



# News Release

Contact:  
**Jason Parent**  
Development and  
College Relations Office  
33 Edgemont Drive  
Presque Isle, ME 04769  
Phone: (207) 768-2808  
Fax: (207) 760-1101  
jparent@nmcc.edu

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## **NMCC students build teaching tools that will be used by future generations of College students**

*Aroostook County* - Students enrolled in a basic electronics class at Northern Maine Community College this fall are building the teaching tools that will be used by those that follow in their footsteps, and the hands-on learning experience has a secondary benefit of saving the institution money.

Every year students in first-year classes taught by veteran NMCC computer electronics instructor Joseph McLaughlin conduct lab experiments on pieces of equipment known as trainers. The alternating and direct current circuit devices are used in introductory courses for those studying computer electronics, electrical construction and maintenance and, more recently, wind power technology.

As McLaughlin prepared for his classes this summer he realized that the trainer devices he had used in his courses over the past 15 years were showing wear and were in need of replacing. The meticulous care he and his former students had exercised had already extended their usefulness five years beyond the traditional ten years for similar units.

“I looked into the replacement trainers and found them to average in cost around \$350 each,” said McLaughlin. “On the other hand, a kit to build such a unit cost \$100 less.”

It wasn't, however, the hundreds of dollars in savings that swayed the instructor to go with the kits, but rather the concept of providing an excellent experiential learning opportunity for this year's incoming class. The idea of having the students themselves build the trainers they and their successors would later use proved to be the most lucrative of all.

“It's good hands-on practice that is hard to simulate. It's a project they get to see all the way through and get a tangible final product. The students get to put their soldering skills to work, as well as learn valuable problem solving skills as they follow written instructions and put the components together in a way that results in a working trainer,” said McLaughlin.

Constructing the 18 new trainers takes the 15 students in McLaughlin's lab anywhere between nine and 12 hours per unit. Upon completion, they then test and calibrate the trainers, which in turn allows them to use other test equipment including Oscilloscopes, multi-meters, and frequency counters.

"This provides us with a great hands-on experience," said Jessica Long, a computer electronics student from Ashland. "We are getting to work with some equipment we will use in the field. I understand much better when I can actually do it. By putting it together myself, I understand how each component works."

The single mother enrolled at NMCC this fall to expand her future career opportunities. Until recently she worked as clerical support in the office of a long-haul trucking company where she often ended up having to repair the network when it went down, even though she says she didn't really understand all of the ins and outs of what she was doing.

"I was interested in computers. It's a growing and needed field. I've noticed there aren't many women going into it, and I wanted to do my part to help change that," said Long.

The co-ed is among the largest incoming class of students in the electrical/electronics programs McLaughlin has seen in his 28 years with NMCC. He is currently teaching three lecture courses and two lab sections of basic electronics to accommodate the more than 70 students enrolled in the discipline this fall.

Aside from the size of this year's class, the students working on the trainers will leave their mark behind on the equipment they are constructing. Future generations using the devices will know who built the units as a "constructed by" sticker will be affixed to the back side of each trainer with the name of the student who completed the project.

"I never imagined that I would be able to do something like this and now other students will benefit in the future," said Casimiro Fernandez, an electrical construction and maintenance student from Central Falls, Rhode Island. "It's opened my eyes to going further in the electronics field, perhaps even changing my major to computer electronics."

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Northern Maine Community College computer electronics student (left to right) Jessica Long of Ashland, and wind power technology students Aaron Nelson of Farmington, and Benjamin Dutil of Winslow work on constructing trainers in the lab component of a basic electronics course taught by instructor Joseph McLaughlin recently.