



WISCONSIN  
INDIANHEAD  
TECHNICAL  
COLLEGE

# **WELDING**

**Wisconsin Indianhead Technical College  
31-442-1 Technical Diploma**

***2015***  
**Program Review**  
**and**  
**Improvement Plan**

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# Welding

31-442-1 Technical Diploma

Financial Aid Eligible

## Program Overview

The Welding program will provide students with the skills and knowledge identified by the American Welding Society Skill Standards. They will be taught welding skills and theory, fabrication, layout, print reading, welding symbols, math, and welding codes.

Campus:



WISCONSIN  
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Ashland  
New Richmond  
Rice Lake  
Superior

## Career Pathway Options

A career pathway is a series of connected education and training strategies and support services that enable individuals to secure stackable industry relevant credentials and obtain employment within an occupational area and advance to higher levels of future education and employment in that area. The Welding one-year technical diploma includes a series of five embedded short-term technical diplomas as documented below:

- 30-442-2 Welding/Maintenance and Fabrication
- 30-442-4 Shielded Metal Arc Welding (SMAW)
- 30-442-5 Gas Metal Arc Welding (GMAW)
- 30-442-6 Flux Cored Arc Welding (FCAW)
- 30-442-7 Gas Tungsten Arc Welding (GTAW)

## Admission Requirements

Students in this program must:

- Complete application form and submit with fee (fee waiver may apply if previously submitted)
- Complete Accuplacer entrance assessment to determine placement (waiver may apply with acceptable alternative test scores and/or postsecondary degree completion)
- Complete admissions interview with a WITC counselor (above requirements should be completed prior to interview)

## Student Profile

Welding students should:

- Enjoy working with their hands
- Be able to use independent judgment
- Be able to visualize objects from drawings
- Be able to organize work rapidly and perform repetitive tasks
- Be able to follow procedures carefully
- Be able to stand for long periods
- Be able to work in an industrial setting
- Be able to work well under pressure
- Be able to work with or without direct supervision

## Preparation for Admission

Students should strive to reach a comfort level in the following courses or skills:

- Communications
- Drafting and Design
- Basic Math
- General Metals
- Machine Shop
- Welding
- Principles of Technology

## Program Outcomes

Employers will expect the Welding graduate to be able to:

- Demonstrate industry-recognized safety practices
- Interpret welding drawings
- Produce shielded metal arc welds (SMAW)
- Produce gas metal arc welds (GMAW)
- Produce flux core welds
- Produce gas tungsten arc welds (GTAW)
- Perform thermal cutting

Collegewide outcomes and indicators will also be addressed to develop personal awareness, career effectiveness, and professionalism. See page 5 of the college catalog for a list of collegewide outcomes and indicators.

## Career Outlook

Almost 60 percent of the gross national product involves welding. The demand for welders continues to be very strong. Positions available after graduation include:

- Production Welder
- Construction Welder
- Maintenance Welder
- Welder/Fitter
- Welder Helper
- Welding Machine Operator
- Flame Cutter/Machine Operator

## Curriculum

Number	Course Title	Credits
<b>Occupational Specific Courses</b>		
31442321	Print Reading - Welding Trades	2
31442325	Welding Fabrication/Production (WBL) ▲	3
31442370	Gas Metal Arc Welding 1	3
31442371	Gas Metal Arc Welding 2 ▲	2
31442372	Gas Metal Arc Welding 3 ▲	1
31442373	Shielded Metal Arc Welding 1	3
31442374	Shielded Metal Arc Welding 2 ▲	2
31442375	Shielded Metal Arc Welding 3 ▲	2
31442376	Oxyfuel and Arc Cutting Processes	2
31442377	Flux Cored Arc Welding 1	2
31442378	Flux Cored Arc Welding 2 ▲	2
31442379	Gas Tungsten Arc Welding 1	2
31442380	Gas Tungsten Arc Welding 2 ▲	2
		<b>28</b>

## Occupational Supportive/General Studies Courses\*

32801361	Applied Communications 1	2
32804373	Math 373	2
32809371	Applied Human Relations	6

PROGRAM REQUIREMENTS **34**

- ▲ Requires a prerequisite and/or corequisite that must be completed with a grade point of 2.0 or better.
- \* See pages 41-43 for course descriptions.

## Course Descriptions

(See pages 41-43 for General Studies course descriptions)

31442321

**Print Reading - Welding Trades - Credits: 2**  
Orthographic projection, sketching, dimensioning, section and auxiliary views, structural shape identification, weld symbols, welding symbol nomenclature, welded joint geometry, metric conversion, and interpretation of fabrications from prints.

31442325

**Welding Fabrication/Production (WBL) - Credits: 3**  
This course introduces the student to the basics of metal fabrication including the use of layout tools and principles, and blueprint interpretation. Also, weldment fit-up, tacking, distortion, and flame straightening are covered. The use of shears, drilling, taping, painting, and CNC cutting equipment for fabrication purposes is also covered. **PREREQUISITES:** 31442321 Print Reading - Welding Trades, 31442370 Gas Metal Arc Welding 1, 31442373 Shielded Metal Arc Welding 1, 31442374 Shielded Metal Arc Welding 2, 31442376 Oxyfuel and Arc Cutting Processes, and **COREQUISITE:** 31442375 Shielded Metal Arc Welding 3.

31442370

**Gas Metal Arc Welding 1 - Credits: 3**  
This course introduces the student to the basics of GMAW welding operations. It includes the study of the type of metals and equipment utilized in welding. The instruction emphasizes accepted applications in butting and joining metals utilizing standard industry techniques.

31442371

**Gas Metal Arc Welding 2 - Credits: 2**  
This course introduces the student to the next level of GMAW welding operations. It includes the study of the type of metals and equipment utilized in welding. The instruction emphasizes accepted applications in butting and joining metals utilizing standard industry techniques. **COREQUISITE:** 31442370 Gas Metal Arc Welding 1.

