

# Experiential Learning Opportunity in Mechatronics and Robotics

Today's advanced manufacturing relies on precision mechatronics and robotics to produce technologies from touchscreen tablets and phones to robotic assembly machines. As these smart technologies continue to evolve, industry needs to build a larger and more diverse STEM workforce in electrical, mechanical, computer, robotic, controls, and AI. These jobs require interdisciplinary and experiential knowledge in electrical, mechanical, and computer fields to operate, troubleshoot, and develop new automation solutions.



## ExLENT Training

You are invited to apply for a multi-phase, experiential learning opportunity in mechatronics and robotics. The aim of this training is to increase interest in careers in emerging technology fields including advanced manufacturing, advanced wireless, artificial intelligence, biotechnology, quantum information science, semiconductors, and microelectronics. The program is funded by the National Science Foundation's Experiential Learning for Emerging and Novel Technologies (ExLENT) program (Award # 2322532).

## Timeline

**February-May 2025:** Self-paced learning with a time commitment of approximately 3 hours per week.

**May 19-25, 2025:** One week of hands-on laboratories at Michigan Tech.

**May 26-31, 2025:** One week of rotational site visits at regional advanced industrial facilities to provide an industry-oriented outlook and build industrial connections.

## How To Apply



<https://etap.nsf.gov/award/7361/opportunity/9902>

### Phase I

- Online Mechatronics learning modules to build foundational knowledge

### Phase II

- Experiential learning in Michigan Tech Mechatronics labs.

### Phase III

- Rotational site visits at industrial partners.



Project Website: <http://mtu.edu/mechatronics-learning>



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## Participating Partners

Three regional colleges and eight industrial partners are collaborating to provide these experiential learning opportunities in Mechatronics and Robotics. Their aim is to promote and build a diverse STEM workforce in emerging technology fields, including robotics, mechatronics, and advanced manufacturing.

- Michigan Technological University
- West Shore Community College
- Gogebic Community College
- Keweenaw Economic Development Alliance (KEDA)
- Michigan Works
- MTEC SmartZone
- Burton EMS
- Calumet Electronics
- FloraCraft
- GS Engineering
- Ironwood Plastics
- REL Inc.
- Metalworks
- Orbion Space Technology

## Training Benefits

- Learn theoretical knowledge in critical areas of the rapidly developing field of Mechatronics.
- Complete 40 hours of practical, experiential training on state-of-the-art industrial equipment at Michigan Tech.
- Obtain first-hand knowledge of complex mechatronics systems and how they are used in industry.
- Engage in networking opportunities with academic and industry partners.
- Understand the necessity, diversity, and sense of belonging in the Mechatronics workforce.
- Aligned with the regional economy in the Upper Peninsula and Northern Michigan.
- Earn a certificate of program completion.

## Financial Support

One-time stipend	\$1,000
Phase II and III Support	
Programming at Michigan Tech and Industrial Clusters	\$2,000
14-day per diem	\$840
Hotel accommodation	\$1,680
<b>Total Financial Support</b>	<b>\$5,520</b>

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