

# TECH UPDATE

NEWS FROM THE APPLIED SCIENCE AND  
ENGINEERING TECHNOLOGY DIVISION

[www.monroeccc.edu](http://www.monroeccc.edu)

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INSIDE

## ASET Students Flip the Switch on Solar Array



The project is just the first  
of several planned renewable  
energy installations by ASET.

# STUDENTS DESIGN, INSTALL SOLAR ARRAY ON CAMPUS

At the end of the Fall Semester, Monroe County Community College renewable energy students flipped the switch on a 2.1-kilowatt solar array they designed and installed.

The array, which is located next to the Career Technology Center, consists of eight 260-watt Solarworld panels, said Alex Babyecz, assistant professor of construction management and renewable energy technology. Each panel has an Enphase M-215 micro-inverter that converts the DC voltage generated by the panels into 240 volts that are then fed into the electrical system of the Career Technology Center.

Students Jacob Boes, Lisa Whiteside, Nikko Amaya, Bradly Greer and Nickolas Gaynier – with the assistance of Derek Whitaker, a retired DTE

Energy engineer and local electrical inspector – performed all aspects involved in bringing the solar array to fruition, including planning the system, excavating the site, installing the ground mounting rack donated by Patriot Solar Group, mounting the panels and connecting all of the components to the Career Technology Center.

Although the amount of energy generated by the student-built system is a fraction of what is generated by the Career Technology Center's primary power system, its development was a valuable learning experience, and it will be an ongoing instructional tool for students in applied science and engineering programs at the college, Babyecz said.

"The energy generated from the

array is a very small part of the electrical power used by the building, but it allows the students see how a grid-tied system is configured," Babyecz said. "The system will allow students to experiment with electrical output by adjusting the tilt angles of the array and [by using] different inverter and wiring configurations"

Babyecz said that the solar array is equipped with a data logging system to track the output of each panel on a daily basis, allowing students to calculate its efficiency in variety of configurations.

This project is just the first of several planned renewable energy installations by MCCC's Applied Science and Engineering Technology Division.



*Clockwise from left: Jacob Boes, Lisa Whiteside, Nikko Amaya, Bradly Greer and Nickolas Gaynier*



Representatives from Monroe County Community College, DTE Energy and Lawrence Technological University are working on expanding transfer options for students.

# LTU, MCCC MEET TO DISCUSS ADDITIONAL POWER ENGINEERING PARTNERSHIP

Lawrence Technological University President Dr. Vinder K. Moudgil and Monroe County Community College President Dr. Kojo A. Quartey met at MCCC during Fall Semester to propose a new MCCC, LTU and DTE Energy joint education model through LTU's National Science Foundation S-STEM Grant. Representatives from the three organizations were also present and are now working on the details of the proposal. The proposed program would be a 2+2 program for MCCC students who plan to transfer to LTU. Their education would be funded by grant dollars to support a total of four years scholarship based on financial need. The National Science Foundation has awarded a five-year grant totaling \$598,000 to provide scholarships to help 100 graduates of MCCC earn degrees in power engineering from LTU.

The college already has one NSF S-STEM Grant partnership with LTU. After completing MCCC's two-year program in nuclear engineering technology, MCCC graduates are eligible for an NSF scholarship in order to study electrical engineering with a concentration in power engineering at LTU. The grant provides a scholarship pool of up to \$100,400 a year to 18 LTU students and two MCCC students each year through the 2016-17 academic year. New scholarship recipients could start taking courses at Lawrence Tech in January.

The LTU-MCCC partnerships are designed to address the national need for a highly skilled, diversified workforce in the generation, transmission and distribution of power.

## AWS HEAD VISITS MCCC

American Welding Society President Dean R. Wilson visited with welding technology and nondestructive testing students, as well as faculty and staff of the Applied Science and Engineering Technology Division students in September. Wilson discussed the AWS's new online credentialing pathway for students during a presentation in the Career Technology Center.