31442372

**Gas Metal Arc Welding 3 - Credits: 1**  
This course introduces the student to an advanced level of GMAW welding operations. It includes the study of the type of metals and equipment utilized in welding. The instruction emphasizes accepted applications in butting and joining metals utilizing standard industry techniques. **COREQUISITE:** 31442371 Gas Metal Arc Welding 2.

31442373

**Shielded Metal Arc Welding 1 - Credits: 3**  
This course introduces the student to the basics of SMAW welding. It includes the study of the type of metals and equipment utilized when welding. The instruction emphasizes accepted applications in butting and joining metals utilizing standard welding techniques.

31442374

**Shielded Metal Arc Welding 2 - Credits: 2**  
This course introduces the student to the next level of SMAW welding. It includes the study of the type of metals and equipment utilized when welding. The instruction emphasizes accepted applications in butting and joining metals utilizing standard welding techniques. **COREQUISITE:** 31442373 Shielded Metal Arc Welding 1.

31442375

**Shielded Metal Arc Welding 3 - Credits: 2**  
This course introduces the student to an advanced level of SMAW welding. It includes the study of the type of metals and equipment utilized in SMAW welding. The instruction emphasizes accepted applications in butting and joining metals utilizing standard welding techniques. **COREQUISITE:** 31442374 Shielded Metal Arc Welding 2.

31442376

**Oxyfuel and Arc Cutting Processes - Credits: 2**  
This course introduces the student to the basics of cutting and gouging operations. It includes the study of the common processes, techniques, and equipment utilized when cutting and gouging. The instruction emphasizes accepted applications in the use of carbon steel, stainless steel, and aluminum.

31442377

**Flux Cored Arc Welding 1 - Credits: 2**  
This course introduces the student to the basics of FCAW welding operations. It includes the study of the type of metals and equipment utilized in welding. The instruction emphasizes accepted applications in butting and joining metals utilizing standard industry techniques.

31442378

**Flux Cored Arc Welding 2 - Credits: 2**  
This course introduces the student to the next level of FCAW welding operations. It includes the study of the type of metals and equipment utilized in welding. The instruction emphasizes accepted applications in butting and joining metals utilizing standard industry techniques. **COREQUISITE:** 31442377 Flux Cored Arc Welding 1.

31442379

**Gas Tungsten Arc Welding 1 - Credits: 2**  
This course introduces the student to the basics of GTAW welding operations. It includes the study of the type of metals and equipment utilized in welding. The instruction emphasizes accepted applications in butting and joining metals utilizing standard industry techniques.

31442380

**Gas Tungsten Arc Welding 2 - Credits: 2**  
This course introduces the student to the next level of GTAW welding operations. It includes the study of the type of metals and equipment utilized in welding. The instruction emphasizes accepted applications in butting and joining metals utilizing the standard industry techniques. **COREQUISITE:** 31442379 Gas Tungsten Arc Welding 1.

Gainful employment information is available at this link: <http://www.witc.edu/pgmpages/welding/career.htm>. This information is provided as a federal requirement in an effort to help students make informed decisions related to the costs and potential employment in a chosen field.

### Graduate Employment Information

(WITC Graduate Survey Responses 2012-2013; for most recent data, go to [witc.edu](http://www.witc.edu))

Number of graduates	53	Number employed	40	% employed in WITC district	62%
Number of responses	46	Percent employed	91%	Range of yearly salary	\$27,038-\$68,635
Number available for employment	44	Employed in related field	33	Average yearly salary	\$40,329

*career vision*

800.243.9482

witc.edu

2015-2016

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## **TEAM MEMBERSHIP**

## ACADEMIC PROGRAM REVIEW PROFILE

Program Number & Name		
<b>Welding 31-442-1</b>		
Program Academic Dean	Title/Location	Phone and e-mail
Karen Hoglund	Academic Dean Ashland	Ext. 3138 <a href="mailto:Karen.hoglund@witc.edu">Karen.hoglund@witc.edu</a>
Team Lead(s)	Title/Location	Phone and e-mail
John Palmer	Welding Faculty Member Superior	Ext. 6326 John.palmer@witc.edu
Team Members	Title/Location	Phone and e-mail
Dan Wilkinson	Welding Faculty Member New Richmond	Ext. 4355 <a href="mailto:Dan.wilkinson@witc.edu">Dan.wilkinson@witc.edu</a>
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Kristin Nelson	Counselor – Student Services New Richmond	Ext. 4254 <a href="mailto:Kristin.nelson@witc.edu">Kristin.nelson@witc.edu</a>
Dan Bushman	HR Director Northern Metal Fab	<a href="mailto:Dan.bushman@nmfinc.com">Dan.bushman@nmfinc.com</a>
Tanner Berg	Student – Welding New Richmond	<a href="mailto:bergtj@my.witc.edu">bergtj@my.witc.edu</a>
Noah Driscoll	Student – Welding New Richmond	<a href="mailto:Driscollna@my.witc.edu">Driscollna@my.witc.edu</a>

Program Information:		
Capacity (new students admitted/year):		121
Number of Faculty:	FT: 7	PT: 1
Statewide Curriculum:	YES:	No: X
Number of Technical Studies Courses in each of the following delivery modes: (there may be duplication for courses offered in multiple modes)		
	<i>Classroom:</i>	16
	<i>Online:</i>	0
	<i>ITV/IP:</i>	0
	<i>In Person/Web Blended:</i>	0

<b>Program Accredited by:</b>	NA
Date of Last Accreditation	
Date of Next Accreditation	
Is a visit required? If so, when is the next visit?	
<b>Program Licensed by:</b>	NA
Date of Last Licensing:	
Date of Next Licensing:	
Is a visit required? If so, when is the next visit?	
<b>Please list other program memberships:</b>	NA

**Note:** *The accreditation, licensing, and membership information listed above will be listed in the annual WITC Fact Book.*

