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Making tomorrow's workforce fit for the future of industry

Siemens Mechatronic Systems Certification Program (SMSCP)
Siemens Cooperates with Education (SCE)

Industrial Evolution

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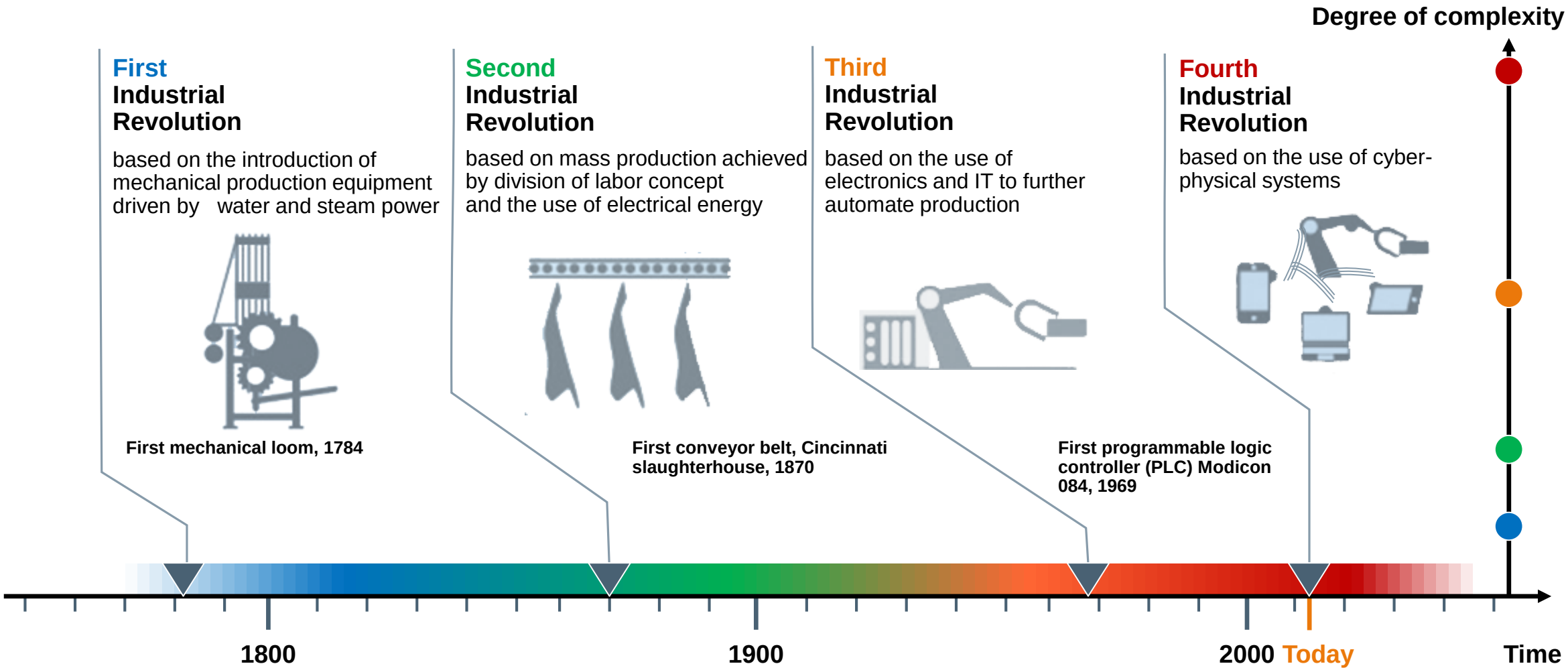

Source: DFKI (2013)

