INSTITUTIONAL ASSESSMENT REPORT

ATS METAL FABRICATION / 2013

Department's Relationship to the College Mission and Strategic Plan
(completed Spring semester or on accreditation cycle)

In a paragraph or two, discuss how the department's work carries out the Mission and Strategic Plan.

The objectives of all career and technical programs at Jefferson College are to develop in each student:

1. Occupational skills necessary to secure initial employment in the field in which the student has been trained.

2. A background of related information including both theory and practice, necessary for success in the field of their choice.

3. Personal and social traits necessary for initial employment and for continuing success and advancement.

At the Area Technical School, Jefferson College's Metal Fabrication program is designed to prepare high school students for immediate employment, or transfer to post-secondary technical education. The programs are not intended for general education or exploratory purposes.

By comparing the College mission and the objectives of the ATS it can be noted that the underlying reason for the existence of both is to provide a solid means for a student to procure employment. Methods of providing this opportunity differ very little, which allows students at the ATS to effectively blend into the college population.

Summary of Departmental Activities, Assessment and Use of Results
(completed Spring semester or on accreditation cycle)
(may include process flowchart)

Provide a brief overview of major accomplishments since the last review and how assessment results have been used to improve services/learning outcomes.

~ ACCOMPLISHMENTS SINCE LAST REVIEW ~

Welding Certification

Since the last review, the Metal Fabrication program has begun to offer students the opportunity to complete the process of welding certification. Coupons are welded to AWS standard D1.1. In this rigorous process, the test plate must first complete and pass a visual exam. Upon completion of the visual test, the plate is then marked and sent for testing. The coupons are then tested at an off-site facility using a destructive testing method. If the coupon passes this test, the student receives a certification, which is recognized by the American Welding Society.

Curricular Program Improvements

Based on advisory committee input, the program instructor reviews the curriculum and performs updates annually. Since the last program review, the curriculum has begun revision to include AWS Sense program components. Several modules have been identified to fit the program and the end of year Technical Skills Assessment is given to assess the students' knowledge.

Fixed, Modified and Improved Upon Jefferson College Property

Quite often the program students perform fabrication and repairs for the college, its employees, and the community. This is very beneficial as it allows the students to receive real world experience. If a student completes their practice assignments, but then perform poorly on projects, it is clear which deficiencies need to be focused on for student success.

Equipment Added to Curriculum

To support the curriculum, the following items were added at the advice of the program advisory committee. The program added inverter welding technology. The use of inverter technology was implemented to allow the students to use cutting edge technology to weld on thin material. This helps students learn how to weld on material without causing the plate to warp.

A destructive bend tester was implemented to allow the students to perform coupon bending. The advisory committee feel it is important to allow students to test their own practice plates before

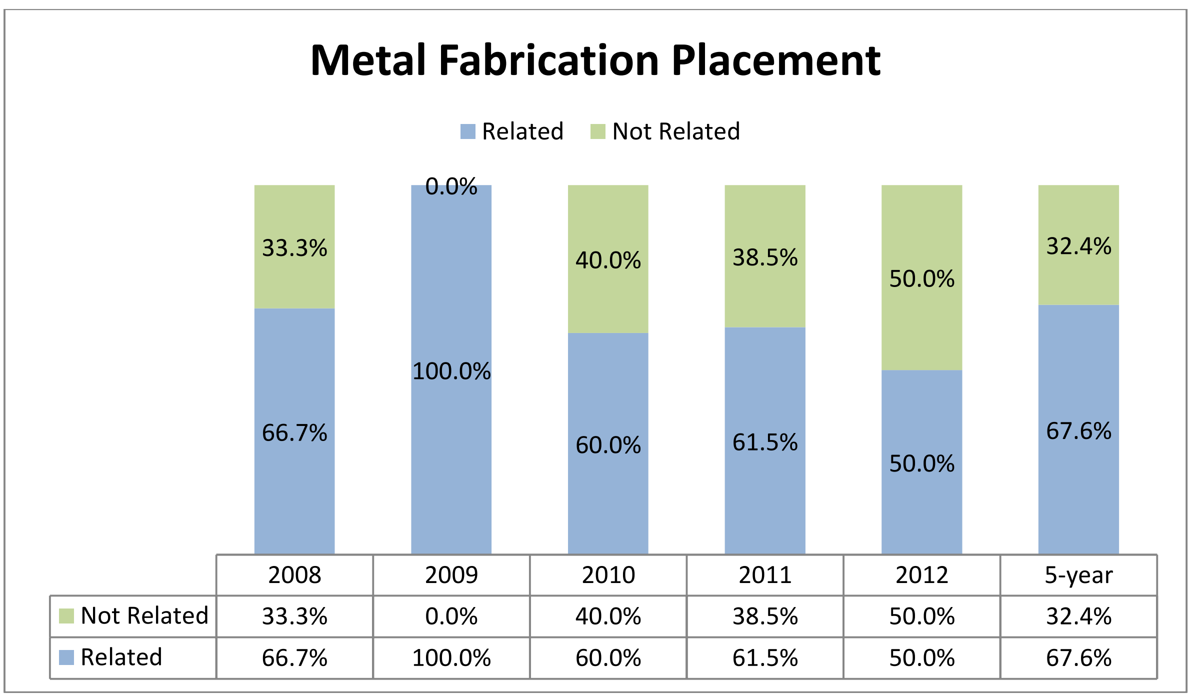
sending them in for certification. The other added benefit is to having a bend tester is it allows the students to learn how to perform certification tests to welding code specifications.
Since the last program review, students have also been introduced to the uses of metal nibblers and the benefits of cutting various metal types using this cutting process. Students are then required to cut the metal accurately in various sizes and shapes in a timely manner.