# **SELF-STUDY REPORT**



## SELF-STUDY SUMMARY REPORT

Program Information	
Program Name: <b>Welding</b>	Team Chair: <b>John Palmer</b>
Academic Dean: <b>Karen Hoglund</b>	Divisional Dean: <b>Randy Deli</b>
Process Used to Complete the Self-Study	
Meeting format (in-person, IP, conference calls etc.)	<b>In person – New Richmond campus</b>
Number of meetings	<b>1</b>
How was the self-study handled? (as a group, assigned to individuals to report back to group, etc.)	<b>The self-study was handled as a group</b>
Additional comments:	
Summary of Findings	
As you completed this self study section of the program review, what areas "stand out" in your program? Please explain.	<b>Every student has many job options to choose from for employment. More job openings than graduates, contributing to the 100% placement rate.</b>
What has surprised you? Please explain.	<b>Assessments of measuring have been identified as not meeting graduate or entry level employment standards.  Students enter the workforce without having the basic understanding of units of measurement.</b>
List two or three of the items identified through your self-study that you will focus on to make improvements to your program.	<b>Implementation of Functional Abilities into the admissions process.  Program modification to include an applied blue print reading class with an emphasis on measurement.</b>
When/where in your program will you implement these improvements?	<b>Functional Abilities – 2015  Program modification – 2015/16</b>
What methods (direct or indirect) will you use to assess the success of this implementation?	<b>Students will be able to function at the level needed in the lab to perform all tasks required of them.  Program modification to include an applied blue print reading class with emphasis on measurement.</b>
What new outcomes or benchmarks do you hope to achieve through these recommended changes?	<b>Students that will be able to function at the level required in the lab.</b>

## SELF-STUDY CATEGORY RESULTS

Program and Category			
<b>Program: Welding</b> <b>Category: Review of Most Recent Program Review</b>			
PLUSES (Strengths)		DELTAS (Opportunities)	
<b>Had a good team with the right players</b> <b>Manageable team size</b> <b>Program statistics continue to be strong</b> <b>Strong advisory committee</b> <b>Overall QRP statistics good</b> <b>Accomplished most of our action items</b> <b>TSA rubrics are in place</b> <b>Graduate placement is high</b> <b>Job market is improving</b>		<b>Rice Lake campus needs more space</b>	
Select one PLUS item and explain the root cause:	<b>The experience from the first time around taught us the best way to do this and the best people participating (Had a good team with the right players). Team leader was instrumental to getting the right players at the table.</b>		
Select one DELTA item and explain the root cause:	<b>Rice Lake campus is in need of more space for their lab. This is causing cramped working quarters which in turn will potentially create more safety concerns.</b>		
What items in this category MUST be addressed on our improvement plan?	<b>There is nothing we must do other than to address the space issue in Rice Lake and have input from the welding staff during the 2016 building and remodeling phase for that area.</b>		
What items in this category MIGHT be addressed on the improvement plan?	<b>Plans for a remodel of the Rice Lake campus to include a building modification to increase the square footage of the lab is being done. This will continue and then plans to expand will begin Summer 2016 with completion of expansion/remodel in Fall 2016.</b>		
What items in this category may be considered a BEST PRACTICE OR INNOVATION?			
Team Rating			
Please indicate by an (X) the team rating of your program on this category.			
<i>All areas need improvement</i>	<i>Some areas meet expectations, but most areas need improvement</i>	<i>All areas meet expectations —few areas need improvement</i>	<i><u>Exemplary</u>—all areas exceed expectations—use as a model for other programs</i>
		X	
Additional Comments: (optional)			

## SELF-STUDY CATEGORY RESULTS

Program and Category			
<b>Program: Welding</b> <b>Category: WITC Program Statistics</b>			
PLUSES (Strengths)		DELTAS (Opportunities)	
<b>Graduate satisfaction results at 100%.</b> <b>Enrollment capacity has stabilized per campus to a more realistic level with flexibility.</b> <b>Program capacity has doubled.</b> <b>Very effective grant writer on staff.</b>		<b>Grant funding has a limited term, to maintain current levels we need to look at other revenue streams.</b>  <b>To maintain statistics at a constant level, we need to partner with industry to have funding issues understood.</b>	
Select one PLUS item and explain the root cause:	<b>Program capacity has doubled.</b>  <b>This is due to evening sections being added from grant funding.</b>		
Select one DELTA item and explain the root cause:	<b>Grant funding has a limited term, to maintain current levels we need to look at other revenue streams.</b>  <b>Employers are unaware of how the funding is obtained. Opportunity is to keep industry partners apprised where there influence may be needed at the legislative level.</b>		
What items in this category <b>MUST</b> be addressed on our improvement plan?	<b>Continuation of the grant funded sections of welding after the grants are finished.</b>  <b>Initiate an active search of 3 financial partners for expansion or funding.</b>		
What items in this category <b>MIGHT</b> be addressed on the improvement plan?			
What items in this category may be considered a <b>BEST PRACTICE OR INNOVATION?</b>	<b>Graduate satisfaction results at 100%. We have not only meet the last review of 90% but exceeded it by 10%.</b>		
Team Rating			
Please indicate by an (X) the team rating of your program on this category.			
<i>All areas need improvement</i>	<i>Some areas meet expectations, but most areas need improvement</i>	<i>All areas meet expectations —few areas need improvement</i>	<i><u>Exemplary</u>—all areas exceed expectations—use as a model for other programs</i>
		X	
Additional Comments: (optional)			