Transforming Skill Sets Over time

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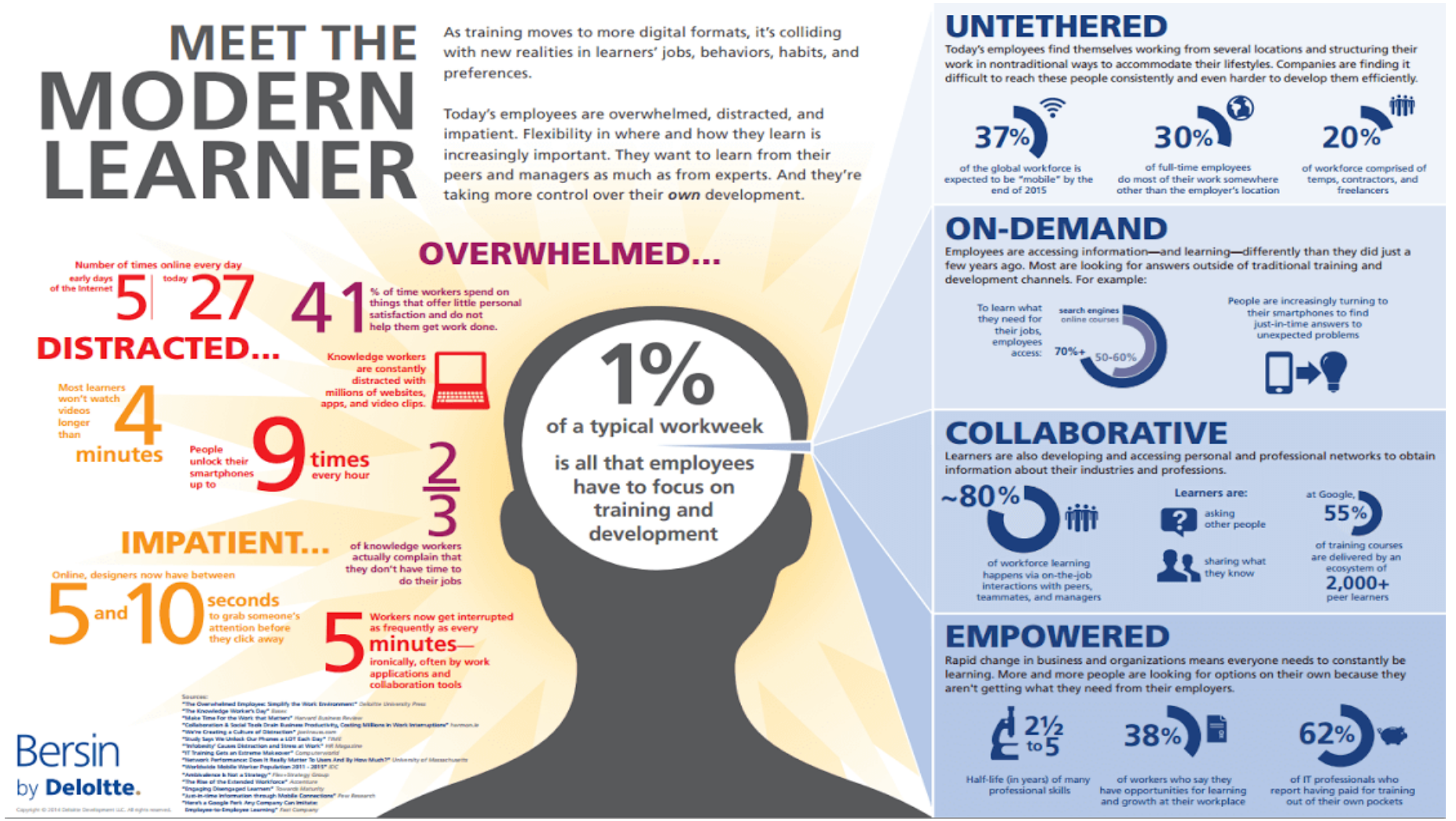
Top 10 Skills

…in 1970	…in 2015	…in 2018	…in 2022
Writing	Complex Problem Solving	Complex Problem Solving	Analytical thinking and innovation
Computational Skills	Coordinating with Others	Critical Thinking	Active learning and learning strategies
Reading Skills	People Management		Creativity, originality and initiative
Oral Communications	Critical Thinking		Technology design and programming
Listening Skills	Negotiation		
Personal Career Development	Quality Control	Emotional Intelligence	
Creative Thinking	Service Orientation		Leadership and social influence
Leadership	Judgment and Decision Making		Emotional intelligence
Goal Setting/Motivation	Active Listening		Reasoning, problem solving and ideation
Teamwork	Creativity	Cognitive Flexibility	Systems analysis and evaluation

Source: Fortune 500 Most Valued Skills; Future of Jobs Survey, World Economic Forum.

Changes in Students' Learning Expectations



The Evolution of Jobs

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Standard jobs	Roles that perform work using a specified and narrow skill set. Generally organized around standard processes.
Hybrid jobs	Roles that perform work using a combination of skill sets drawing on both technical and uniquely human skills. Historically, these types of skills have not been combined in the same job.
Superjobs	Roles that combine work and responsibilities from multiple traditional jobs, using technology to both augment and broaden the scope of the work performed and involve a more complex set of domain, technical and human skills.

