

Learning About the Welding Job Market in the Southeast Wisconsin Region



Photo: Milwaukee Area Technical College/Sue Ruggles

*Prepared by the University of Wisconsin-Milwaukee Employment and Training Institute
for the WOW Workforce Investment Board, Inc. and the Regional Workforce Alliance*

Learning About the Welding Job Market

Welding jobs are in demand.

\$12.22: Starting wage for welders

\$18.53: For experienced welders



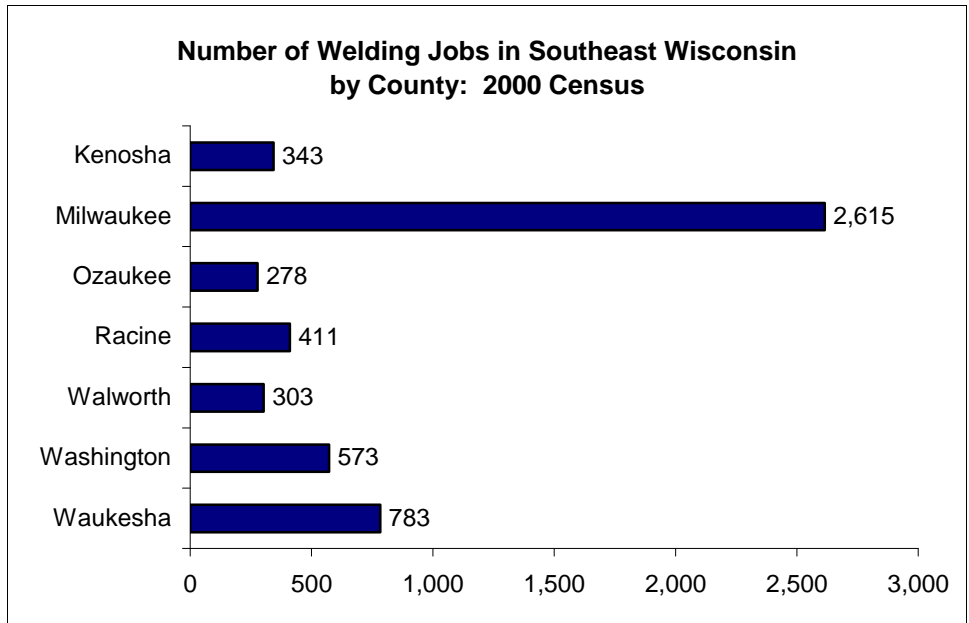
*Welding student at Gateway Technical College.
Photo: Mark Uttech*

▼ *Local Job Outlook*

To help you plan for jobs of today and the future, we regularly contact employers in Southeast Wisconsin to find out what kinds of jobs and what levels of education, training and experience are required. This report gives you a “snapshot” of welding jobs available now and in the future in the seven counties of Southeast Wisconsin – Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha counties.

This is an exciting time to think about careers. Many area companies are looking for new workers to replace those who are retiring and to meet expansion needs. While it is possible to find a welding job right out of high school, you will have a greater choice of careers and higher pay if you complete technical college training. In the welding field you have the opportunity to start as an entry level worker and with more experience advance to very difficult types of welds with average salaries of \$50,000 or more.

Welders are working throughout the region. At the time of the 2000 U.S. Census, about half of all welding jobs were located in Milwaukee County, 31 percent were in the WOW (Waukesha, Ozaukee and Washington) counties, and 20 percent were in Racine, Kenosha and Walworth counties.



Jobs for welders, cutters and welding machine operators are expected to increase five percent in the next 10 years. Openings for welders in the seven-county Southeast Wisconsin region will occur mainly due to the retirement of current workers. While some welding jobs will be eliminated by automated systems, manual welders with a wide variety of skills will still be needed for metal fabrication, maintenance, repair and other work in manufacturing.



*MATC instructor Larry Gross demonstrates robot welding system to a student at the West Allis campus.
Photo: MATC/Sue Ruggles*

In December 2007 the University of Wisconsin-Milwaukee Employment and Training Institute conducted a targeted survey of fabricated metal product manufacturing firms and larger manufacturing companies. For this survey fifty employers reported a need to hire 228 welders within the next six months and another 142 welders in the year following. The types of welders needed by these companies are listed below.