Internal and External Data Collection and Analysis
(completed by Fall semester or on accreditation cycle)

Gather and analyze relevant internal and external data (link to data).

Student Placement

The secondary Metal Fabrication program has averaged a 67.6% positive placement of students over the previous five years. Positive placement is based on employment or continuing education in a related area, or any military placement. Transition planning needs to continue to focus on creating connections for students in furthering their education, training, or employment. Strengthening the connection between Metal Fabrication and the other programs on campus, particularly Welding, would dramatically improve the placement of the Metal Fabrication students.



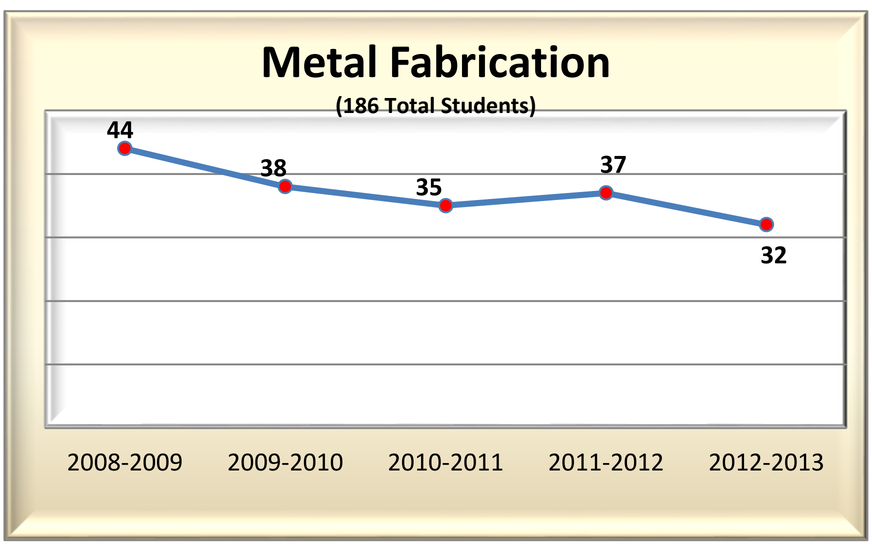
	2008	2009	2010	2011	2012	5-year
Not Related	33.3%	0.0%	40.0%	38.5%	50.0%	32.4%
Related	66.7%	100.0%	60.0%	61.5%	50.0%	67.6%

	ER	CER	M	ENR	CENR	OTH	NOCR	UNK	Total
2008	0	4	0	2	0	0	0	0	6
2009	1	3	0	0	0	0	0	0	4
2010	1	7	1	1	5	0	0	0	15
2011	1	5	2	1	3	1	0	0	13
2012	0	2	0	0	2	0	0	0	4

[Key: ER-Employed Related, CER-Continuing Ed Related, M-Military, ENR-Employed Not-Related, CENR-Continuing Ed Not-Related, OTH-Other, NOCR-Non-College Credit Institution Related, UNK-Unknown]

Student Enrollment Trends

Enrollment in Metal Fabrication appears to be trending down over the past five years. With the exception of the 2012-2013 school year the program has been near the capacity for the program (40). Overall, ATS enrollment had experience a slight decline after the 08-09 school year, but has shown a rebound in this current 2013-2014 school year (outside this review period). For example, the enrollment in Metal Fabrication for 2013-2014 is 38 students, matching the highest enrollment over the previous four years. The ATS has focused recruitment efforts over the past few years to include presentations to the maximum number of eligible students from the consortium high schools. A new recruiter was hired late in the recruitment season for the 2012-2013 school year, which may have had an impact on some programs, including the Metal Fabrication program.



Job Outlook

According to the Missouri Economic Research and Information Center (MERIC), an overall growth of 3.5 percent is anticipated in the St. Louis WIA region for the Primary Metal Manufacturing and Fabricated Product Manufacturing industry groups.

St. Louis Workforce Investment Region 2010-2020 Industry Projections					
		Employment		Change	
Industry		2010	2020	2010-2020	
Code	Title	Estimated	Projected	Numeric	Percent
000000	*Total Employment*	*1,013,672*	*1,081,607*	*67,935*	*6.7%*
331000	Primary Metal Manufacturing	1,846	1,910	64	3.5%
332000	Fabricated Metal Product Manufacturing	6,648	6,878	230	3.5%

Students in Metal Fabrication program have access to a wide variety of jobs. On MERIC's Top 100 Occupations with the most openings, welders, cutters, solderers and brazers made the list and represent over 3,000 growth and replacement positions in Missouri through 2020. With an mean annual wage of $34,585, students have the potential to earn a good salary with a high school diploma and less than one year of experience.

