The first two courses, ***Creating a Dynamic Launch*** and ***Setting Up Your First Weeks,*** are intended to support planning and preparation prior to launching the curricula. The third course, ***Looking Back and Planning Ahead***, supports instruction and adjustments early in implementation; and the fourth course, ***Moving Forward: Enhanced Learning Experiences***, can be completed when the teacher is midway through the Amatrol curriculum.

BUCKEYE
Educational Systems

- Jake Hoffman, K12 Sales
- Jake@buckeye-edu.com
- www.buckeye-edu.com
- 419-571- 6116 cell
- Who is Buckeye?







Questions

INDUSTRY4.0
Learning Program