Anticipated Openings for Welders in Southeast Wisconsin
(50 Companies Reporting Welder Openings)

Anticipated Openings	Nov-Dec 2007	Jan-June 2008	July-Dec 2008	Jan-June 2009	TOTAL
MIG welder	19	63	16	12	110
Flux cored arc welder	4	25	20	19	68
TIG welder	6	20	13	4	43
Set up welder	7	16	6	4	33
Welder fabricator	5	11	7	7	30
MIG/TIG/flux cored arc	5	10	6	6	27
Welder fitter	0	8	2	0	10
Spot welder	3	3	3	1	10
MIG/TIG	2	3	2	3	10
Production welder	3	4	2	0	9
MIG/flux cored arc	0	2	0	2	4
Welder burner	0	1	1	1	3
Plate and weld inspector	0	2	1	0	3
Pipe welder	0	2	0	0	2
Finish welder	1	0	0	0	1
Other:	1	2	4	0	7
TOTAL WELDERS	56	172	83	59	370

Categories of welders are identified based on the official American Welding Society (AWS) definitions of the processes: Gas Metal Arc Welding – GMAW (previously known as Metallic Inert Gas-MIG), Gas Tungsten Arc Welding – GTAW (previously known as Tungsten Inert Gas-TIG), and Flux Cored Arc Welding-FCAW. For more background on welding careers, go to the American Welding Society website at www.aws.org/w/a/education/career.html.

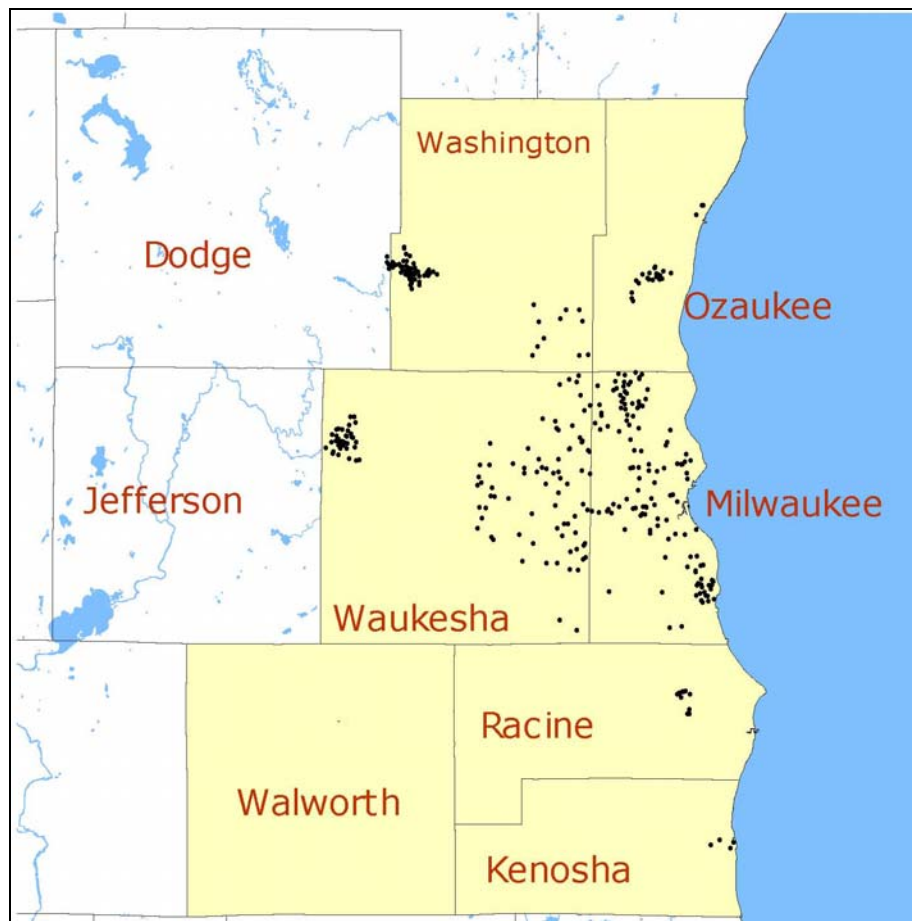


MATC instructor Richard Tupta explains welding techniques to a student at the West Allis campus.

Photo: MATC/Sue Ruggles

Along with the ability to complete welding tasks, all employers are looking for applicants with good work habits and ability to follow instructions. Many of the openings require technical college training and certification, and often 1 to 3 years of welding experience is specified. The locations reported by surveyed companies for recent and current job openings are shown on the map below.

Snapshot of Job Openings for Welders in Southeast Wisconsin
 (50 companies reporting openings for Nov. 2007 – June 2008)



Source: University of Wisconsin-Milwaukee Employment and Training Institute Targeted Survey of Welder Job Openings and Anticipated Needs in Southeast Wisconsin, conducted for the Waukesha-Ozaukee-Washington Workforce Investment Board, December 2007.