Dean R. Wilson, AWS President

## CONTACT INFORMATION

### DEAN

Parmeshwar Coomar  
[pcoomar@monroeccc.edu](mailto:pcoomar@monroeccc.edu)  
 734-384-3409

### ADMISSIONS & GUIDANCE

Mark Hall  
[mhall@monroeccc.edu](mailto:mhall@monroeccc.edu)  
 734-384-4261

### APPRENTICE PROGRAMMING/ ADMINISTRATIVE ASSISTANT

Cameron Albring  
[calbring@monroeccc.edu](mailto:calbring@monroeccc.edu)  
 734-384-4112

### AUTOMOTIVE ENGINEERING

Parmeshwar Coomar  
[pcoomar@monroeccc.edu](mailto:pcoomar@monroeccc.edu)  
 734-384-3409

### CONSTRUCTION MANAGEMENT

Alex Babycz  
[ababycz@monroeccc.edu](mailto:ababycz@monroeccc.edu)  
 734-384-4116

### ELECTRONICS/ELECTRICITY

Tom Harrill  
[tharrill@monroeccc.edu](mailto:tharrill@monroeccc.edu)  
 734-384-4115

### MECHANICAL DESIGN

Dean Kerste  
[dkerste@monroeccc.edu](mailto:dkerste@monroeccc.edu)  
 734-384-4121

### MECHANICAL ENGINEERING

Martin Dubois  
[mdubois@monroeccc.edu](mailto:mdubois@monroeccc.edu)  
 734-384-4120

### NUCLEAR ENGINEERING TECHNOLOGY

Martin Dubois  
[mdubois@monroeccc.edu](mailto:mdubois@monroeccc.edu)  
 734-384-4120

### PRODUCT & PROCESS TECHNOLOGY

Bob Leonard  
[bleonard@monroeccc.edu](mailto:bleonard@monroeccc.edu)  
 734-384-4114

### QUALITY SYSTEMS & METROLOGY

Parmeshwar Coomar  
[pcoomar@monroeccc.edu](mailto:pcoomar@monroeccc.edu)  
 734-384-4209

### RENEWABLE ENERGY

Alex Babycz  
[ababycz@monroeccc.edu](mailto:ababycz@monroeccc.edu)  
 734-384-4116

### WELDING & MATERIALS TECHNOLOGY

Roop Chandel  
[rchandel@monroeccc.edu](mailto:rchandel@monroeccc.edu)  
 734-384-4165

# Solidworks User Group Links Students with Employers

The Southeast Michigan and Northwest Ohio SOLIDWORKS User Group held meetings in October and April. Combined, the meetings were attended by nearly 200 members, consisting of students, teachers, designers and engineers.

SOLIDWORKS is solid modeling computer-aided design software used by more than 2 million designers and engineers at more than 165,000 companies worldwide.

Each user group meeting begins with opening remarks and dinner. Following dinner, the members choose from one of three SOLIDWORKS presentations by industry experts. At the conclusion of the first round of presentations there is a short networking intermission before the members attend a second round of presentations. The evening concludes with prizes such as Google Nexus 7 tablets, 3Dconnexion mice, SOLIDWORKS swag and gift cards.

"The greatest benefit of ASET hosting meetings of this caliber is to connect students with employers," said Dr. Dean Kerste, professor of mechanical design technology. "Not only does the user group provide great presentations, it also allows for one-on-one networking opportunities for students and employers."

Kerste recently attended the SOLIDWORKS World 2015 Conference in Phoenix, Ariz., which featured 100 exhibitors displaying the latest in 3D CAD technology.

"Attendance at SOLIDWORKS World not only offers many great technical sessions, it also provides the opportunity to network with key people in the design industry."

The SOLIDWORKS conference was attended by more than 5,500 designers and engineers from around the world. Keynote speakers included theoretical physicist Dr. Michio Kaku, former CEO of MakerBot 3D printers Bre Pettis and industrial designer Jinsop Lee.