## SELF-STUDY CATEGORY RESULTS

Program and Category			
<b>Program: Welding</b> <b>Category: Curriculum</b>			
PLUSES (Strengths)		DELTAS (Opportunities)	
<b>Program outcomes are clarified, improved and consistent college wide and throughout the state.</b> <b>Since modifying the curriculum thru the WIDS program, the syllabus is consistent college wide.</b> <b>Offering embedded short term technical diploma.</b>		<b>Need to strengthen the measurement portion of the math/blue print portion of the program.</b> <b>Use BlackBoard for course syllabi and grade book.</b> <b>Offering embedded short term technical diploma.</b> <b>Safety components are not transparent.</b>	
Select one PLUS item and explain the root cause:	<b>Offering embedded short term technical diploma.</b> <b>State funded grants allowed the program to have 4 embedded short-term technical diplomas in addition to the 1-year technical diploma.</b>		
Select one DELTA item and explain the root cause:	<b>Offering embedded short term technical diploma.</b> <b>This potentially keeps a full time student from taking the program due to program capacities.</b>		
What items in this category <b>MUST</b> be addressed on our improvement plan?	<b>Need to strengthen the measurement portion of the math/blue print portion of the program.</b> <b>Complete a program modification to include an applied blue print reading class with an emphasis on measurement.</b>		
What items in this category <b>MIGHT</b> be addressed on the improvement plan?	<b>Safety components are not transparent.</b> <b>Consider making an admissions modification to include a safety component course (OSHA 10 or 30).</b>		
What items in this category may be considered a <b>BEST PRACTICE OR INNOVATION?</b>	<b>Course curriculum is consistent college wide and with the WTCS.</b>		
Team Rating			
Please indicate by an (X) the team rating of your program on this category.			
<i>All areas need improvement</i>	<i>Some areas meet expectations, but most areas need improvement</i>	<i>All areas meet expectations —few areas need improvement</i>	<i>Exemplary—all areas exceed expectations—use as a model for other programs</i>
		X	
Additional Comments: (optional)			

## SELF-STUDY CATEGORY RESULTS

Program and Category	
<b>Program: Welding</b> <b>Category: Assessment of Student Learning</b>	
PLUSES (Strengths)	DELTAS (Opportunities)
<p><b>TSA is in place and implemented.</b></p> <p><b>AWS guides are used to visually test welds.</b></p> <p><b>Written and verbal assessments are used to supplement demonstrated welds.</b></p> <p><b>Student oral communications and assessed for setting appropriateness.</b></p> <p><b>Team oral reports are given – watched for vocabulary, clarity, body language, and listening.</b></p> <p><b>Written assignments are reviewed for neatness, spelling, and sentence structure.</b></p> <p><b>Reading assignments are given for information gathering purposes.</b></p>	<p><b>Collegewide outcomes are not always assessed.</b></p> <p><b>Assessments of measuring have been identified as not meeting graduate or entry level employment standards.</b></p>
<p>Select one PLUS item and explain the root cause:</p>	<p><b>TSA is in place and implemented.</b></p> <p><b>TSA implementation ensures that all Welding programs within the state are teaching the same outcomes.</b></p>
<p>Select one DELTA item and explain the root cause:</p>	<p><b>Collegewide outcomes are not always assessed.</b></p> <p><b>Rubrics and processes have not been developed for all outcomes.</b></p>
<p>What items in this category <b>MUST</b> be addressed on our improvement plan?</p>	<p><b>Assessments of measuring have been identified as not meeting graduate or entry level employment standards.</b></p> <p><b>Students enter the workforce without having the basic understanding of units of measurement. Program modification to include an applied blue print reading class with an emphasis on measurement.</b></p>
<p>What items in this category <b>MIGHT</b> be addressed on the improvement plan?</p>	<p><b>Consider a collaborative assessment site on the program page.</b></p> <p><b>Instructors bring an example (lesson plan) of how they were applying Collegewide Outcomes in their program.</b></p>
<p>What items in this category may be considered a <b>BEST PRACTICE OR INNOVATION?</b></p>	

<b>Team Rating</b>			
Please indicate by an (X) the team rating of your program on this category.			
<i>All areas need improvement</i>	<i>Some areas meet expectations, but most areas need improvement</i>	<i>All areas meet expectations —few areas need improvement</i>	<i><u>Exemplary</u>—all areas exceed expectations—use as a model for other programs</i>
		X	
Additional Comments: (optional)			

## SELF-STUDY CATEGORY RESULTS

Program and Category			
<b>Program: Welding</b> <b>Category: Advisory Committees</b>			
PLUSES (Strengths)		DELTAS (Opportunities)	
<b>Membership is revised yearly.</b> <b>Good participation at meetings.</b> <b>Student participation on the advisory committee.</b> <b>Student representatives are selected by classmates.</b> <b>Student services is represented on the advisory committee.</b> <b>A production welder was represented on the advisory committee.</b> <b>Follow up letter in the spring, thanking member and a copy to the employer for participation and approving major equipment purchases. Updates on equipment purchases and involvement in upcoming plans for next year.</b>		<b>Student participation on the advisory committee.</b>	
Select one PLUS item and explain the root cause:	<b>Student services is represented on the advisory committee. This is done to produce a more well-rounded input on decision.</b>		
Select one DELTA item and explain the root cause:	<b>Potentially the student participation on the advisory committee could be deterrents to employers voicing their concerns.</b>		
What items in this category MUST be addressed on our improvement plan?			
What items in this category MIGHT be addressed on the improvement plan?	<b>Consider having one advisory committee meeting rather than the two meetings currently held.</b>		
What items in this category may be considered a BEST PRACTICE OR INNOVATION?	<b>Student representatives are selected by classmates.</b>		
Team Rating			
Please indicate by an (X) the team rating of your program on this category.			
<i>All areas need improvement</i>	<i>Some areas meet expectations, but most areas need improvement</i>	<i>All areas meet expectations —few areas need improvement</i>	<i>Exemplary—all areas exceed expectations—use as a model for other programs</i>
		X	

