



## Are you a faculty member in...

- CNC/Machining
- Multi-Skilled/Mechatronics
- Production Operations
- Welding



The Michigan Coalition for Advanced Manufacturing (M-CAM) has developed an online learning community that will allow faculty members to share knowledge, course content and best practices.

M-CAM is a coalition of eight community colleges in Michigan—Bay College, Grand Rapids, Kellogg, Lansing, Lake Michigan, Macomb, Mott and Schoolcraft.

This digital community will allow you to:

- Connect with your colleagues at M-CAM colleges
- Share best practices and ideas
- Initiate and participate in discussions
- Share documents

Visit [engage.m-cam.org](http://engage.m-cam.org)/sign up to get started.

Questions can be directed to Levi Good at [Kellogg Community College, GoodL@kellogg.edu](mailto:GoodL@kellogg.edu).

# NOW AVAILABLE:

## Training that leads to employment.

Gain the knowledge and skills you need to get a job in one of these high-demand areas:

- CNC Machining
- Welding
- Production Operator
- Multi-Skilled Technician



### CNC MACHINING

This certificate program is designed to prepare you for success in careers in advanced manufacturing spanning many industries, including automotive die/mold, medical, aerospace, defense, renewable energy, “green” technologies, and consumer products. Graduates are well-grounded in shop floor machining principles, CNC operation, and two-dimensional G&M code programming.



### PRODUCTION OPERATOR

The Production Operator certificate program prepares you with skills in computers, teamwork, communications, and manufacturing safety. Participants will also be introduced to basic electrical, computer control, mechanical systems, and fluid power fundamentals to understand basic skills within a manufacturing environment.

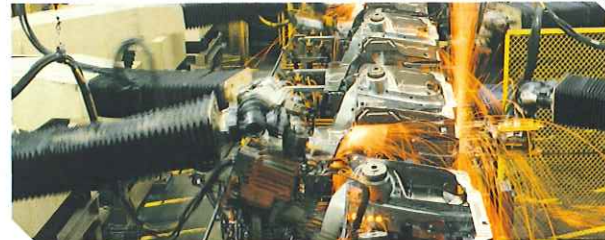
## You may qualify for free classes at Macomb Community College.

Learn if a job in advanced manufacturing is right for you.

Contact us today!

Email: [MCAM@macomb.edu](mailto:MCAM@macomb.edu)

Call: 586.498.4046



### MECHATRONICS/ MULTI-SKILLED TECHNICIAN

The Mechatronics/Multi-Skilled Technician programs provide you with a system-level approach to troubleshooting electromechanical systems via integration of mechanical, electrical, and control systems. This workforce solution is part of an industry-wide effort to improve the manufacturing process by integrating the best available development practices and technologies.

### WELDING

This program prepares participants by incorporating instruction and hands-on application of basic gas and arc welding, basic metallurgy, SMAW, MIG, and TIG welding. Graduates of this program are well-grounded in welding principles and fundamental techniques, leading to AWS certifications.



Discover. Connect. Advance.™

This workforce solution was funded by a grant awarded by the U.S. Department of Labor's Employment and Training Administration. The solution was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability or ownership. This solution is copyrighted by the institution that created it. Internal use, by an organization and/or personal use by an individual for non-commercial purposes, is permissible. All other uses require the prior authorization of the copyright owner.

## Manufacturing in the 21st Century

Welcome to the world of Advanced Manufacturing – 21st century style, where CNC machinists, welders, production operators and multi-skilled technicians are well respected and in high demand. Where the work is constantly evolving and the possibilities and opportunities created by new technology are exciting and seemingly limitless. Here the floors are clean, the equipment is high-tech, the work areas are airy and open, the pay is good and the future is promising.

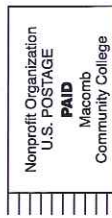
And, despite what you may have heard – manufacturing is not just about automobiles anymore. Highly skilled advanced manufacturing technicians are needed to produce Apple computers and aerospace components, prosthetic limbs and surgical equipment, Fender guitars and Dyson vacuums, and much more.

### Why Manufacturing?

**There were 264,000 job openings in manufacturing in March 2014, according to the U.S. Bureau of Labor Statistics (BLS).**

### HE GOT CALLED FOR HIS FIRST INTERVIEW DURING GRADUATION!

“One of the best things about the program is that it makes you familiar with the plant environment,” says Johnny Jackson, a U.S. military veteran who lost his business in the recession and was living in a homeless shelter in Detroit when he learned about the Production Operator Certificate Program. He completed the program in eight weeks and is now working for GM. “When you do get there, you have the inside track and are completely comfortable.”



**Macomb Community College**  
*Discover. Connect. Advance.*  
14500 E 12 MILE RD., WARREN MI 48088-3896

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**Training for a job in these high-demand areas!**

Computer Numerical Control (CNC) Machining  
Multi-Skilled Technician/ Mechatronics  
Welding/Fabrication  
Production Operator

## UNEMPLOYED OR UNDEREMPLOYED?

*Training for jobs in Advanced Manufacturing*

Production Operator  
Welding  
CNC Machining  
Multi-Skilled Technician

**LOOK INSIDE!**  
TRAINING IS AVAILABLE



**Macomb Community College**

Education • Enrichment • Economic Development

*Discover. Connect. Advance.*

# Train for a new job in Advanced Manufacturing at Macomb Community College

You may qualify for FREE classes in:

CNC Machining | Control Robotics Technician  
Mechatronics/Multi-Skilled Technician | NX9 | Production Operator  
Quality Control Technician | Welding



Learn more about our job training programs at  
a FREE information session:

**Tuesday, August 18 | 2–4pm**

South Campus, John Lewis Community Center, K324  
14500 E. 12 Mile Road, Warren, MI 48088

-OR-

**Wednesday, September 16 | 9–11am**

Center Campus, University Center 1, Assembly Hall  
44575 Garfield Road, Clinton Township, MI 48038

▲ “I would tell someone considering the path that  
I chose to apply (to Macomb) immediately. I feel that  
I’m really set up for my future.”

—Charles Hart, Designer, Fabtronic, Inc.

You may qualify for FREE classes.

**Sign up for an  
information session today!**

[www.macomb.edu/infosession](http://www.macomb.edu/infosession)

586.445.7108



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Community College

Education • Enrichment • Economic Development

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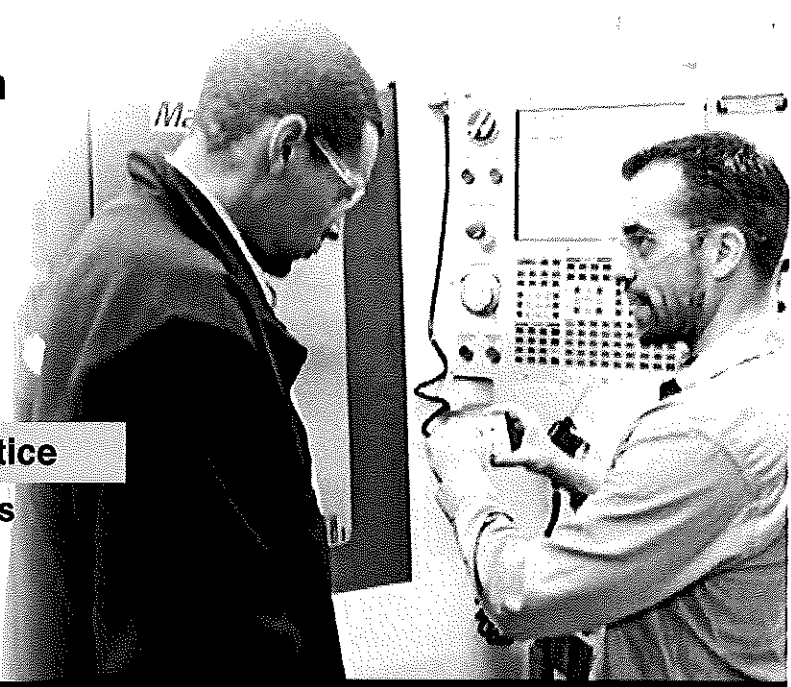
This workforce solution was funded by a grant awarded by the U.S. Department of Labor's Employment and Training Administration. The solution was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability, or ownership.

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Manufacturing Employers: Join us for an Informative Breakfast  
celebrating National Apprenticeship Week

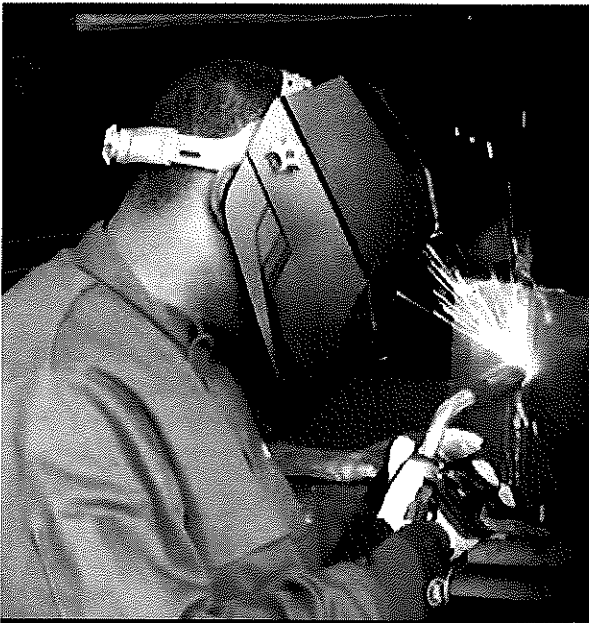
# Hiring & Developing Skilled Employees through Apprenticeships