Some companies will hire and train their own welders on the job while others will only hire experienced welders or those with certification. The education levels of welders currently employed in the region show that the opportunities for those with less education are limited. Most welders are high school graduates (76%) and 28% have some college or a college associate degree. Only 24% of current welders did not complete high school.

Welding jobs titles and skill levels are determined based on your ability to demonstrate specific proficiencies when tested. Certification of advanced skills is a commonly accepted way of documenting your ability to perform welds as specified by welder classification. Gateway Technical College, Milwaukee Area Technical College, Moraine Park Technical College, and Waukesha County Technical College offer welder training and certification programs for entry level to advance training, and some with a special emphasis. Most of the technical college programs are running at full capacity and some are planning for expansion.

Location of Technical College Campuses with Welding Programs



▼ *Welding Job Mobility*

In a two-semester college diploma program, you will learn to set up and operate welding equipment, read blueprints, and help maintain welding equipment for manufacturing and construction industries. Short term certificate programs provide an introduction to types of welds. In some cases the employer will conduct the necessary training on the job. Technical training in welding offers job mobility into a number of occupations.

Welding Job Mobility (from Gateway Technical College)

Concurrent Occupations for welding program students:

1. Chipper
2. Tacker
3. Welder's Helper
4. Production Welder

Occupations for Technical Diploma Graduates:

1. Arc Welder
2. Production Welder
3. Tig Welder
4. Mig Welder
5. Oxy-Acet Welder

Advanced Occupations for Technical Diploma graduates with extra training or experience:

1. Apprentice Welder
2. Certified Welder
3. Shop Welder
4. Combination Welder
5. Weld Supervisor
6. Set-Up Welder
7. Welding Inspector
8. Welding Technician

Occupation for those with higher level degrees (such as bachelor's degree):

1. Welding Engineer
2. Welding Instructor
3. Welding Technician

Source: Gateway Technical College curriculum at www.gtc.edu/docs/curriculumSheets/31-442-1C.pdf.

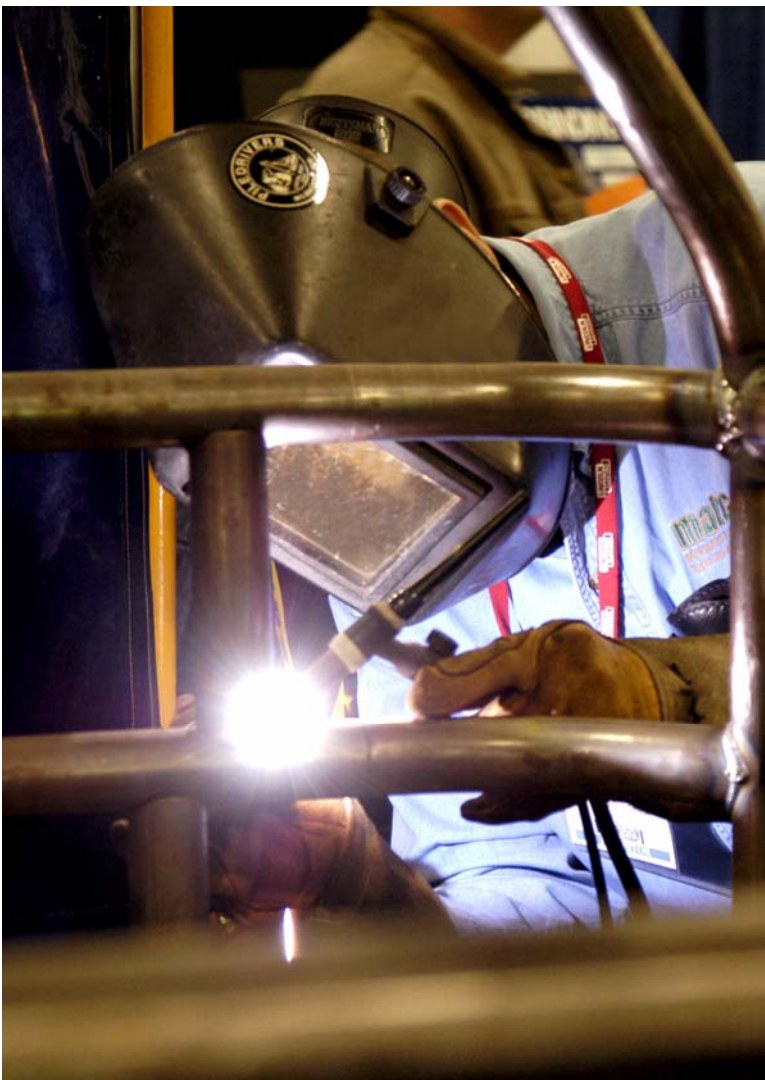


*Test candidate Roger Bratberg takes the performance component of the Certified Robotic Arc Welding (CRAW) exam at the MATC.
Photo: MATC/Sue Ruggles.*

Acquiring welding skills can open doors to other careers as well as increased wages. Listed below are jobs and pay levels for occupations which require some welding experience.