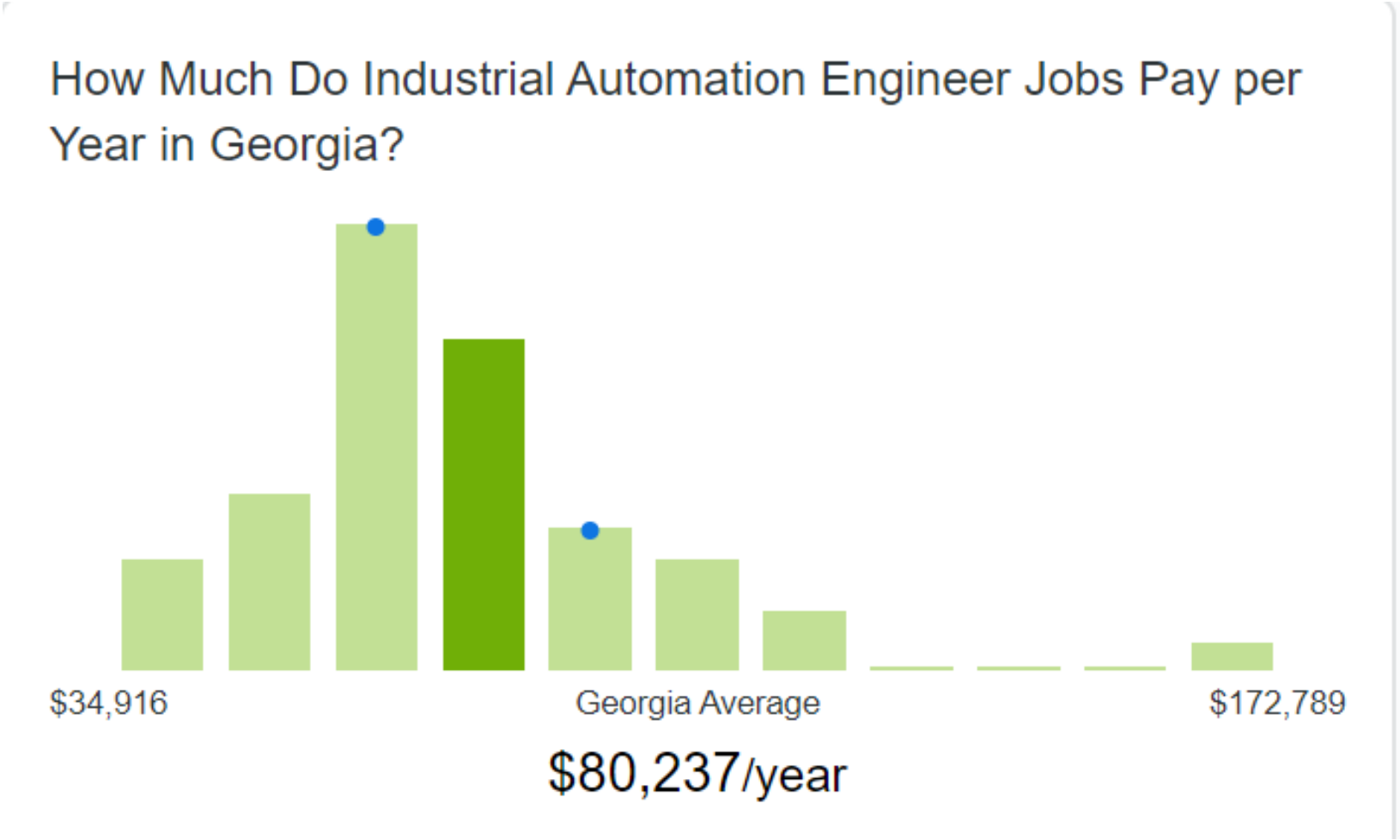
Source: Deloitte Global Human Capital Trends Survey 2019

Georgia Jobs

According to the Workforce Division of Georgia's Department of Economic Development, these are the top-10 high-demand occupations in the state.

- Business Management and Operations.
- CNC Operator.
- Computer Programmer.
- Electric Engineer.
- Machinist.
- Maintenance Technician.
- Manufacturing/Production Technician.
- Mechanical Engineer.