**Wednesday, Nov. 4, 2015 • 8–10 am**  
**Macomb Community College**  
**South Campus**  
14500 E. 12 Mile Road, Warren  
Building K, Room 301  
Cost: \$15 (includes hot breakfast)



Register today: [www.macomb.edu/apprentice](http://www.macomb.edu/apprentice)

For more information, contact: Susan Bates  
586.445.7117 • [bates@macomb.edu](mailto:bates@macomb.edu)



- Learn about apprenticeships and other workforce development programs
- Hear from employers who use apprenticeships
- Learn about the new Michigan Apprenticeship Program Plus (MAP+)
- Access valuable resources for launching an apprenticeship program
- Find out if apprenticeships are right for your company

Sponsored by:

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# UNEMPLOYED OR UNDEREMPLOYED?

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**Training for employment in Advanced Manufacturing**

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- NX9
- Production Operator
- Quality Control Technician
- Welding

### Why Manufacturing?

There were 296,000 job openings in manufacturing in September 2014, according to the U.S. Bureau of Labor Statistics (BLS).

## JOIN US FOR A FREE INFORMATION SESSION at Macomb Community College

**Monday, April 13, 2015 | 10am-12pm**

South Campus, John Lewis Community Center, K Building, Room 324  
14500 E. 12 Mile Road, Warren, MI 48088

-OR-

**Tuesday, May 5, 2015 | 3-5 pm**

Center Campus, University Center 1, Assembly Hall  
44575 Garfield Road, Clinton Township, MI 48038



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You may qualify for free classes.  
**Sign up today!**  
[www.macomb.edu/infoessionion](http://www.macomb.edu/infoessionion)  
586.498.4046

## Production Operator Certificate (CMNF-8248)

This course will provide students with skills needed to work as a production operator in the manufacturing field. The operator must have an understanding of industry standards, quality processes and maintenance awareness in order to safely and efficiently operate machinery. The production operator certificate program includes an entry level understanding of skills in computers, teamwork, communications and manufacturing safety. Students will also be introduced to basic electrical, computer control, mechanical systems, and fluid power fundamentals to understand basic skills within a manufacturing environment. Students who have successfully completed the program will take the four Manufacturing Skill Standards Council assessments which will provide them with a nationally recognized certification as a Certified Production Technician (CPT).

### Objectives

- Develop strategies for dealing with team conflict and common situations.
- Recognize the key elements that move a team from involvement to empowerment.
- Identify common communication problems.
- Understand non-verbal messages.
- Prepare reports and proposals that inform and provide information.
- Review your work so that it is clear, concise, complete, and correct.
- Define the four basic operations of a computer.
- Identify parts of the computer.
- Understand the requirements of LOTO Procedures.
- Understand PPE requirements.
- Understand tolerances as described by decimal numbers.
- Perform multi-step caliper math using fractions.
- Recognize common electrical components and prints.
- Describe ohms law to determine voltage, current or resistance.
- Define and understand basic laws of energy and motion.
- Troubleshoot/repair/replace pneumatic/hydraulic valves, cylinders, hoses, and tubing's.
- List the three basic functions of the chain drives.
- Identify the various methods of clutch / brake engagement.

### Who Should Attend

- Individuals who are interested in expanding their skills to be better prepared in the areas of teamwork, mechanical, electrical, and specialty processes.

### Program Offering's

#### Modules

1 – Safety	(16 Hours)
2 – Basic Computers	(8 Hours)
3 – Teamwork	(8 Hours)
4 – BluePrint and GD&T	(16 Hours)
5 – Metrology and SPC	(16 Hours)
6 – Basic Electrical	(40 Hours)
7 – Fluid Power Fundamentals	(40 Hours)
8 – Mech. Systems/Hand & Power Tools	(24 Hours)
9 – Manufacturing Processes	(16 Hours)

Employability skills' training is included throughout the program for an additional 24 hours of instruction time.

### Requirements for Certification

#### Student must:

- Complete The Program
- Pass The Four MSSC CPT Exams:  
(MSSC) Manufacturing Skill Standard Council  
(CPT) Certified Production Technician
  1. Safety
  2. Quality Practices & Measurement
  3. Manufacturing Processes & Production
  4. Maintenance Awareness

*100+ Courses available in Advanced Integrated Manufacturing, Advanced Automotive Technology, Renewable Energy, Alternative Energy, Process Improvement/Quality, Defense, and Aerospace.*

### Questions?

Workforce & Continuing Education  
7900 Tank Avenue  
Warren, MI 48092  
Phone: 586.498.4100  
Fax: 586.498.4101  
Email: [workforcedev@macomb.edu](mailto:workforcedev@macomb.edu)  
Web: [www.macomb.edu/wdi](http://www.macomb.edu/wdi)

*"Workforce & Continuing Education can customize any course to meet the specific needs of our customer's."*