

Making the Connection

E=mc² now translates to Energy = Macomb Community College

Renewable energy curriculum captures students' attention

Michigan's Great Lakes are attracting the interest of more than boating and fishing enthusiasts these days, and Macomb Community College is prepared to help the region make the most of it as well as other initiatives similarly green in nature.

"Wave energy from the Great Lakes and the state's natural wind from being a peninsula are making Michigan an excellent location for renewable energy programs," explained Lisa Richter, instructor of engineering and advanced technology at Macomb. "With the increased emphasis on renewable energy, there will be job opportunities in Michigan."

The wind power is a given, Richter added, and, surprisingly, harvesting solar power in Michigan is also a viable industry.

"My students were surprised to learn that the Soo had only one hour less light than Florida," Richter said. "Even though we have the clouds, we are still getting the ultraviolet rays."

Teaching students to harvest and store those energies is among the goals of the college's renewable energy certificate. The recently created certificate program complements some of the college's existing programs.

"When we began developing courses for the renewable energy certificate, we realized these applications could be integrated with many of our existing program paths," explained Richter.

For instance, the wind and solar courses complement the college's mechatronics program, while geothermal energy complements climate control. Students can opt to earn the certificate alone in a 15 credit-hour sequence of classes or incorporate it into an associate degree program.

Macomb's green curriculum initiatives were strengthened earlier this year when the college was awarded two federal government grants, one for \$475,750 and another for \$333,000. The grants support the development of green education and job training



Macomb students Zach Ostrander and Michael Niven build a small solar panel during the Introduction to Solar Energy Class on South Campus.

programs and the purchase of related equipment.

While the certificate program will not launch officially until the fall 2009 semester, nearly 90 students have already taken the renewable energy classes the college offered in fall 2008 and winter 2009 as a pilot. These programs were only advertised via word of mouth and

through a few posters hung near the classroom.

"The potential in the renewable energy and green technology arena is just beginning to open up," said Jim Jacobs, Macomb College president. "This community is uniquely positioned to be able to build upon its automotive heritage of engineering and manufacturing and to become a center of excellence in these new technologies."

With interest increasing in renewable energy careers, Macomb added a Renewable Energy Career Academy to this year's line up of career exploration opportunities for high school students. Those who participate in the four-day renewable energy academy will construct and test windmills, build hydrogen fuel cell vehicles and generate power from solar panels.

"Renewable energy programs are here to stay," said Richter. "Rising gas and fuel prices, of course, have had an impact, but, more importantly, the mindset has been changed about renewable energy."

Students today are much more environmentally conscience than students a decade ago. Students are incredibly excited about these programs."

Weeklong, hands-on academies give real-life view of careers

Each summer for more than 10 years now, area high school students don chefs' hats, climb into firefighters' gear or peer into microscopes as participants in the Macomb Community College Career Academies. In each instance, they're learning the realities of a career that interests them. By the end of the weeklong academy, they either are certain of their career choice or realize the career wasn't quite what they expected.

Macomb faculty and staff specifically design the hands-on academies to provide an accurate representation of the duties and responsibilities of specific careers.

That means participants in the Veterinary Technician Academy are cleaning dogs' teeth, and those in Media and Communication Arts are designing graphics using high-end software, and those in Robotics are designing, building and debugging robots.

"These are not lecture-based experiences," explained Ed Stanton, manager of special projects at the college.

"Participants in Macomb's Career Academies have the

courses and programs the college is offering," said Stanton. "Macomb began offering a for-credit renewable energy course last fall."

While the Biotechnology Academy has been offered for several years, Stanton says its popularity has grown in direct proportion to the increase of movie and television shows detailing crime scene investigations. The academy "gives the students a taste of what they see on TV," as they analyze DNA, perform cutting-edge scientific techniques, and examine drug and vaccine components. Registration is limited to maintain a good teacher/student ratio.

Academy participants must be at least 15-years old and have a 2.0 grade point average.