Industrial Automation Salary Ranges in GA



Siemens Cooperates with Education provides value to students, instructors, schools and industrial companies

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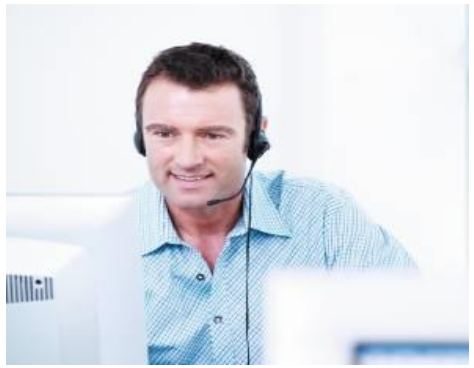
SCE Offerings

Curriculum

Trainer Packages

Workshops



Support

Value

1. Same technology used by industry, deeply discounted for schools
2. Job-driven competencies, validated by industrial employers
3. Credentials for instructors and students
4. More than 500 U.S. academic institutions
5. Part of Siemens global SCE network

Industry Relevant Curriculum Applied Across Education

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High School

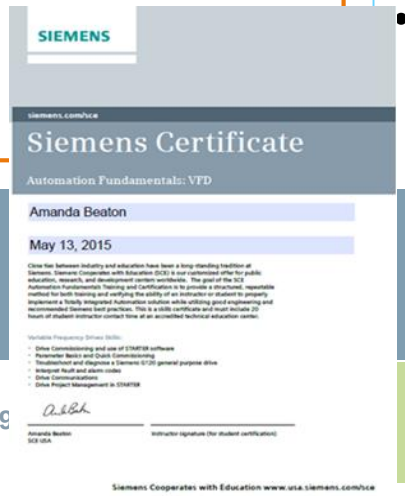
- Introductory Programming
- Electronics
- Maintenance
- Manufacturing
- Mechatronics

Community College

- Machining / CNC
- Engineering Technology
- Electrical Automated Technology
- Adv Manufacturing
- Mechatronics

University

- Mechatronics Approach
- Hands-on Engineering
- Industry-driven Research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Siemens Certificate