Top 100 Occupations with the Most Openings 2010-2020				
Occupational	Mean	2010-2020 Openings		
Title	Ann. Wage	Growth	Replacements	Total
Welders, Cutters, Solderers, and Brazers	$34,585	988	2,070	3,058

In addition to welding, Metal Fabrication students are exposed to a variety of other skills in the metal working industry. Students learn sheet metal skills, as well as metal lathe and mill operations. This provides students with greater access to jobs and/or additional post-secondary education. Two areas related to the Metal Fabrication program appear in MERIC's Top 100 fastest growing occupations in Missouri. With a mean annual wage of $53,228, sheet metal workers are predicted to experience a 17.58 percent growth through 2020, which reflects over 500 additional openings. Structural iron and steel workers are expecting a similar percentage of growth, but will result in an estimated additional 236 openings. Structural iron and steel workers are expected to earn an average of $47,701 in this time period.

Top 100 Fastest Growing Occupations (excludes occupations with less than 50 total openings)			
		2010-2020	
Occupational	Mean	Percent	Growth
Title	Ann. Wage	Change	Openings
Sheet Metal Workers	$53,228	17.58%	532
Structural Iron and Steel Workers	$47,701	17.57%	236

Annual Cost per FTE and Trend Analyses
(completed by Fall semester)

Provide cost per FTE and analyze for the period being evaluated.

The following tables show the Metal Fabrication cost per FTE since the previous review:

Secondary Metal Fabrication

Year	Total Program Costs	# students	$ per FTE	Perkins	Enhancement
2008-2009	$91,309.80	44	$2,075.22	$2,956.11	$8,664.70
2009-2010	$91,502.20	38	$2,407.95	$9,609.03	$53,707.71
2010-2011	$99,006.48	35	$2,828.76	$3,040.23	$975.00
2011-2012	$99,389.13	37	$2,686.19	$867.47	$0.00
2012-2013	$103,854.65	32	$3,245.46	$138.50	$29,042.86
	$485,062.26	186	$2,607.86	$16,611.34	$92,390.27

Analysis

Over the past five years, the average yearly cost per FTE for the Metal Fabrication program was $2,607.86. The annual tuition for the ATS has been $1,900 per student for the past several years, so a substantial portion of the costs are offset by the sending school districts. This figure does not reflect the Perkins funds used to support the program during the same time period.

Enhancement Grant funds were utilized in four of the five school years since the last review to update and add new equipment to the program. With feedback from the advisory committee, the college spent $92,390 to purchase the equipment. As a general rule, 75 percent of these funds were reimbursed to the college to support the enhancement of the technical program and curriculum.

SWOT Analysis
(completed by Fall semester)

Using the data collected and analyzed, complete a SWOT analysis. Reference and link data for each.

Internal Strengths	Internal Weaknesses
• Program accepts students from various backgrounds and skill levels and demonstrated success. • Program contains various types of metal working equipment. • Program instructor is highly effective and works well with students varying ability and skill levels. • Enhancement Grant funding provides state-of-art equipment. • Advisory committee members have a high level of expertise.	• Shop is in need of expansion. Work space is limited.
External Opportunities	**External Threats**
• External Certification for students. • Employers hire program graduates. • Qualified industry experts are available for expanding advisory committee.	• Reduction in sending school budgets can have a direct impact on student enrollment.

External Accreditation (if applicable)
Link to accreditation report.

Not Applicable

DEPARTMENTAL ACTION PLANS for *Metal Fabrication* / *2013*

Org	Aim	Obj	Action Plan	KPI	$	Other Req	Responsible Party	End Date	Status	Target Year	Metric Desc	Metric Value	Benchmark Desc	Benchmark Value	Target Desc	Target Value
56614	1	4	Review and align recruitment and retention efforts to increase enrollment.	Enrollment			Instructor ATS Recruiter ATS Director		Pending	2015						
56614	1	10	Collaborate with ATS support staff, advisory committee and college staff to ensure positive placement of program graduates	Placement			ATS Recruiter, ATS Director, Instructor, Employment Specialist		Pending	2015						
56614	1	1	Update tools and equipment to meet the needs of the program instructional requirements.	Program Inventory			Instructor, ATS Director		Pending	2015						
56614	1	1	Increase the percentage of students who pass the AWS Sense Technical Skills Assessment and obtain at least one welding certification	TSA scores, Welding Cert. Results			Instructor, ATS Director		Pending	2018						

Evaluation

☒ Meets Expectations
Comments:

☐ Requires Attention and Submission of a Follow-Up Report
Comments:

☐ Does Not Meet Expectations and Requires Submission of a Follow-Up Report
Comments:

Follow-up report required by: ______________________________
Comments: (Date)

Approvals

______________________________ Oct. 31, 2013
Division Chair/Director — Date
Comments:

______________________________ Nov. 7, 2013
Dean — Date
Comments:

______________________________ March 25, 2014
Vice President/President — Date
Comments: