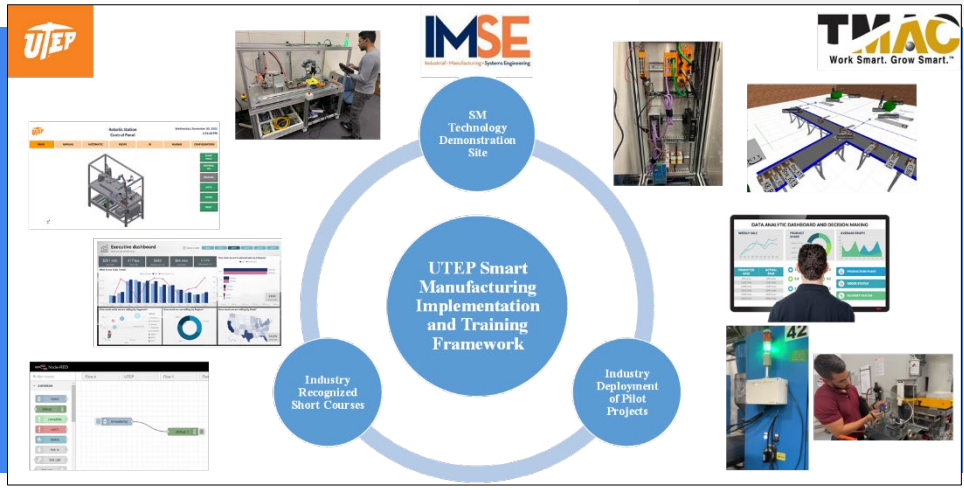
Industry
Manufacturing

Technology
Workforce Development

CESMII
THE SMART MANUFACTURING INSTITUTE

PROJECT CASE STUDY

A Smart Manufacturing Implementation & Workforce Development Framework



PROJECT LEAD

UTEP

PROJECT TEAM

N/A

PROJECT OBJECTIVE

Create a Smart Manufacturing (SM) training and implementation framework that will attract and educate the workforce in SM technologies, particularly across a minority group (Hispanic) in one of the largest manufacturing hubs in North America.

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UTEP Delivers Hands-On Smart Manufacturing Training to Regional Manufacturers

BENEFITS TO OUR NATION

Smart Manufacturing workshops equip workers with cutting-edge skills and knowledge, enabling them to implement advanced manufacturing technologies that improve efficiency and productivity. Developing a skilled workforce allows regional manufacturing hubs to attract and retain more high-tech industries, driving innovation and economic growth. This regional development, in turn, contributes to the broader national economy by increasing the competitiveness of American manufacturing, creating high-quality jobs, and supporting sustainable economic prosperity across the country.

BENEFITS TO INDUSTRY

Training workers in one region on Smart Manufacturing technologies will significantly benefit the industry by creating a more skilled and productive workforce. Smart Manufacturing workshops equip workers with knowledge and techniques that enable them to enhance efficiency, reduce waste, and improve product quality. This investment in workforce development not only boosts productivity and profitability for individual companies but also strengthens the overall industrial ecosystem, fostering sustainable growth and advancement.

PROJECT DESCRIPTION

TECHNICAL APPROACH

Provide local Small & Medium-sized Manufacturers (SMM) access to a Smart Manufacturing (SM) technology demonstration site featuring industry-relevant Smart Manufacturing technologies, provide hands-on lab training courses, and leverage regional Manufacturing Extension Partnership centers to implement 'quick win' solutions using SM methodologies.

ACCOMPLISHMENTS

- Designed and deployed a comprehensive Smart Manufacturing Instruction (SMI) site, equipped with manufacturing, communications, and virtual reality hardware.
- Demonstrated proof-of-concept SM technologies for regional SMMs that can be applied to existing manufacturing operations.
- Delivered Smart Manufacturing training workshops to 18 participants from 7 regional manufacturers.
- Developed and delivered 4 different Smart Manufacturing short courses.
- Developed two training projects:
  - Digital Factory Twin
  - AR/VR Solutions for high voltage testing environments
- Integrated the Smart Manufacturing Instruction site IoT system to the CESMII Smart Manufacturing Innovation Platform (SMIP).

DELIVERABLES

- Delivered complete Smart Manufacturing Workshop manuals and instructions.
- Delivered complete Project Documentation package.

REUSABLE OUTCOMES / SM MARKETPLACE

- Smart Manufacturing curriculum modules and templates
  - Smart Industrial Automation
  - Industrial Internet of Things (IIoT) Fundamentals
  - Industrial Data Analytics and Decision Making
  - Digital Systems Engineering
  - Augmented and Virtual Reality

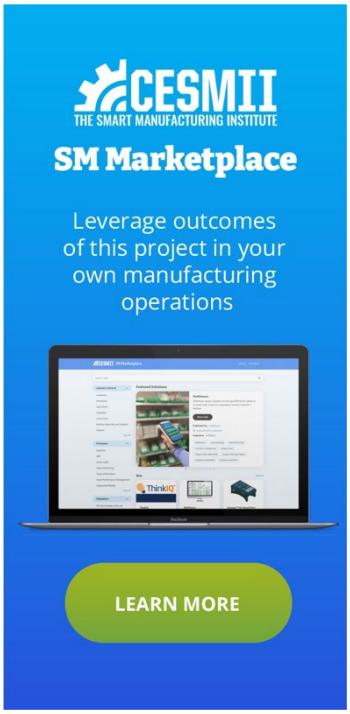
RESULTS

4 Courses

Developed and delivered four different Smart Manufacturing short courses.

11+

Over 11 regional manufacturers participated in Smart Manufacturing Instruction workshops.



PROJECT DETAIL
Budget Period: BP5
Submission Date: 7/15/2024
Sub-Award (contract) Number:
4550 G IA051
SOPO: 2359

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This material is based upon work supported by the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE) under the Clean Energy Smart Manufacturing Innovation Institute (CESMII) Award Number DE-EE0007613.