Automation Fundamentals: VFD

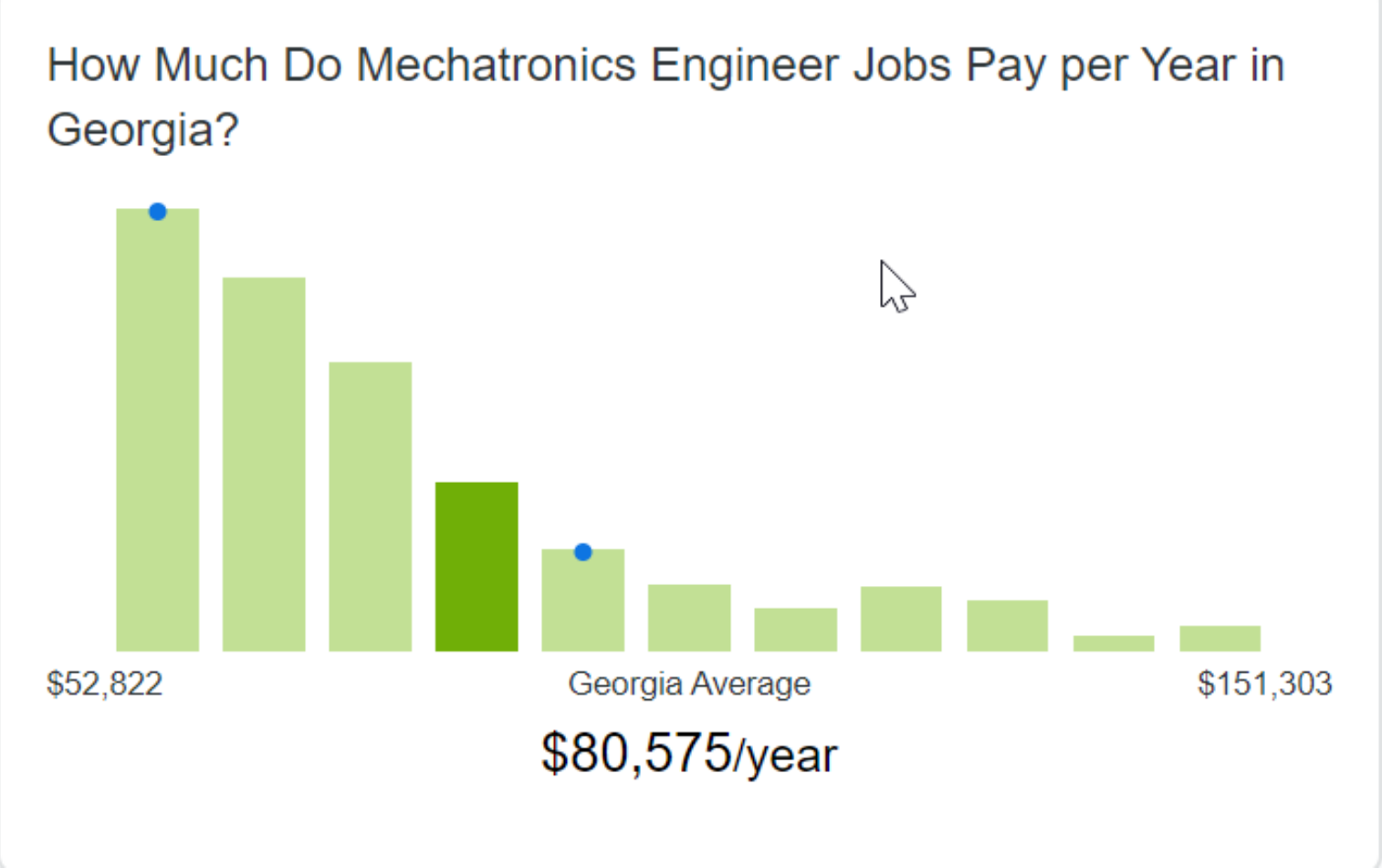
Amanda Beaton

May 13, 2015

Certificates of Completion

Apprentice Programs
Career Centers

Mechatronics Salary Ranges in GA



Level 3: Certified Mechatronic Systems Professional (Engineer)

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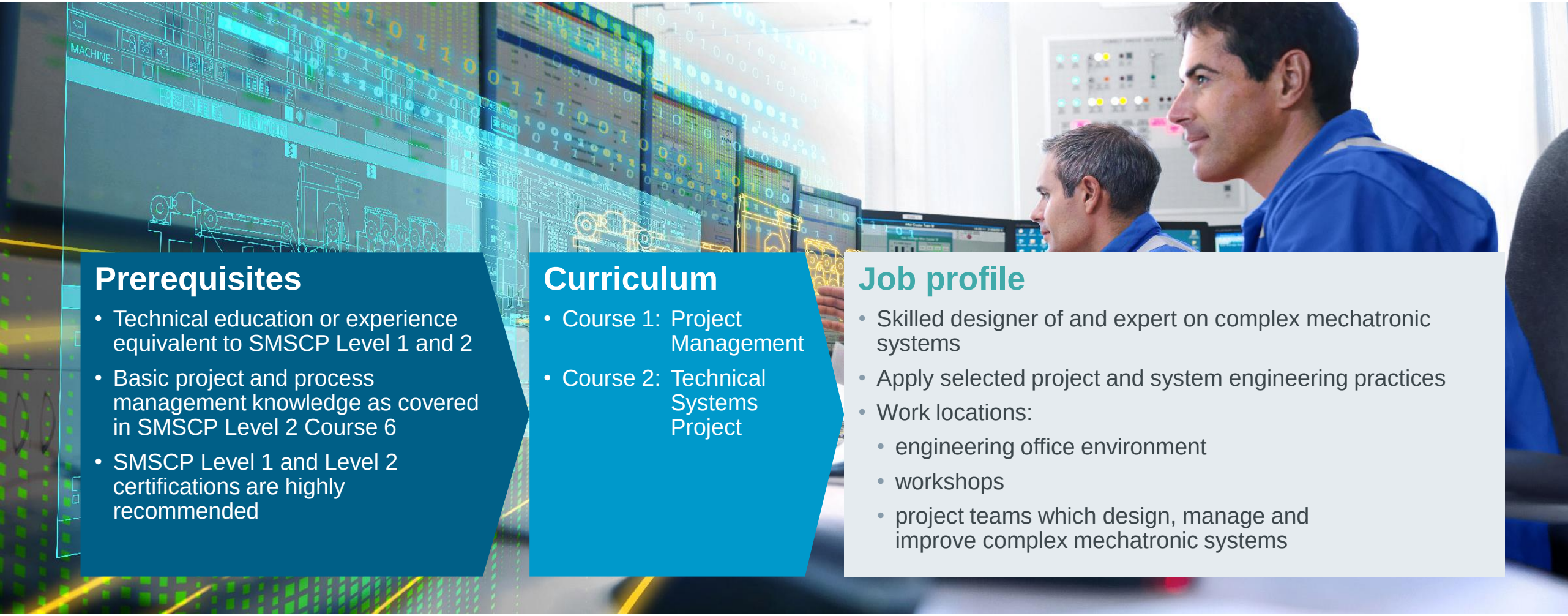


Prerequisites

- Technical education or experience equivalent to SMSCP Level 1 and 2
- Basic project and process management knowledge as covered in SMSCP Level 2 Course 6
- SMSCP Level 1 and Level 2 certifications are highly recommended

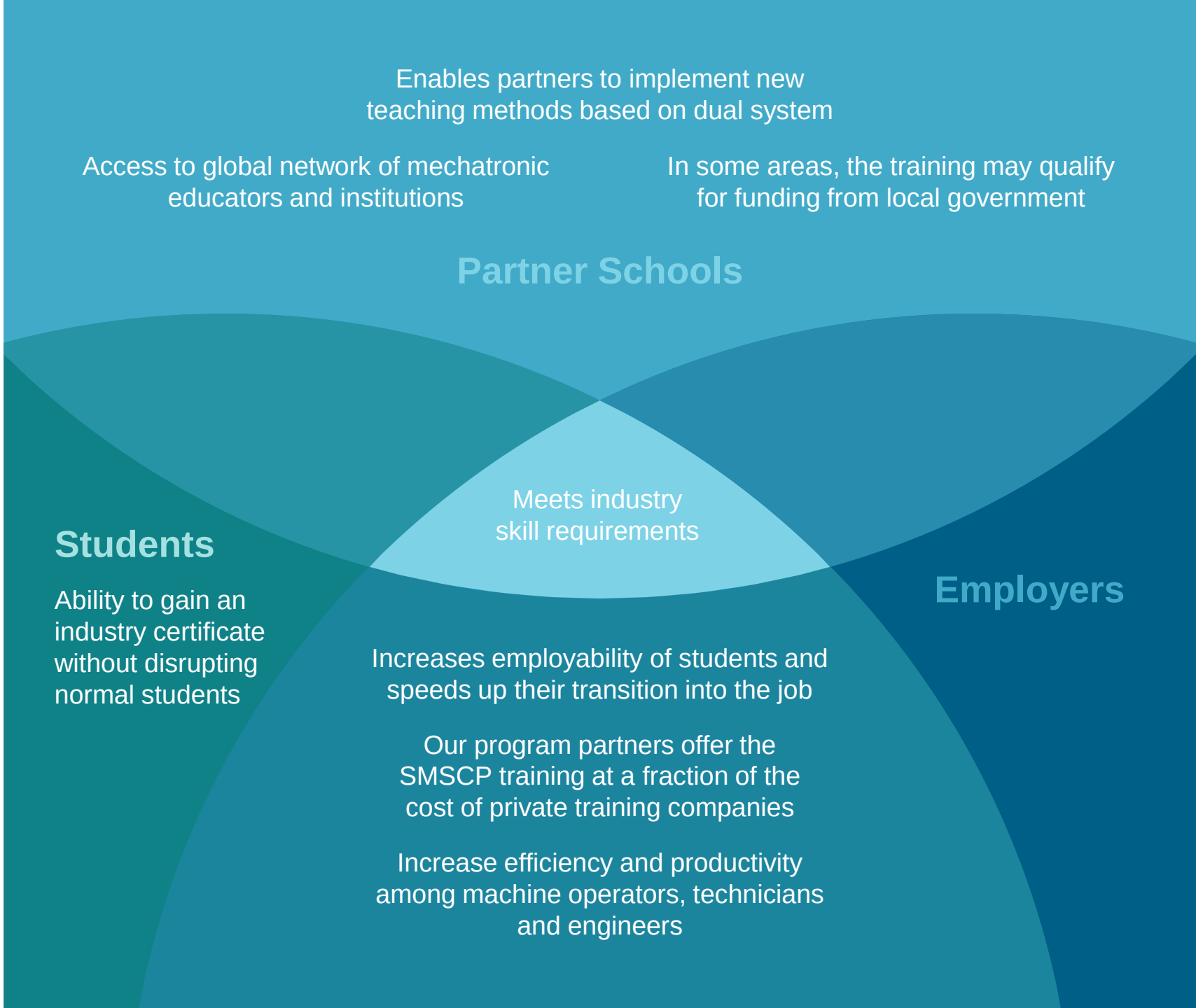
Curriculum

- Course 1: Project Management
- Course 2: Technical Systems Project

Job profile

- Skilled designer of and expert on complex mechatronic systems
- Apply selected project and system engineering practices
- Work locations:
  - engineering office environment
  - workshops
  - project teams which design, manage and improve complex mechatronic systems

Benefits for partner schools, students and employers



How to get started
Prerequisites for partner schools

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Successful instructor certification for at least two faculty

Mechatronic system and content implementation

- Equipment meeting SMSCP hardware requirements
- Implementation plan to integrate SMSCP content and didactic methodology into chosen program

Local agreement with Siemens US

(MoU or partnership contract)

Student Certification

Only SMSCP partner schools can offer our online certification exam to their students

Success for Incumbent Workers: Western Nevada College

- Training for existing manufacturing workforce and traditional students
- Small and intense training classes accelerated to as little as 1 month
- Training focuses on the methodology of thinking like a problem solver, not just a task worker
- WNC offers a combination of online and hands-on learning

Students working in manufacturing, industry earn Siemens credential at Western Nevada College

Local | January 6, 2018

Western Nevada College

Yerington High School students, from left, Sam Cota, Pedro Maldonado, A
Sam, Ryan Barnes and Luke Stokes completed the OSHA 10-hour safety c
for Construction Education and Research safety and core curriculum certi
Nevada College's Jump Start Career and Technical Education program du
construction instructor Robert Ford, center, led the training

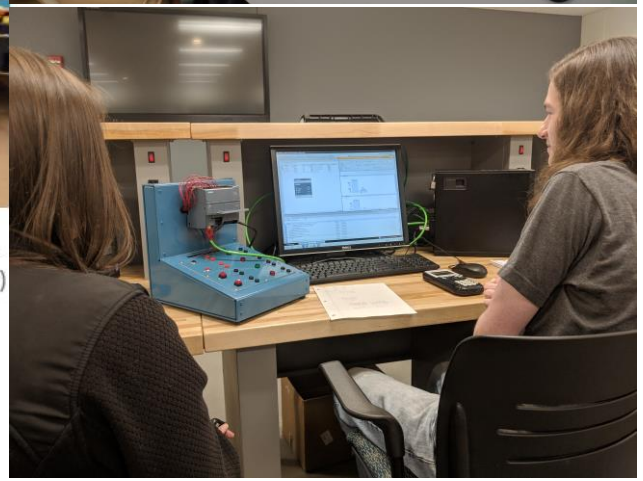
Consistent Job Placement: Patrick Henry Community College

- Industrial Electronic Technology program awards SMSCP credential
  - Siemens Mechatronics System Certification Program
- The 17-person class received 62 industrial electronics technology credentials this semester
- 2/3 of the class are receiving associates in IET along with certificates in VFD, PLC and additional career studies

Four Years and Counting: Mechatronics program sees 100 percent pass rate

Bulletin Staff Report May 22, 2017

From left to right: (front row) Sebastian Barberena, Patrick Price, Erik Price, Jeffrey Bray, Christopher Cooper, Taylor Aaron, Ricardo Mitchell. (Back row) Adam Jones, Jeffery Evans, Ethan Adams, Joshua Hale, Kendall Ledyard, Jesus Yepez, Francisco Garcia. (Not Pictured) Chuck Perry, Bryan Hundley, Sharon Clark.



Martinsville, VA students with Level 1 Siemens Mechatronic Systems Certification

Success in Partnership: Lewis & Clark Community College + NCERC

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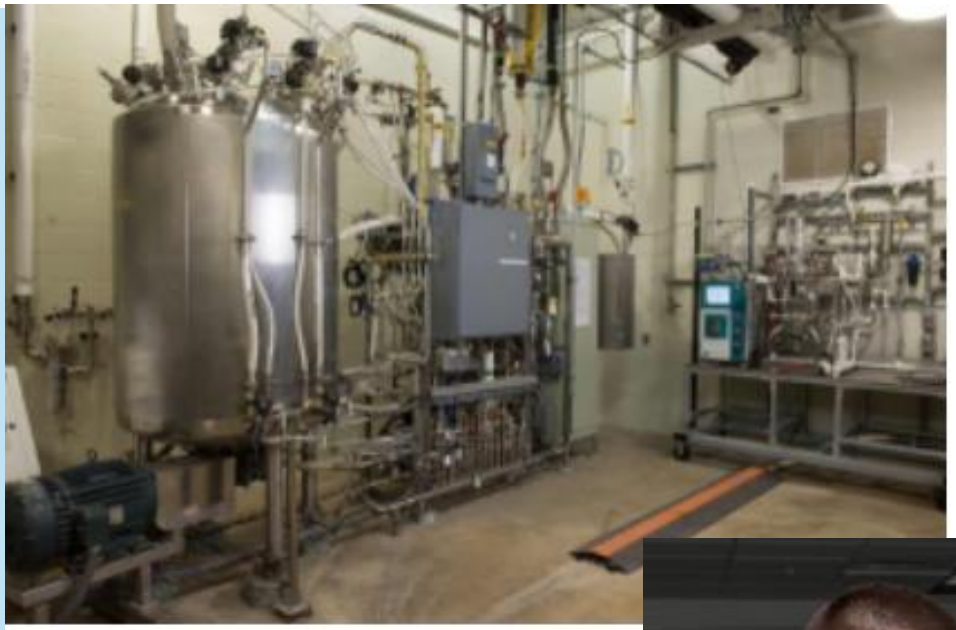
- Hands-on training with full replica DCS system and pilot plant featuring PCS 7 and SIMIT
- Training model developed in collaboration with local workforce boards increases employability of available workers
- New Refinery Operator Apprenticeship combines on-the-job training, classroom education, and training on a digital twin of the pilot plant