Other Careers Requiring Welding Skills *(from the U.S. Department of Labor)*

<u>Occupational Title</u>	<u>Average Annual Salary</u>	<u>Relevance Score on Importance of Welding</u>
Structural metal fabricators and fitters	\$35,011	33
Sheet metal workers	\$52,041	32
Plumbers, pipefitters, and steamfitters	\$61,016	24
Structural iron and steel workers	\$52,649	24
Industrial machinery mechanics	\$46,863	22



MATC welding instructor Peter Stojanovich demonstrates welding techniques on a race car chassis.

Photo: MATC/Sue Ruggles

Using the Internet to Learn About Careers in Welding

The Wisconsin technical colleges have information available at their campuses and on their websites about courses in welding, requirements for diploma and certificate programs, and resources about welding careers. (Sample websites are shown in the pages below.)

Gateway Technical College (www.gtc.edu)

Kenosha Campus

Contact: Mark Uttech uttechm@gtc.edu
Location: 3520 30th Avenue, Kenosha, WI 53144
Enrollment: 10 sessions are offered with a capacity of 16 per session; 4 sessions are held in both the a.m. and p.m.; 2 sessions are held on Friday night and Saturday.
Capacity: 160

Elkhorn Campus

Contact: Kenneth Karwowski karwowskik@gtc.edu
Location: 400 County Road H, Elkhorn, WI 53121
Enrollment: 56 in evening sessions; 20 in daytime sessions
Capacity: 76

Useful starting website: www.gtc.edu/pages/displayProgram.asp?pid=30-442-2

Milwaukee Area Technical College (www.matc.edu)

Contact: Mark Koehler KoehlerM@matc.edu
Location: Downtown Milwaukee Campus (700 West State Street, Milwaukee, WI 53233)
West Allis Campus (1200 South 71st Street, West Allis, WI 53214)
Oak Creek Campus (6665 South Howell Avenue, Oak Creek, WI 53154)
Capacity: 80 (20 per session, morning and afternoon at the Downtown Milwaukee Campus and West Allis Campus; 12 at Oak Creek Campus.
Useful starting website: www.matc.edu/documents/catalog/welding_technical_diploma.html

Moraine Park Technical College (www.wptc.edu)

Contact: Larry Clark lclark@morainepark.edu
Location: Beaver Dam Campus (700 Gould Street, Beaver Dam, WI 53916)
Some introductory apprentice courses are held at the Fond du Lac Campus (235 N. National Avenue, Fond du Lac, WI 54936)
Enrollment: Two sections are offered: 1 in the evening, 1 during the day.
Sessions start quarterly throughout the regular school year.
Capacity: 28 (14 in each section)
Useful starting website: www.morainepark.edu/pages/441.asp

Waukesha County Technical College (www.wctc.edu)

Contact: Michael Shiels, mshiels@wctc.edu
Location: Main Campus, 800 Main Street, Pewaukee, WI 53072
Capacity: 40
Useful starting website: www.wctc.edu/web/areas/trades/welding/welding.php



Manufacturing, Engineering, and Maintenance

Welding

A talented welder can always find well-paying work in a variety of industries. Gateway Technical College provides two technical diplomas that ensure you get the best of industry knowledge and can hit the workforce with the talent you need and the salary you want.

Gateway's Welding program provides flexible scheduling, multiple start dates, and is student-friendly. It includes extensive hands-on activity in lab provided by knowledgeable instructors with years of actual in-the-field experience.

[Visit the Welding web site.](#)

[Register for classes.](#)

Classes available this fall:

(Click the Course Number for an explanation. [For information regarding class days, times, and spaces available, click here.](#))

- [442-101](#) Welding Basics
- [442-102](#) Introduction to Welding
- [442-302](#) Metal Fabrication I
- [442-314](#) Welding/Fundamentals of
- [442-321](#) Welding/Gas Metal Arc Welding
- [442-322](#) Welding/Shielded Metal Arc Welding
- [442-323](#) Welding/Gas Tungsten Arc Welding
- [442-324](#) Weld Printreading and Fabrication Procedures
- [442-329](#) Welding/Advanced Oxyacetylene
- [442-330](#) Welding/Advanced Shielded Metal Arc Welding
- [442-332](#) Welding/Advanced Gas Metal Arc Welding
- [442-333](#) Welding/Advanced Gas Tungsten Arc Weld
- [442-334](#) Welding/Oxyacetylene
- [442-342](#) Welding/Pipe Oxyacetylene Fitting
- [442-343](#) Welding/Pipe Shielded Metal Arc Welding
- [442-344](#) Welding/Pipe Shielded Metal Arc Certification
- [442-345](#) Welding/Pipe Gas Tungsten Arc Welding
- [442-346](#) Welding/Pipe Gas Tungsten Arc Certification
- [442-347](#) Welding/Pipe Gas Metal Arc Welding
- [442-407](#) Welding
- [442-410](#) Welding for Sheet Metal
- [442-424](#) Art of Welding/Advanced

Program Courses

[Printer Friendly Page](#)

List of degrees, diplomas or certificates available in this program area:

WELDING/MAINTENANCE & FABRICATION – Technical Diploma
WELDING - Technical Diploma

Certificates Available:

OXY/FUEL WELDING
 ADV. OXY/FUEL WELDING
 PIPE/OXY/FUEL WELDING
 GMAW WELDING
 ADV. GMAW WELDING
 PIPE GMAW WELDING
 SMAW WELDING
 ADV. SMAW WELDING
 PIPE SMAW WELDING
 PIPE SMAW CERT.
 GTAW WELDING
 ADV. GTAW WELDING
 PIPE GTAW WELDING
 PIPE GTAW CERT.
 WELD PRINTREADING AND FABRICATION PROCEDURES
 WELDING BASICS
 WELDING FUNDAMENTALS

Note that there is a Robotics Option offered on the Elkhorn Campus within the Welding technical diploma.

Job/Salary & Outlook

[Printer Friendly Page](#)

A talented welder can always find well-paying work in a variety of industries. Gateway Technical College provides two technical diplomas that ensure you get the best of industry knowledge and can hit the workforce with the talent you need and the salary you want.

Gateway's Welding program provides flexible scheduling, multiple start dates, and is student-friendly. It includes extensive hands-on activity in lab provided by knowledgeable instructors with years of actual in-the-field experience.

<u>Job</u>	<u>Salary</u>
Welder/Cutter/Fabricator	\$10.16- \$48.00

<u>Job</u>	<u>Outlook</u>
Welder/Cutter/Fabricator	Excellent - Huge shortage of welders/cutters/fabricators Starting wages already increasing due to shortage. Many job opportunities. Articles in local papers spotlighting shortages both locally and nationally.

<u>Job</u>	<u>Description</u>
Welder/Cutter/Fabricator	Cut/fabricate/weld/ assemble various components from a variety of metals

MILWAUKEE AREA **Technical College** CONTACT US JOBS SITE MAP SEARCH

Home Blackboard Library INFOnline Calendar Class Schedule College Store TechHELP

Student

2007-2008
Welding
[Back to diplomas](#)

Welding
Technical Diploma — Downtown Milwaukee and West Allis Campuses

Program code: 31-442-1

This curriculum goes into effect starting with the summer 2008 semester.

This page was last updated in July 2007.

Overview — Welding is a two-semester technical diploma program designed to prepare you to perform production, maintenance and repair welding in the manufacturing and construction industries.

Career Outlook — There is an increasing demand for welders having current industry skills. Advances in welding and related processes create opportunities in manufacturing and construction.

Career Preparation and Expected Learning Outcomes — Program graduates will have skills for employment. Employers will expect you to:

- ◆ Maintain good attendance
- ◆ Practice industry safety standards
- ◆ Set up and operate all welding and related equipment
- ◆ Troubleshoot and maintain equipment
- ◆ Utilize math and blueprint-reading skills
- ◆ Communicate effectively
- ◆ Abide by daily work routine and regulations, and work cooperatively with co-workers
- ◆ Follow instructions and work with minimal supervision
- ◆ Have pride in workmanship
- ◆ Have a good work ethic

Preparation for Admission — The following are required for admission to the program:

MILWAUKEE AREA **Technical College** CONTACT US JOBS SITE MAP SEARCH

Home Blackboard Library INFOnline Calendar Class Schedule College Store TechHELP

Student

2007-2008
Flux Core Welding
[Back to certificates](#)

Flux Core Welding Certificate

MATC Oak Creek Campus
Center for Energy Conservation and Advanced Manufacturing (ECAM)

Learn specialized skills involved in fabricating steel parts and structures through this hands-on certificate program. Classes are located at the new Center for Energy Conservation and Advanced Manufacturing, delivering innovative education and training that supports emerging energy and manufacturing methodologies. Credits in this certificate can count toward an MATC degree or diploma.

Features:

- 448 hours of training and practice, 14 credits
- 12 weeks (40 hours/week)
- Capacity - 12 students on a first-come, first-served basis

MILWAUKEE AREA **Technical College** CONTACT US JOBS SITE MAP SEARCH

Home Blackboard Library INFOnline Calendar Class Schedule College Store TechHELP

MATC.NOW
Latest News

THE INSTRUCTORS • BEYOND MATC • STUDENT STORIES • HOME PAGE

Rapid Response
New Certificate Leads to Jobs in Heavy-Plate Welding

A new welding certificate offered by Milwaukee Area Technical College creates a launching pad to customized welder training and jobs at heavy manufacturers such as Bucyrus International, Inc. of South Milwaukee. MATC developed the program on a fast track as a result of discussions with CEOs who reported having trouble finding enough welders with the right skills for their specialized needs.



The intensive, 12-week, 350-hour training program leads to a certificate in [flux core welding](#). To qualify, students need to achieve Accuplacer test scores of 55 in reading, 60 in writing and 36 in math. Also, students must have taken Welding 326 and 327; or have two years' industry experience in gas metal arc welding; or be state certified in structural welding.

Classes start March 21. Tuition cost for the 11-credit sequence is \$968. For more information, please contact: [Larry Gross](#), welding instructor, (414) 456 5454; or [Tom Wichert](#), program counselor, (414) 456-5451.

The screenshot shows the 'All Programs' page for Welding. The navigation bar includes 'GETTING STARTED', 'BUSINESS & INDUSTRY', 'ALUMNI/FOUNDATION', and 'ONLINE LEARNING'. The main header is 'All Programs'. Below it, a breadcrumb trail reads 'Home » Academics » All Programs » Welding'. The page title is 'Welding', with technical details: 'Technical Diploma: 31-442-1' and 'Campus: Beaver Dam'. A descriptive paragraph states that the two-semester diploma helps students develop welding and fabrication skills. A list of links on the right includes Curriculum, Outcomes, Career Opportunities, Admission Process, and Take a Program Tour. A small image of a welder is visible at the bottom right.

The screenshot shows the 'Curriculum' page for Welding. The navigation bar is the same as the previous page. The main header is 'All Programs'. Below it, a breadcrumb trail reads 'Home » Academics » All Programs » Welding » Welding Curriculum'. The page title is 'Curriculum 2007-2008'. A table lists courses with their numbers, titles, and credits. The table is divided into 'Core Courses' and 'Technical Support Courses'. A total of 28 credits is shown at the bottom of the table. A note at the bottom states that a Welding Exit Assessment (997-153) is a graduation requirement for this program.

Course Number	Course Title	Credits
Core Courses		
421-331	Welding Print Reading	2
442-309	Introduction to Welding Processes	4
442-310	Shielded and Gas Metal Arc Welding (SMAW/GMAW)	4
442-315	Gas Tungsten Arc Welding	4
442-316	Advanced Welding Techniques	4
442-345	Fabrication for Welders	4
Technical Support Courses		
801-310	Occupational Communication	2
804-106	Introduction to College Mathematics	3
890-125	Student Success	1
		Total: 28

The screenshot shows the 'Electronic Resources' page. The navigation bar is the same. The main header is 'Electronic Resources'. A list of links includes E-Reserve, Directions for Accessing E-Reserves, Turnitin, Research Guides, Webographies, and Electronic Reference. A breadcrumb trail reads 'Home » Library » Electronic Resources » Research Guides » Welding Research Guide'. The page title is 'Welding Research Guide'. A paragraph explains that the guide helps users locate books, electronic books, audiovisual resources, journal articles, and Internet resources related to welding. A section titled 'Books, e-books and Audiovisual Resources:' instructs users to use the MPTC Online Catalog. Another section titled 'Suggested keyword searches for topics related to welding:' lists terms like 'Welding and manufacturing processes', 'Welding and safety measures', 'Welding types (Arc, Tig, Mig, Plasma, Ultrasonic, Laser, Oxyacetylene)', and 'Solder and soldering'.