Bre Pettis (left), former CEO of MakerBot 3D printers, and Dr. Dean Kerste, professor of mechanical design technology, pose for a photo at the SOLIDWORKS World 2015 Conference.

## ASET Division Accepted Into Registered Apprenticeship College Consortium

The Applied Science and Engineering Technology Division received acceptance into the Registered Apprenticeship College Consortium in January. MCCC has been added to U.S. Department of Labor, Office of Apprenticeship website: [http://www.doleta.gov/oa/RACC/College\\_Members.cfm#MI](http://www.doleta.gov/oa/RACC/College_Members.cfm#MI).



# MECHANICAL DESIGN TECHNOLOGY PROGRAM ACQUIRES HOLOGRAPHIC DISPLAY



A 3-Dimensional holographic imaging display – zSpace – is now part of the Rapid Prototyping Lab in the Career Technology Center. The holographic display allows mechanical design technology students to interact with simulated objects in virtual environments as if they are real. It provides an immersive environment for users in many industries driven by the desire to create and visualize objects with immersive realism.

“The addition of the holographic display allows design students to actually see their design in 3D before the product

is prototyped or manufactured,” said Dr. Dean Kerste, professor of mechanical design technology.

Applications for holographic displays like zSpace could include telemedicine, 3D mapping technologies, entertainment, remote guidance during emergency situations, remote video conferencing, manufacturing and more. Kerste invites campus colleagues and students to stop by and experience the zSpace virtual environment. Click here for an introduction to zSpace: <https://www.youtube.com/watch?v=uUO7jnU7NIA>.

## X-Tech: Exploring Careers in Applied Science and Engineering Technology

In the fall, Monroe County Community College hosted X-TECH – an opportunity for career exploration in the fields of applied science and engineering technology – in the Career Technology Center. X-TECH is designed for middle and high school students and their parents, career-changing adults and all others interested in experiencing what it is like to study and work in the skilled trades programs offered at the college. Participants had the chance to virtual weld, run robots by FANUC America, draw with SolidWorks design software, view demonstrations of new equipment by industry representatives, test steel strength, program electronic equipment and view the college’s new automotive service lab.



# ASET Division Promotes Construction-Related Careers at EMU Career Expo

Alex Babycz, assistant professor of construction management technology, and Mike Reaume, Applied Science and Engineering Technology Division technician/Perkins technical specialist, hosted a booth at the annual "Just Build It!" career expo held at the Eastern Michigan University Convocation Center. The event was attended by more than 1,700 students from middle school through high school who are interested in civil engineering, skilled trades and various construction-related careers. The event was an opportunity for ASET representatives to discuss construction management technology, renewable energy, green building, sustainability and resource conservation with prospective students, as well as the various classes,

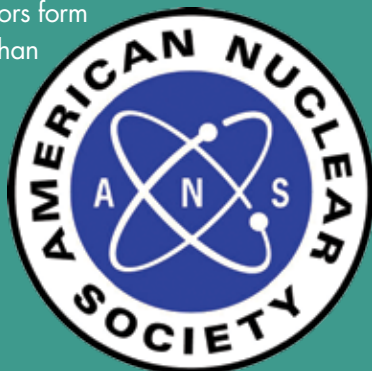


degrees and certificate programs offered at MCCC and the types of jobs available to graduates of these programs.

*Alex Babycz gives advice on construction careers at the "Just Built It!" Career Expo.*

## DEAN, FACULTY MEMBER ATTEND AMERICAN NUCLEAR SOCIETY CONFERENCE

Parmeshwar (Peter) Coomar, dean of the Applied Science and Engineering Technology Division, and Marty Dubois, assistant professor of mechanical engineering technology, attended the American Nuclear Society's Conference on Nuclear Education and Training (CONTE) in Jacksonville, Fla. in February. CONTE is a gathering of nuclear professionals and educators from across the nation. More than 350 were in attendance, and topics included industry partnerships, best practices for the Nuclear Uniform Curriculum Program and new standards for nuclear training.