Success with Digital Manufacturing: Kennesaw State University

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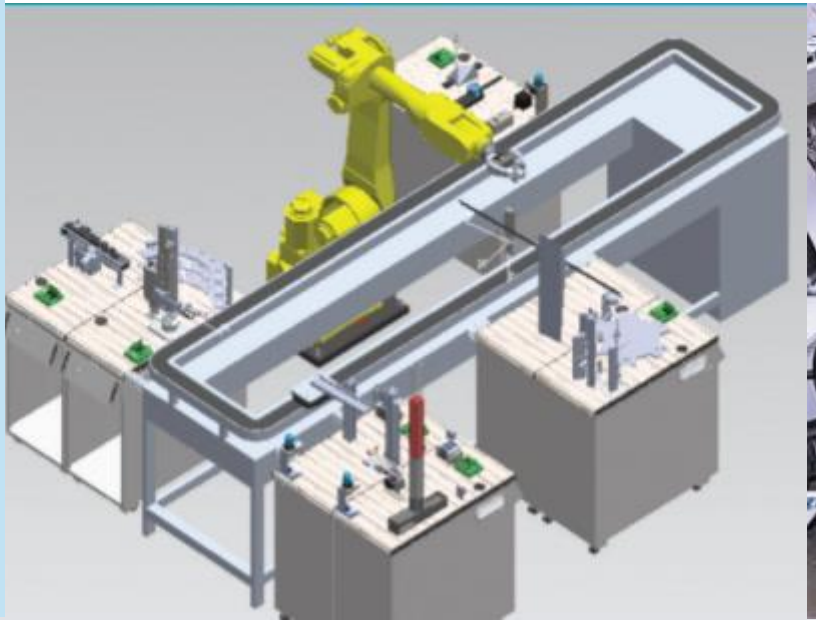
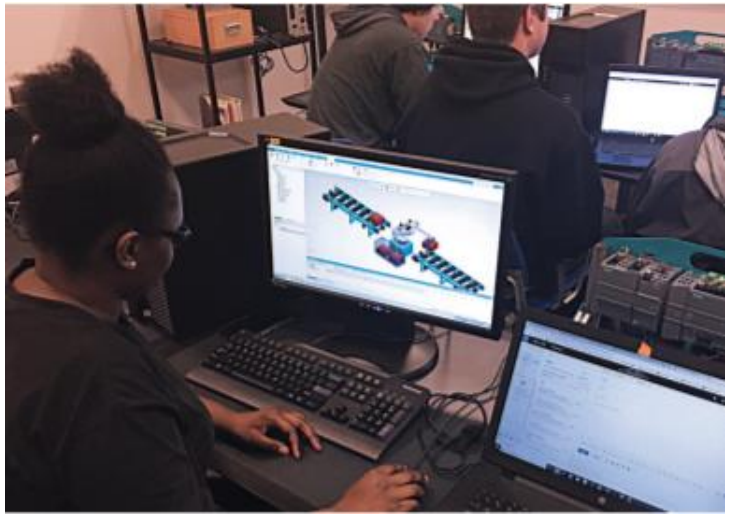
- Technologies available to 3 degree programs including engineering and engineering technology
- Software helps students create digital twins of integrated manufacturing
  - Tecnomatix and TIA Portal



- *"The hands-on approach enables students to understand and apply advanced manufacturing concepts including the Internet of Things, digital twins, collaborative robotics and Industry 4.0"*
  - Dr. Guerra-Zubiaga, KSU Mechatronics



Questions?

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