The screenshot shows the 'Certifications and Licensure' page. The navigation bar is the same. The main header is 'Certifications and Licensure'. A breadcrumb trail reads 'Home » Academics » Certifications and Licensure » Welding Certification'. The page title is 'Welding Certification'. A paragraph explains that Certified Welding Inspectors at the Beaver Dam facility have the credentials to certify welders. It offers program students one certification test as part of an advanced Welding course. A link is provided for the 'Structural Welding Certification Exam Schedule'. A note at the bottom says 'For a more detailed overview or a price quote, please contact Marcia Arndt.' At the bottom of the page, there is a grid of navigation links including About Moraine Park, Academics, myMPTC, Bookstore, Admissions, Financial Aid, Library, Registration, Home, Getting Started, Online Learning, Business & Industry, and Alumni / Foundation. A footer contains contact information and the slogan 'Let it work for you.'



WCTC
waukesha county technical college

- Areas of Study
- Admissions
- Registration & Course Information
- Financial Aid & Scholarships
- Student Services
- Career Services & Academic Skill Building
- Business Services
- General WCTC Information
- My WCTC
- WCTC Home



Skilled Trades
Center of Excellence

[About the Program](#)
[Required Courses](#)
[Employment Outlook](#)
[Printable Fact Sheet](#)
[Get Started at WCTC](#)

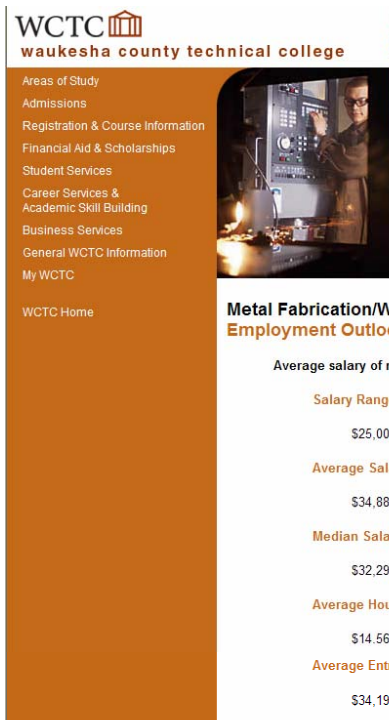


Metal Fabrication/Welding
About the Program

30-credit technical diploma

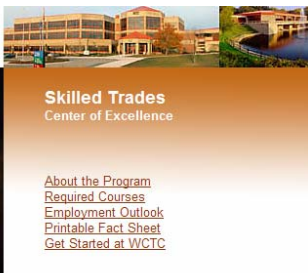
Develop skills in interpreting blueprints; creating the exact shape of a part for cutting, fabrication and welding; and producing quality parts through the use of different techniques and materials. Learn to program and operate computercontrolled press brakes and shears, plasma arc cutting machines and microprocessor-based power sources. Welding techniques and joining methods are emphasized throughout the program.

Graduates may work in positions such as fabricator, laser operator, welder or welder/press operator.




WCTC
waukesha county technical college

- Areas of Study
- Admissions
- Registration & Course Information
- Financial Aid & Scholarships
- Student Services
- Career Services & Academic Skill Building
- Business Services
- General WCTC Information
- My WCTC
- WCTC Home



Skilled Trades
Center of Excellence

[About the Program](#)
[Required Courses](#)
[Employment Outlook](#)
[Printable Fact Sheet](#)
[Get Started at WCTC](#)



Metal Fabrication/Welding
Employment Outlook

Average salary of recent graduates*:

Salary Range	\$25,000-\$50,000
Average Salary	\$34,882
Median Salary	\$32,293
Average Hourly Wage	\$14.56
Average Entry-Level Salary	\$34,190



WCTC
waukesha county technical college

- Areas of Study
- Admissions
- Registration & Course Information
- Financial Aid & Scholarships
- Student Services
- Career Services & Academic Skill Building
- Business Services
- General WCTC Information
- My WCTC
- WCTC Home



Skilled Trades
Center of Excellence

[About the Program](#)
[Required Courses](#)
[Employment Outlook](#)
[Printable Fact Sheet](#)
[Get Started at WCTC](#)