## Duo-Gard Corporation Promotes One MCCC Alum, Hires Another

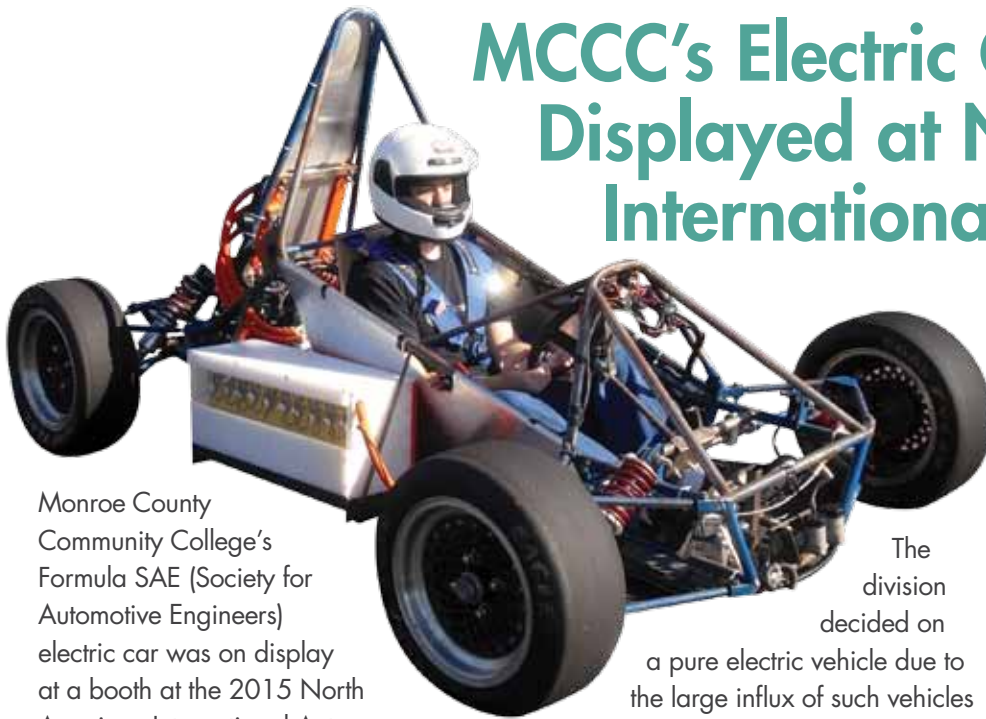
Monroe County Community College alum James Evanski was recently promoted to welding supervisor for Duo-Gard Corporation, Canton. Shortly after being hired, he was made responsible for managing the entire welding fabrication



*Vern White*

shop, as well as interviewing and hiring prospective welders. Evanski then hired former MCCC welding student Vern White. The Duo-Gard company is a leading designer and fabricator of outdoor protective shelters, canopies and outdoor structures.

# MCCC's Electric Car Displayed at North American International Auto Show



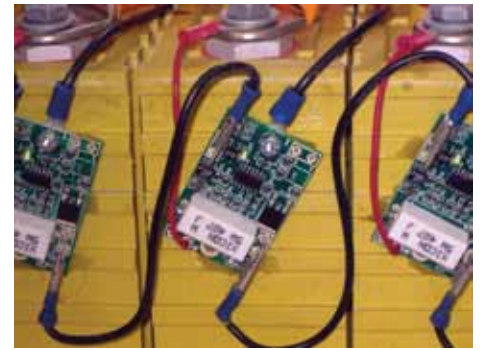
Monroe County Community College's Formula SAE (Society for Automotive Engineers) electric car was on display at a booth at the 2015 North American International Auto Show at COBO Center in Detroit, which ran from January 17-25.

The car was designed and fabricated by students enrolled in programs housed in the Applied Science and Engineering Technology Division, including automotive engineering technology, electronics and computer technology, mechanical design technology and mechanical engineering technology.

It was displayed around the Innovation Track sponsored by Shell and alongside automobiles developed by Michigan State University (solar car and Formula Racing), University of Michigan (solar and SAE cars), U-M Dearborn (Formula Racing), Wayne State University (SAE car) and Kettering University (Formula Racing). Also represented will be Lawrence Technological University's transportation and design program, the University of Michigan's Stamps School of Art and Design, and the College for Creative Studies.

"The MCCC electric car started off as a conventional Formula SAE car a few years ago, and we decided that we wanted to have the students try to transform it into a hybrid or pure electric vehicle," said Tom Harrill, assistant professor of electronics and computer technology.

The division decided on a pure electric vehicle due to the large influx of such vehicles into the automotive market in recent years. While the car continues to serve as a critical instructional tool in the classroom and labs of the college's Career Technology Center, Harrill said, it also has become a key showpiece to recruit students to the college's applied science and engineering technology programs that prepare students for high-demand, high-skill jobs.

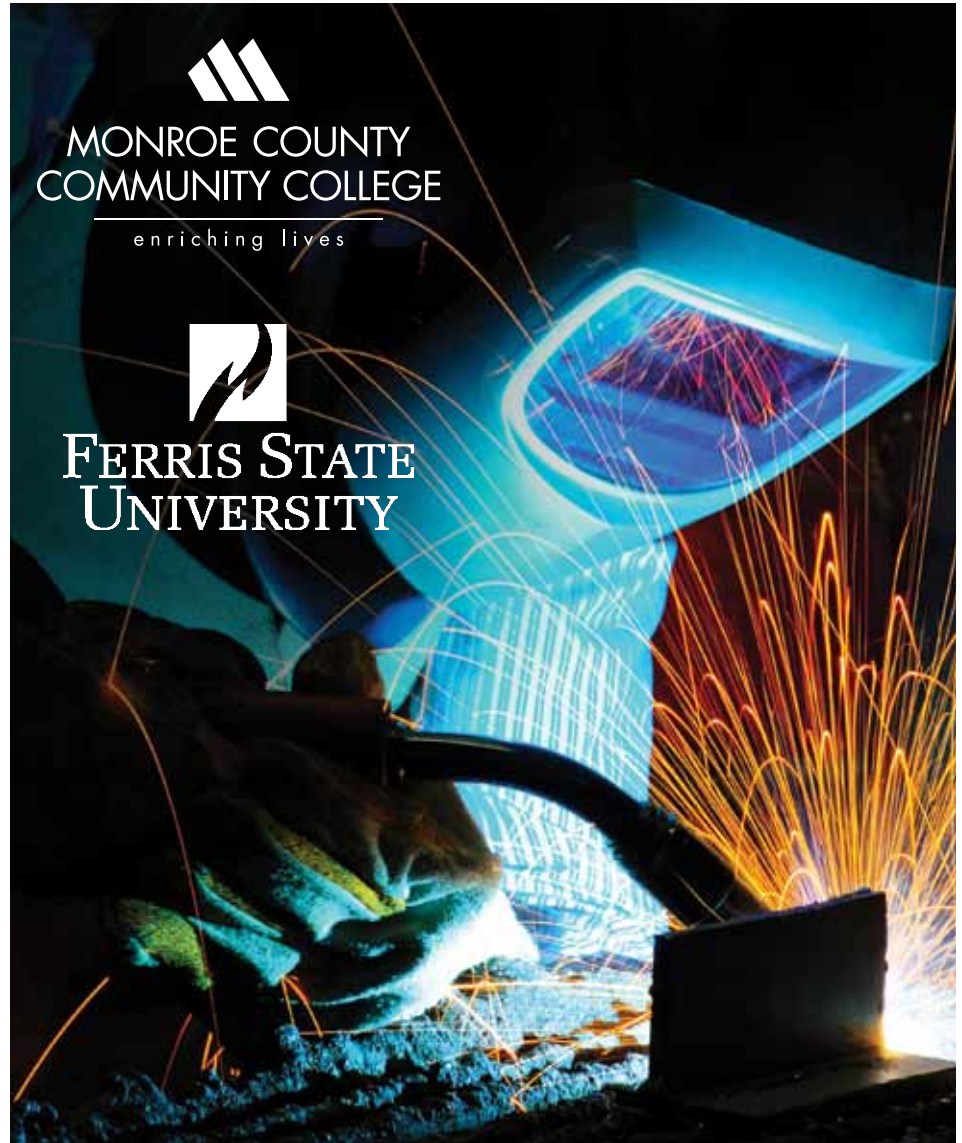


From left, Monroe County Community College representatives Jim Ross and Robert Semanske at the North American International Auto Show.

# MCCC, FERRIS STATE UNIVERSITY SIGN ARTICULATION AGREEMENT IN WELDING ENGINEERING TECHNOLOGY

In an effort to facilitate the transfer process and to promote the closer coordination of academic courses and programs and degrees offered by both institutions, Monroe County Community College and Ferris State University entered into an articulation agreement in welding engineering technology.

To be admitted to Ferris State University's bachelor's degree program in welding engineering technology, MCCC students must have completed an associate degree in welding technology with a minimum GPA of 3.0 (on a 4.0 scale) in major coursework. It is recommended that students submit applications by January 15 prior to fall entry. More details can be found on FSU's website at <http://www.ferris.edu/HTMLS/colleges/university/transfer/Articulation/mcc/MonroeCounty-CC/guides/COET/Monroe-County-CC-Welding-ET.pdf>.



## NEW APPRENTICES ON CAMPUS

Apprentices from Fiat Chrysler's Jeep Plant in Toledo, Ericka Studer and Angela Baldwin are now in their second semester at Monroe County Community College. They are taking electrical courses in the mornings. Each apprentice's goal is to finish with an associate degree in electronics. Both are performing electrical maintenance at the plant.

*Ericka Studer (left) and Angela Baldwin (right)*



## ASET Course Offerings:

| Term   | Subject | Section Name | Credits | Billing Credits | Short Title                        | Start Time | End Time | Days        | Start Date | End Date   |
|--------|---------|--------------|---------|-----------------|------------------------------------|------------|----------|-------------|------------|------------|
| SP2015 | AUTO    | AUTO-201-01  | 3       | 4               | Automotive Digital Electronics     | 5:30 PM    | 9:00 PM  | M/TU/W/TH   | 5/11/2015  | 6/22/2015  |
| SP2015 | CONM    | CONM-107-01  | 3       | 4               | Surveying                          | 6:30 PM    | 9:55 PM  | TU/W/TH     | 5/12/2015  | 6/22/2015  |
| SP2015 | ELEC    | ELEC-125-01  | 3       | 4               | Fundamentals of Electricity        | 5:00 PM    | 9:55 PM  | TU/TH       | 5/12/2015  | 6/18/2015  |
| SP2015 | WELD    | WELD-115-01  | 12      | 16.67           | Entry Level Welding                | 8:00 AM    | 12:55 PM | M/TU/W/TH/F | 5/18/2015  | 7/29/2015  |
| SP2015 | WELD    | WELD-115-61  | 12      | 16.67           | Entry Level Welding                | 5:00 PM    | 9:55 PM  | M/TU/W/TH/F | 5/11/2015  | 7/22/2015  |
| SP2015 | WELD    | WELD-215-01  | 12      | 16.67           | Advanced Level Welding             | 8:00 AM    | 1:00 PM  | M/TU/W/TH/F | 5/18/2015  | 7/29/2015  |
| SU2015 | NUET    | NUET-102-01  | 3       | 3               | Introduction to NDT                | 5:00 PM    | 9:55 PM  | M           | 6/1/2015   | 8/3/2015   |
| FL2015 | CONM    | CONM-160-01  | 3       | 3               | Green Building & LEED System       | 6:00 PM    | 8:55 PM  | TH          | 8/27/2015  | 12/10/2015 |
| FL2015 | MECH    | MECH-103-01  | 4       | 6               | Machining Basics & CNC             | 9:00 AM    | 11:55 AM | TU/TH       | 8/27/2015  | 12/14/2015 |
| FL2015 | MECH    | MECH-103-02  | 4       | 6               | Machining Basics & CNC             | 4:00 PM    | 6:55 PM  | M/W         | 9/2/2015   | 12/14/2015 |
| FL2015 | MECH    | MECH-105-01  | 3       | 4               | CNC III                            | 7:00 PM    | 8:55 PM  | M/W         | 9/2/2015   | 12/14/2015 |
| FL2015 | MECH    | MECH-111-01  | 3       | 4               | Introduction to Fluid Power        | 5:00 PM    | 8:55 PM  | M           | 9/2/2015   | 12/14/2015 |
| FL2015 | MECH    | MECH-201-01  | 3       | 4               | CAD/CAM I                          | 3:00 PM    | 4:55 PM  | TU/TH       | 8/27/2015  | 12/14/2015 |
| FL2015 | MECH    | MECH-221-01  | 3       | 4               | CAD/CAM II                         | 5:00 PM    | 6:55 PM  | TU/TH       | 8/27/2015  | 12/14/2015 |
| FL2015 | NUET    | NUET-100-01  | 2       | 2               | Nuclear Industry Fundamentals      | 7:00 PM    | 8:30 PM  | M/W         | 8/31/2015  | 12/14/2015 |
| FL2015 | NUET    | NUET-102-01  | 3       | 3               | Introduction to NDT                | 5:00 PM    | 7:55 PM  | M           | 8/31/2015  | 12/14/2015 |
| FL2015 | NUET    | NUET-104-01  | 2       | 3               | Visual Testing                     | 5:00 PM    | 7:55 PM  | TH          | 8/27/2015  | 12/14/2015 |
| FL2015 | TECH    | TECH-296-01  | 4       | 6               | Automotive Electrical Systems I    | 6:00 PM    | 8:55 PM  | TU/TH       | 8/27/2015  | 12/14/2015 |
| FL2015 | TECH    | TECH-296A-01 | 3       | 4               | Introduction to Automotive Service | 9:00 AM    | 12:55 PM | W           | 8/27/2015  | 12/14/2015 |
| FL2015 | TECH    | TECH-296A-02 | 3       | 4               | Introduction to Automotive Service | 6:00 PM    | 9:55 PM  | W           | 8/27/2015  | 12/14/2015 |
| FL2015 | WELD    | WELD-115-01  | 12      | 16.67           | Entry Level Welding                | 8:00 AM    | 12:55 PM | M/TU/W/TH/F | 8/27/2015  | 11/6/2015  |
| FL2015 | WELD    | WELD-115-61  | 12      | 16.67           | Entry Level Welding                | 5:00 PM    | 9:55 PM  | M/TU/W/TH/F | 10/1/2015  | 12/11/2015 |
| FL2015 | WELD    | WELD-215-01  | 12      | 16.67           | Advanced Level Welding             | 8:00 AM    | 12:55 PM | M/TU/W/TH/F | 8/27/2015  | 11/6/2015  |



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## QUESTIONS ABOUT THIS PUBLICATION

### CONTACT:

**Cameron Albring**, Applied Science and Engineering Technology Division  
[calbring@monroeccc.edu](mailto:calbring@monroeccc.edu)

734-384-4112 or

**Joe Verkennes**

Editor/Director of Marketing and Communications

Monroe County Community College  
[jverkennes@monroeccc.edu](mailto:jverkennes@monroeccc.edu)

734-384-4201