## SELF-STUDY CATEGORY RESULTS

Program and Category			
<b>Program: Welding</b> <b>Category: Equipment and Facilities</b>			
PLUSES (Strengths)		DELTAS (Opportunities)	
<b>State of the art welding equipment.</b>  <b>New Richmond has a beautiful new facility since the last review.</b>  <b>Equipment is regularly updated.</b>		<b>Rice Lake campus needs more lab space for safety purposes.</b>  <b>Need more lab space, not all labs a equipped equally college wide.</b>  <b>Improve Information on the risk/liability waiver forms.</b>  <b>No equipment replacement plan in place.</b>  <b>Not all hazards are identified on equipment.</b>	
Select one PLUS item and explain the root cause:	<b>State of the art welding equipment. This is partly due to grant funding.</b>		
Select one DELTA item and explain the root cause:	<b>Improve Information on the risk/liability waiver forms. The information on the forms is outdated and needs to be more relevant.</b>		
What items in this category MUST be addressed on our improvement plan?	<b>Rice Lake campus needs more lab space for safety purposes.</b>  <b>Post hazardous warnings for equipment use appropriately. ie: pace maker risk, seizure</b>		
What items in this category MIGHT be addressed on the improvement plan?	<b>Develop an equipment replacement plan.</b>		
What items in this category may be considered a BEST PRACTICE OR INNOVATION?	<b>New Richmond facility set the standard for new facility standards.</b>		
Team Rating			
Please indicate by an (X) the team rating of your program on this category.			
<i>All areas need improvement</i>	<i>Some areas meet expectations, but most areas need improvement</i>	<i>All areas meet expectations —few areas need improvement</i>	<i>Exemplary—all areas exceed expectations—use as a model for other programs</i>
		X	
Additional Comments: (optional)			



## SELF-STUDY CATEGORY RESULTS

Program and Category	
<b>Program: Welding</b> <b>Category: Faculty Professional Development</b>	
PLUSES (Strengths)	DELTAS (Opportunities)
<b>ILP's are completed annually.</b>  <b>Reviews are discussed with the dean.</b>  <b>Most instructors are AWS certified welding inspectors.</b>	<b>Not licensed by an outside entity – Accredited test facility</b>  <b>Need more robotic training for instructors.</b>  <b>Budget is not adequate for training needs.</b>  <b>Some instructors are not AWS certified welding inspectors.</b>  <b>Number of new instructor's that need to be teacher certified.</b>
Select one PLUS item and explain the root cause:	<b>Most instructors are AWS certified welding inspectors. This allows WITC to be more credible in to the industry and communities.</b>
Select one DELTA item and explain the root cause:	<b>Budget is not adequate for training needs.</b>  <b>Ongoing training is expensive in the welding industry and the amount allotted to faculty for training is not sufficient.</b>
What items in this category <b>MUST</b> be addressed on our improvement plan?	<b>Number of new instructor's that need to be teacher certified. UW-Stout offers all 7 classes in the summer. (Summer immersion program)</b>  <b>Robotic training for instructor's. – Training at Lincoln – In Cleveland – Training for 2 included in the purchase of a new robotic cell.</b>
What items in this category <b>MIGHT</b> be addressed on the improvement plan?	<b>Instructors working toward becoming AWS certified welding inspectors.</b>
What items in this category may be considered a <b>BEST PRACTICE OR INNOVATION?</b>	<b>Most instructors are AWS certified welding inspectors.</b>

### Team Rating

Please indicate by an (X) the team rating of your program on this category.

<i>All areas need improvement</i>	<i>Some areas meet expectations, but most areas need improvement</i>	<i>All areas meet expectations—few areas need improvement</i>	<i><u>Exemplary</u>—all areas exceed expectations—use as a model for other programs</i>
	X		
Additional Comments: (optional)			

## SELF-STUDY CATEGORY RESULTS

Program and Category	
<b>Program: Welding</b> <b>Category: Collaboration Across the College</b>	
PLUSES (Strengths)	DELTAS (Opportunities)
<p><b>Student services staff visit and become acquainted with the program.</b></p> <p><b>There is collaboration between the core program and general education instructors through informal meetings.</b></p> <p><b>Good communication between welding instructor's and counselors.</b></p> <p><b>Core program instructors reinforce the importance of general education classes with the students.</b></p> <p><b>Communication is emphasized in the core program classroom setting.</b></p> <p><b>Students in need are referred to counselors.</b></p> <p><b>Student affairs are invited to visit the classroom.</b></p> <p><b>Mock job interviews are conducted.</b></p>	<p><b>Implement a functional abilities form.</b></p> <p><b>Career specialists and admissions advisors need to become better acquainted with the welding program.</b></p> <p><b>Monthly/Quarterly department meetings.</b></p> <p><b>Better access to mid-term grades and acuplacer scores.</b></p>
Select one PLUS item and explain the root cause:	<b>Good communication between welding instructor's and counselors because of the group commitment working towards student's success.</b>
Select one DELTA item and explain the root cause:	<b>Implement a functional abilities form to protect students and college, to ensure student success.</b>
What items in this category MUST be addressed on our improvement plan?	<b>Implement a functional abilities form.</b>
What items in this category MIGHT be addressed on the improvement plan?	
What items in this category may be considered a BEST PRACTICE OR INNOVATION?	<p><b>Developed a cross collaboration between general studies and welding instructor's.</b></p> <p><b>Welding instructor attended a general studies course and general studies instructor attended a welding course.</b></p>

<b>Team Rating</b>			
Please indicate by an (X) the team rating of your program on this category.			
<i>All areas need improvement</i>	<i>Some areas meet expectations, but most areas need improvement</i>	<i>All areas meet expectations —few areas need improvement</i>	<i><u>Exemplary</u>—all areas exceed expectations—use as a model for other programs</i>
		X	