Metal Fabrication/Welding
Required Courses

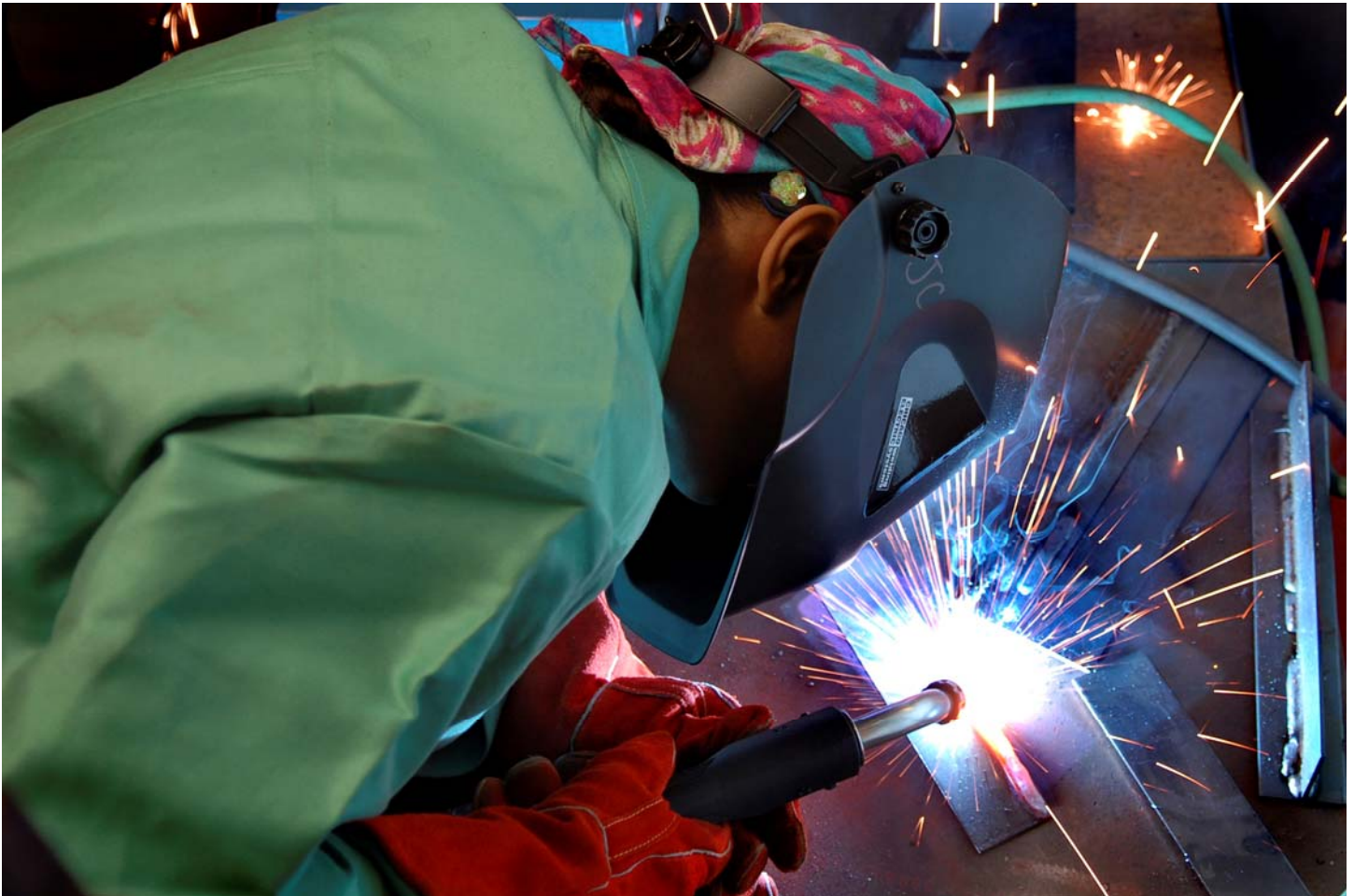
First Semester

Course Num	Course Name	Credits
457-310	Blueprint Reading-Fab	2
457-320	Thermal Cutting Processes	2
457-350	Metal Fabrication Welding I	4
457-360	Metal Fabrication I	5 *
804-304	Industrial Math I	2 +
809-345	Basic Workplace Psychology	1
Total Semester Credits		16

Second Semester

Course Num	Course Name	Credits
422-303	Metals Tech-Fabrication	1
457-321	Thermal Cutting Processes II	2 *
457-355	Metal Fabrication Welding II	4 *
457-365	Metal Fabrication II	5 *
801-311	Communication in the Workplace	2 +
Total Semester Credits		14

+ (Proficiency Exam Available)
* (Prerequisites or substitutes may apply to this class. Click on course title for specific information.)



Jessica Cooper is trained in a welding program partnership involving Milwaukee Area Technical College, Genesis High School, and Tramont Corporation.

Photo: MATC/Sue Ruggles

This booklet was prepared by the University of Wisconsin-Milwaukee Employment and Training Institute for the WOW Workforce Investment Board, Inc. and the Regional Workforce Alliance under a WIA Incentive grant to RWA from the Wisconsin Department of Workforce Development. We appreciate the assistance provided by the Gateway Technical College, Milwaukee Area Technical College, Moraine Park Technical College, and Waukesha County Technical College, and the 169 employers participating in the December 2007 targeted survey of welder job openings and assessment of need.