



August 20, 2010  
NR10070

## News Release

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### Efficiency Maine Grant helping to “green” curriculum at NMCC

**Aroostook County** -- Plans to revise the current building energy systems curricula across the construction trade programs at Northern Maine Community College to include green energy, building methods, energy audits and weatherization of existing structures are getting underway in earnest this month.

The initiative, made possible through a \$225,000 grant to NMCC from the Efficiency Maine Trust funded through the American Recovery and Reinvestment Act, will provide for the introduction of new classes and significant revisions to existing courses offered on the campus that will stress energy efficiency in construction and renovation practices.

“The need for improving building energy proficiency is evident through new codes and building standards, as well as the public’s demand for a reduced dependence on fossil fuels and to improve overall energy efficiency,” said Brian McDougal, chair of NMCC’s trade and technical occupations department. “Whether the buildings are older existing structures or a building that is presently being designed for construction, there are numerous incentives to evaluate and improve a building’s energy performance.”

Under the first phase of the grant, NMCC faculty are themselves serving as the pupils, working to earn their building analyst certification. The week-long course, offered through the Building Performance Institute (BPI), covers the basic principles of building science to assess energy efficiency in a home while also monitoring conditions that have a direct impact on human health and safety.

On August 18, the instructors were led through a series of hands on exercises at a private residence in downtown Presque Isle that is currently on the housing market. Through an agreement with local realtor ReMax Central, the house served as a lab for exercises in home energy auditing and home energy efficiency for the day.

Moving forward, McDougal, and the faculty members in the construction trade programs, will begin developing the new curriculum, which will include the addition of courses in Energy Auditing and Solar Domestic Hot Water. The Energy Auditing class will be based on the BPI certification standards as required for Efficiency Maine and Maine State Housing. It will be required of all plumbing and heating program students and be offered as a technical-related elective for other construction cluster programs.

The Domestic Solar and Hot Water course, the only one of its kind offered in the region, will also be added to the plumbing and heating program as a graduation requirement. The three credit hour course offering will feature both classroom and lab time over a 15-week semester. The curriculum will follow the North American Board of Certified Energy Practitioners (NABCEP) principles for solar water heating.

Aside from the new courses, the plumbing and heating curriculum will be further enhanced by adding instruction modules in energy control and management techniques into existing heating and refrigeration courses in the program's third and fourth semesters. The new modules will reflect newer energy management techniques such as Direct Digital Control.

The Electrical Construction and Maintenance I and Electrical Construction and Maintenance II courses will be revised with additional focus on designing and managing electrical systems, particularly energy efficient systems, efficient motors using alternative and renewable electrical energy sources, retrofits and energy audits.

A current course, Blueprint Reading for the Construction Trades, which is required of all construction cluster students, will be strengthened with green energy elements, including isometric and orthographic drawings to show green building materials and energy systems. The Building Science I and Building Science II courses will be expanded from three credit hours to four credit hours with the addition of 30 hours per semester of laboratory training.

“Students within the building trades program will be receiving training in ‘greener’ building methodologies in their building science courses. As we refocus our courses, and look towards a reduction of energy consumption by shifting to the teaching of alternative energy sources, we not only are preparing our students for a changing workforce, but are also helping to reduce our carbon footprint,” said McDougal.

In addition to the curriculum enhancements in the construction trade programs, a small portion of the Efficiency Maine grant will be used to purchase equipment for NMCC's Wind Power Technology Program, the first and only of its kind in New England.

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*Howard Vics (left) of CleanEdison leads NMCC construction trade programs faculty through a hands-on energy audit at a private Presque Isle residence. The day-long audit was part of the training the faculty are undertaking to earn their building analyst certification. Participating in the course are (left to right) Pam Buck, computer aided drafting instructor; Todd Maynard, electrical construction and maintenance instructor; Al St. Peter, plumbing and heating instructor; Donald Hanson, adjunct instructor for building science courses; and Brian McDougal, chair of the trade and technical occupations department.*