## **WITC QRP & DATA REVIEW**

## QRP SCORECARD

### 31-442-1 - Welding

WTCS State Indicator	2014				
	Total In Cohort	Total Achieved	Actual	WITC Threshold	WITC Target
C200 Course Completion	112	96	85.7%	52.8%	100%
C400 Special Populations Course Completion	92	77	83.7%	38.5%	100%
C600 Minority Course Completion	7	7	100%	NA	100%
F200 Second Year Retention	74	54	72.9%	27.9%	96.4%
F251 Fall to Spring Retention	98	89	90.8%	34.2%	100%
F651 One Year Graduation	105	69	65.7%	NA	100%
F851 Second Year Graduation	74	52	70.2%	29.4%	93.9%
I300 Job Placement - All Employment	44	40	90.9%	62.9%	100%
I600 Job Placement - Related Employment	44	33	75%	13.0%	100%
J500 Non-Traditional Gender	112	3	2.68%	NA	43.8%
J650 NTO Graduation	76	2	2.63%	NA	38.9%

WTCS State Indicator	2013			2012		
	Total in Cohort	Total Achieved	Actual	Total in Cohort	Total Achieved	Actual
C200 Course Completion	80	63	78.7%	53	46	86.7%
C400 Special Populations Course Completion	69	53	76.8%	38	31	81.5%
C600 Minority Course Completion	6	6	100%	1	1	100%
F200 Second Year Retention	45	39	86.6%	56	52	92.8%
F251 Fall to Spring Retention	70	63	90%	43	43	100%
F651 One Year Graduation	74	45	60.8%	45	30	66.6%
F851 Second Year Graduation	45	38	84.4%	0	0	0%
I300 Job Placement - All Employment	29	25	86.2%	48	44	91.6%
I600 Job Placement - Related Employment	29	23	79.3%	48	38	79.1%
J500 Non-Traditional Gender	80	5	6.25%	53	4	7.55%
J650 NTO Graduation	53	3	5.66%	37	3	8.11%

# Perkins Program Data

31-442-1 Welding																						
	1P1			1P2			2P1			3P1			2P1 + 3P1	4P1			5P1			5P2		
	# of PS	# of S/N	82.22%	# of PS	# of S/N	83.71%	# of PS	# of S/N	55.00%	# of PS	# of S/N	11.28%	66.28%	# of PS	# of S/N	90.41%	# of PS	# of S/N	8.91%	# of PS	# of S/N	7.44%
<b>2015</b>	50	45	90.00%	43	36	83.72%	50	44	88.00%	50	0	0.00%	88.00%	35	32	91.43%	130	7	5.38%	97	6	6.19%
<b>2014</b>	41	38	92.68%	31	24	77.42%	41	35	85.37%	41	0	0.00%	85.37%	48	45	93.75%	116	4	3.45%	76	2	2.63%
<b>2013</b>	48	47	97.92%	43	38	88.37%	49	48	97.96%	49	0	0.00%	97.96%	53	50	94.34%	87	6	6.90%	53	3	5.66%
<b>2012</b>	56	53	94.64%	45	34	75.56%	56	53	94.64%	56	0	0.00%	94.64%	50	42	84.00%	53	4	7.55%	37	3	8.11%
<b>2011</b>	55	52	94.55%	48	34	70.83%	55	50	90.91%	55	0	0.00%	90.91%	38	32	84.21%	67	3	4.48%	56	0	0.00%
<b>5 Year Average</b>			94.95%			78.05%			92.22%			0.00%	92.22%			89.08%			5.60%			4.10%

Terminology	Definition
<b>FAUPL or NPL or PL</b>	Percentage benchmark the program must meet or exceed.
<b>Total N</b>	The number of students in the cohort of the specified year listed.
<b># of PS</b>	# of participants served (base # of students in the cohort)
<b># of S/N</b>	# of students in the cohort that completed (# of students out of the base # in the cohort that successfully completed the program)
<b>1P1</b>	Program technical course completion percentage.
<b>1P2</b>	Program general studies course completion percentage.
<b>2P1</b>	Program degree attainment percentage.
<b>3P1</b>	Program retention/transfer percentage.
<b>2P1 + 3P1</b>	Degree attainment + retention percentage.
<b>4P1</b>	Job placement percentage reported at six-month graduate survey.

## WTCS QRP SCORECARD ANALYSIS WORKSHEET

<b>Program:</b>	Welding 31-442-1			
<b>Target Analysis</b>				
<b>Indicator</b>	<b>Actual</b>	<b>Threshold</b>	<b>Target</b>	<b>Best Practice or Innovation – Describe and include how this has contributed to your high actual results for this indicator.</b>
<b>C200</b> Course Completion	85.7%	52.8%	100%	The target is not reachable because we will never have 100% of student's graduate that started. 85% of students is a high completion percentage due to the high demand of the field and the hands-on approach.
<b>C600</b> Minority Student Course Completion	100%	NA	100%	All minority graduated 100%
<b>Threshold Analysis</b>				
<b>Indicator</b>	<b>Actual</b>	<b>Threshold</b>	<b>Target</b>	<b>Potential Action – Describe what action(s) could possibly be taken to improve this indicator and why it might work.</b>
<b>C400</b> Special Population Course Completion	83.7%	38.5%	100%	Indicators passed the threshold but didn't meet the target due to lack of support or recruitment of women into the program. This can be addressed in the improvement plan.



## WTCS PERKINS SCORECARD ANALYSIS WORKSHEET

Program:	Welding 31-442-1			
Indicator	Actual	Benchmark	Not met (X)	What practices might be causing this performance and what potential actions could be taken to improve this score?
<b>1P1</b> Technical Course Completion	92.68%	75.18%		Students have high interest in the program they are studying and it is very hands-on and relevant to their interests.
<b>1P2</b> Academic (General Studies) Course Completion	77.42%	68.40%		Instructors work closely with general studies instructors to make the material apply to the program of study.
<b>2P1</b> Degree Attainment (Completion)	85.37%	57.50%		It's a short 1-yr hands-on program that is very appealing to most students making it easy to complete.
<b>3P1</b> Retention/ Transfer	0.00%	16.78%	X	Students that don't complete tend to be the students that job out or who do not pass their general studies coursework. Welding programs within the state do not align right now so there are not transfer opportunities for students to transfer.
<b>2P1+3P1</b>	85.37%	74.28%		Students don't pay the graduation fee to complete their program or they may job out.
<b>4P1</b> Placement (6-month survey)	93.75%	92.00%		This is a high demand field and students have no problems obtaining employment. Difficulty is keeping them until their degree is finished.