For more information about the academies and to register, contact Stanton at 586.445.7640 or stantone@macomb.edu.

College connection to local districts saves time, money

Many of the Warren Consolidated high school students are earning college credit before they even attended their senior prom this year in a program that can considerably reduce both the time and cost associated with a college education.

Articulation agreements have long provided for awarding college credit if a student earns a grade of B or better in designated high school courses that replicate the content of equivalent college courses. Because there is no charge for the articulated credit, students and parents are taking a second look at a decades-old opportunity.

"Because of these tough economic times, parents are now keeping track of the college credits their students are earning," said Frank Antonucci, director of Career, Technical and Education programs for Warren Consolidated Schools and principal of its Career Prep Center. "I've never seen this kind of demand before."

More than 100 articulation agreements connect Macomb Community College with local high schools in 15 different subject areas. In Warren Consolidated, many of the Career and Technical eligible students are taking advantage of the opportunity these agreements represent. Students are earning 4-12 college credits that can be applied to the approximately 62 credits

Macomb County school districts that have articulation agreements with Macomb Community College:

- Anchor Bay
- Armada
- Center Line
- Chippewa Valley
- Clintondale
- Cousino
- East Detroit Public Schools
- Fitzgerald
- Fraser
- Lake Shore
- Lakeview
- L'Anse Creuse
- New Haven
- Romeo
- Warren Consolidated
- Warren Woods

they need to earn an associate degree from Macomb. The number of programs covered under articulation agreements with each school ranges from one course to several courses based on portfolio review of student work. Articulated credits are most often available in automotive technology, culinary arts, manufacturing technology, accounting and Marketing programs.

Students interested in earning articulated college credit while still in high school should talk to their high school counselor and find out if the program they are interested in is eligible. To apply the credits they have earned to a program at Macomb, they must:

1. Make sure they have met all the high school requirements listed in the articulation agreement.
2. Complete the application for articulated credit and include any required signatures.
3. Submit application for the articulated credit with the \$5 application fee to the Macomb Community College Registration Office at South or Center Campus.
4. Enroll in Macomb classes that are specific to the terms of the agreement. A waiver may be necessary in the case of pre-requisites, which can be obtained from the associate dean of that department.
5. Articulated credit will appear on a student's transcript with the other college courses that they have taken. "Students and their parents are no longer taking this opportunity for granted, and the students are much more serious about the program than in the past," said Antonucci. "It's one of the benefits of the career/technical pathway, and it encourages our students to reach for the stars."

The realities of a career

This year's academies, along with times and costs are:

- **Law Enforcement**
June 22-26,
9 a.m. to 4 p.m. \$160
- **Media and Production**
June 22-26,
9 a.m. to 3 p.m. \$160
- **Culinary/Pastry Arts**
June 22-26,
9 a.m. to 3 p.m. \$160
- **Veterinary Technician**
June 22-26,
9 a.m. to 3 p.m. \$160
- **Fire Services**
June 22-26,
9 a.m. to 4 p.m. \$160
- **Robotics**
June 22-26,
8:30 a.m. to 3:30 p.m. \$100
- **Biotechnology**
July 6-9,
8:30 a.m. to 12:30 p.m. \$120
- **Veterinary Technician II Exotic Animals**
July 14-26,
9 a.m. to 2 p.m. \$100
- **Renewable Energy**
Aug. 10-13,
8:30 a.m. to 12:30 p.m. \$120

opportunity to engage in actual activities of specific careers."

Initially, Macomb only offered the Law Enforcement Academy but has added more offerings over the years, often reflecting growing career trends. Among this year's nine academies is the new Renewable Energy Academy.

"We strive to be timely with career trends and with the

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Education • Enrichment • Economic Development
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to Career Technical Education

For more information about CTE at the high school level contact the Macomb Intermediate School District. Contact Macomb Community College for college level programs. See contact information above.



Macomb Career and Technical Education
Administrators Association



Cutting Edge to the Future
Macomb County/St. Clair County

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