## FUTURE TRENDS AND EXTERNAL FACTORS

<b>Program</b>	<b>Welding 31-442-1</b>
<b>Future Trends</b>	
•	Robotics will gradually become more available and user friendly as time and technology move ahead.
•	Use of lasers to precisely cut materials will gradually replace plasma cutting. This technology will get more user friendly and cheaper as time goes on.
•	The introduction to automation is happening at a steady pace in some areas.
•	
•	
<b>Employment Trends</b>	
Local	
•	The 5 main trade unions are experiencing an upsurge of work and the existing union membership is finding it difficult to fill all the positions.
•	There are more jobs than graduates currently.
State	
•	The retirement tide predicted is happening among the trade union membership.
•	
<b>External Factors</b>	
•	Some areas have seen a slow down as manufacturing slowed due to the drop in oil prices. This arrested the drilling of new oil wells and demand for oil has slowed. This has resulted in less demand for oil sector equipment and personnel. This has meant that manufacturing jobs once unfilled are being filled with redundant oil field workers.
•	The price of steel has dropped too, and the demand for iron ore has significantly decreased. This is cyclical, as seen over the past decades, and will return.
•	The slowdown of the mining industry has impacted the local manufacturing and maintenance facilities who rely of the mines for steady work. Likewise, the price of scrap steel has dropped too, resulting in less demand for demolition and recycling equipment, again translating to a slowdown in manufacturing.
•	
•	

# **IMPROVEMENT PLAN**

## ACADEMIC PROGRAM IMPROVEMENT PLAN

<b>PROGRAM:</b>	Welding 31-442-1				
<b>Defined Outcome:</b> Improve number of non-traditional students in the welding program by 5%	QRP Indicator #	Perkins Indicator #	Responsibility	Timeline	Resources
	C400				
<b>Action Plan/Action Items:</b>  Market to female populations by visiting high schools and tech ed classes.  Include females on program web page.  Include endorsements from female graduates.  Promote activities such as Diva Tech.			<b>Instructor, Dean, Marketing Director, Webmaster</b>	<b>Fall 2016 – Spring 2018</b>	<b>Marketing Director, Webmaster</b>
<b>Update:</b> (A mid-year and year-end update will be required each year during implementation.) June 2016 Several female groups were brought in to the labs for a short term welding boot camp at Superior and New Richmond campuses. With the new website redesign, more photos of females and testimonials will be included. Diva Tech was held at the Ashland campus this last year and Aleasha represented. January 2017 No data available as of yet June 2017 Data is currently being compiled. January 2018 Goal to increase non-traditional students by an average of 5% over the life of the program review has been met. 2015 – 7 students. Over the next two years we increased the average non-traditional students by 6.66%. Goal was met due to the following changes made: New website has been put in place where women have been identified on the page. More has been done in the last 2 years regarding activities for non-traditional students in the welding program including Diva Tech, CESA 12 events for non-traditional students, girls workshop in Superior with Aleasha where they completed a community wishing tree for the City of Superior. Once website is up and running for a little while, testimonials will be added to the welding webpages.					

## ACADEMIC PROGRAM IMPROVEMENT PLAN

<b>PROGRAM:</b>	Welding 31-442-1				
<b>Defined Outcome:</b> Allocate budget dollars to Sustain current sections of Welding after grant funding is finished	QRP Indicator #	Perkins Indicator #	Responsibility	Timeline	Resources
<b>Action Plan/Action Items:</b>  Present enrollment data that supports need for additional sections of welding.  Ensure major equipment supports current sections of welding.			Instructor, dean, Business office	Summer 2016 – Spring 2018	Business office

**Update:** (A mid-year and year-end update will be required each year during implementation.)

June 2016

As long as enrollments are good, the college has agreed to secure the funding to support the additional sections of Welding at 3 of the 4 locations: Superior, New Richmond and Rice Lake. Major equipment supported current sections of welding.

January 2017

Present enrollment data stayed strong for fall 2016 with each section except Superior being full. Data will continued to be collected for the upcoming year to see if changes need to be made for the 2017-18 school year. Budgets will support all 7 sections of Welding to continue at all 4 locations.

June 2017

Present enrollment data is strong for fall 2017 with all sections looking healthy. Most sections are full. Data is being collected on the enrollment report every 2 weeks. Calls are being made by the instructors currently to make sure all students are registered, questions/concerns are answered and students are ready to go for the fall 2017 start.

January 2018

Additional sections have proved to be healthy at most locations. The college will continue to support all sections of welding as long as numbers continue to stay healthy. Enrollments in 2015, 2016 & 2017 are as follows:

Enrollments	Capacity	2015	Capacity	2016	Capacity	2017
Ashland18		16	16			
Evening	18	100%	15	94%	13	81%
Superior	18	18	18	18		
Daytime	13	72%	17	94%	14	78%
Evening	15	83%	7	39%	11	61%
Rice Lake	14	14	14	18		
Daytime	16	114%	15	107%	17	94%
Evening	16	114%	12	86%	9	50%
New Richmond	20	20	20	20		
Daytime	19	95%	19	95%	18	90%
Evening	18	90%	17	85%	17	85%

## ACADEMIC PROGRAM IMPROVEMENT PLAN

<b>PROGRAM:</b> Welding 31-442-1					
<b>Defined Outcome:</b> Make a course modification to include more measurement such as caliper reading, tape measure reading and calculations into current math classes.	<b>QRP Indicator #</b>	<b>Perkins Indicator #</b>	<b>Responsibility</b>	<b>Timeline</b>	<b>Resources</b>
	C200				
<b>Action Plan/Action Items:</b>  Work with curriculum designer to modify course to include more measurement projects.  Implement modified course  Assess modified course  Follow-up with results			<b>Instructor, Dean, Curriculum designer, curriculum director</b>	<b>Spring 2016 – Spring 2018</b>	<b>Curriculum designer, curriculum director</b>
<b>Update:</b> (A mid-year and year-end update will be required each year during implementation.) June 2016 Investigation is beginning to make course modification. More research will continue this year and implementation is slated to be implemented in fall 2017. January 2017 Data is collected and modification conversations will be started with Ted May and the math faculty that teach the welding math courses. June 2017 Modifications have been implemented in the Math courses for fall 2017 to include more measurement. Data will be collected to see if the modified course has increased the knowledge needed to be successful in the welding program. January 2018 Data will be collected in May to see if changes made were effective.					

## ACADEMIC PROGRAM IMPROVEMENT PLAN

<b>PROGRAM:</b>	Welding 31-442-1				
<b>Defined Outcome:</b> Remodel lab space at Rice Lake and Superior to address safety and space issues and post appropriate signage and warnings in and out of lab.	QRP Indicator #	Perkins Indicator #	Responsibility	Timeline	Resources
<b>Action Plan/Action Items:</b>  Superior/Rice Lake remodeling plan will address the welding safety and space issue – Summer 2016 plan.  State approval of remodeling plan  Conduct safety audit  Implement audit recommendations  Follow- up for compliance  Post hazardous warnings for equipment use appropriately: IE: pace maker risk, seizure.			<b>Instructor, Dean, Facilities Maintenance, Campus VP</b>	<b>Summer 2016</b>	<b>Instructor, Dean, Architect, Mechanical Engineer, Facilities Maintenance, Campus VP</b>



**Update:** *(A mid-year and year-end update will be required each year during implementation.)*

June 2016

Superior lab remodel is underway and is due to be completed by August 2016. Rice Lake remodel will begin August 2016 to be completed by August 2017. These remodels have addressed all safety issues and space issues at each location.

January 2017

Welding Lab at Superior is completed with a few punch list items left to complete. 4 top action plans were completed, punch list items will be completed in the next couple of months, sound testing is scheduled for February. Post hazardous warnings for equipment use will be put on all machines that need them. Rice Lake will begin their construction of the lab beginning Summer 2017 and complete August 2017.

All warning signage will be completed after the completion of Rice Lake campus remodel and then warning signs will be applied to all labs at one time.

June 2017

Welding lab at Superior had sound testing done and failed. Corrective measures are being taken to lessen the noise in the lab. Architecture changes are being made as well as gaps in the top of the walls were filled to lower noise. Determination of ear protection at all times with a minimal NRR of 26 will have to be worn. Districtwide orders of ear protection and safety glasses will be completed, ordered and in labs ready for the fall start.

January 2018

Welding lab at Superior had noise baffles installed over Christmas break. Sound testing will take place in Feb/Mar 2018. As of now, ear plugs are required to work in the lab. Still a couple punch list items at Superior are being worked on (light switch). Rice Lake remodel is complete with a few punch list items still being worked on. Noise testing will happen at RL in March 2018 for lab noise. All signage After completion of the labs, all safety issues will have been addressed.

## ACADEMIC PROGRAM IMPROVEMENT PLAN

<b>PROGRAM:</b>	Welding 31-442-1				
<b>Defined Outcome: Completion of robotic welder training for 100% of faculty and increase # of completed certified faculty by 5%.</b>	<b>QRP Indicator #</b>	<b>Perkins Indicator #</b>	<b>Responsibility</b>	<b>Timeline</b>	<b>Resources</b>
<b>Action Plan/Action Items:</b>  New instructors need to be teacher certified (UW Stout offers all 7 classes in the summer (summer immersion program).  Robotic training for instructors – Training at Lincoln – In Cleveland – Training for 2 included in purchase of new robotic cell.			Dean, Mary Hansen	Fall 2016 – Spring 2018	Registration and travel
<b>Update:</b> (A mid-year and year-end update will be required each year during implementation.) June 2016 Steve Geiger is the newest member of the faculty and he completed all 7 classes within his Bachelor’s degree at UW-Stout Robotic welding training as well as virtual welder training is in the process of being scheduled. Training will happen in the 2016-17 school year. January 2017 Jesse Novak has one class that still needs to complete FQAS courses for certification. Data and Evidence Analysis will be completed by all instructors on January 16 & 17. Robotic training was completed for some instructors online and will continue and be completed within 2016-17 school year. <b>June 2017</b> Jesse will complete his final class this fall 2017 as his class has cancelled 3 times due to low enrollment. Data and Evidence was completed in January for all welding instructors. Robotic training was completed online for all instructors. January 2018 Jesse completed his final class and all instructors are FQAS certified.					

## ACADEMIC PROGRAM IMPROVEMENT PLAN

<b>PROGRAM:</b>	Welding 31-442-1				
<b>Defined Outcome:</b> Implement a Welding functional abilities form.	QRP Indicator #	Perkins Indicator #	Responsibility	Timeline	Resources
<b>Action Plan/Action Items:</b>  Add the requirement to the admissions requirements in the catalog/web and printed materials.  Review annually for changes			Dean, Faculty, Cindy King	Fall 2016	None
<p><b>Update:</b> (A mid-year and year-end update will be required each year during implementation.)</p> <p>June 2016 Welding functional abilities form has been implemented into the admissions requirements at each location for fall 2016 school year.</p> <p>January 2017 Completed</p> <p>June 2017 Nothing more to report</p> <p>January 2018 Updated and implemented</p>					