

# Fayetteville Technical Community College

## Detailed Assessment Report 2015-2016 Welding Technology *As of: 8/01/2016 01:03 PM EST*

### Mission / Purpose

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The purpose of Welding Technology curriculum is to teach the welding techniques and manipulative skills required for each major welding process.

### Student Learning Outcomes/Objectives, with Any Associations and Related Measures, Targets, Reporting Findings, and Action Plans

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#### **SLO 1: WLD 261 Weld According to the D1.1 Structural Steel Code Book**

Students will demonstrate their ability to pass the visual acceptance criteria and guided bend test on the welder qualification test in the 3G vertical & 4G overhead positions.

#### Relevant Associations:

##### **General Education/Core Curriculum Associations**

- 1 Communicate effectively using the conventions of American Standard English in professional and academic environments.
- 2 Use critical thinking to analyze problems and make logical decisions.
- 5 Demonstrate computer literacy.

##### **Institutional Goals Associations**

- 4 Focus on workforce preparedness to support economic development.

##### **Strategic Objectives Associations**

##### **FTCC**

- 43 Enhance outreach to business/industry to understand and define existing and future workforce training needs.
- 51 Provide a safe and secure learning environment.

#### Related Measures

#### **M 1: WLD 261 Weld According to the D1.1 Structural Steel Code Book**

What: An 8-hour certification test in WLD 261 will be used to assess the student's ability to weld according to a (WPS) in the 3G vertical and 4G overhead positions with acceptable visual appearance. Why: Welding Technology student should be able to successfully pass a welders qualification test to achieve success and attain employment. How: A virtual computer based and hands-on assessment is the most effective way to assess their skills. Students will be given a Welding Procedure Specification (WPS) document. They will be required to interpret the (WPS) then select the correct welding process, correct amperage setting, and the correct electrode size according to the (WPS). Finally, the student will be required to weld in 3G and 4G positions using the (WPS) and to pass a weld coupon guided bend test to receive a D1.1 Structural Steel Unlimited Welders Qualification certification. An American Welding Society (AWS) code book will be used to evaluate the performance of each student. When and Who: This assessment will be conducted in the summer 2016 semester, results will be reviewed by a Certified Welding Inspector (CWI).

Source of Evidence: Performance (recital, exhibit, science project)

#### **Connected Documents**

[Certification](#)  
[Visual Acceptance Criteria](#)  
[WPS](#)

#### **Target:**

80% of the students will receive a D1.1 Structural Steel certification.

#### **Connected Document**

[WLD 261 D1.1 Structural Steel Certification](#)

#### **Reporting Finding (2015-2016) - Target: Met**

28 students were tested using a welding procedure specification (WPS). The goal was for 80% of the students to receive a D1.1 certification by June 15, 2016. Out of the 28 tested 82% of those students (total of 23 students) passed the other 17% did not pass (total of 5 students). The goal was met for this semester

#### **SLO 2: WLD 110 Proper Set-Up & Shut Down of an Oxy-Fuel System**

Welding Technology students should be able to demonstrate the proper set-up and shut down procedure of an oxy-fuel cutting system. The student/s should be able to properly set-up a cutting system and then complete the task in a safe manner.

#### Relevant Associations:

##### **General Education/Core Curriculum Associations**

- 2 Use critical thinking to analyze problems and make logical decisions.
- 4 Demonstrate quantitative competencies.

##### **Institutional Goals Associations**

- 4 Focus on workforce preparedness to support economic development.

## Strategic Objectives Associations

### FTCC

- 20 Ensure that faculty and staff understands their individual responsibility to provide high quality customer service.
- 43 Enhance outreach to business/industry to understand and define existing and future workforce training needs.
- 51 Provide a safe and secure learning environment.

## Related Measures

### M 2: WLD 110 Proper Set-Up & Shut-Down of an Oxy-Fuel System

Why: Welding Technology students should be able to demonstrate the proper set-up and shut down procedure of an oxy-fuel cutting system. The student/s should be able to properly set-up a cutting system and then complete the task in a safe manner. What and How: The program uses lab demonstrations with hands-on exercises involving live projects. All students will be given a program competency test that will involve a lab demonstration. Students should be able to communicate effectively with their instructor and classmates with the correct procedure setting up and shutting down an oxy-fuel cutting system. When and Who: Students will be tested at the end of the WLD 110 Fall 2015 semester and the instructors will review the results.

Source of Evidence: Performance (recital, exhibit, science project)

#### Connected Document

[Oxy-Fuel Assessment](#)

#### Target:

100% of students will receive 90% or better on Proper Set-up & Shut-Down.

#### Connected Document

[Proper Set-Up & Shut-Down](#)

#### Reporting Finding (2015-2016) - Target: Not Met

48 students were tested and scored based on the Oxy-fuel assessment. The goal was 100% of the students to pass with a grade of 90 or better. 73% of those students (total of 35 students) scored 90 or better 27% did not pass (total of 13 students). The goal was not met for this semester

#### Related Action Plans (by Established cycle, then alpha):

For full information, see the *Details of Action Plans* section of this report.

#### Oxy-fuel Set-up & Shut down

*Established in Cycle: 2015-2016*

Welding Technology instructors will review teaching techniques and strategies to ensure we a teaching in a reasonable manner a...

### SLO 3: WLD 121 Layout & Fabrication

WLD 121 students will demonstrate their ability layout & fabricate a utility trailer using the instructions of a given blue print during a 2 week project.

#### Relevant Associations:

##### General Education/Core Curriculum Associations

- 1 Communicate effectively using the conventions of American Standard English in professional and academic environments.
- 2 Use critical thinking to analyze problems and make logical decisions.
- 3 Demonstrate socialization skills that support cultural awareness and a global perspective.
- 4 Demonstrate quantitative competencies.

##### Institutional Goals Associations

- 1 Respond to student and community needs through measurable goals.
- 4 Focus on workforce preparedness to support economic development.

#### Strategic Objectives Associations

### FTCC

- 19 Increase Work-Based Learning and intern work opportunities for students.
- 51 Provide a safe and secure learning environment.

## Related Measures

### M 3: WLD 121 Layout & Fabrication

What: Welding Technology students will have a 2 week project to include the layout & fabrication of a utility trailer using the instructions of a given blue print. Why: Welding Technology student/s should be able to read, analyze, lay out & fabricate and complete the task in a timely manner. How: The program uses lab demonstrations with hands-on exercises involving live projects. All students will be given a program competency test that will involve a lab demonstration. Students should be able to communicate effectively with their instructor and classmates with the correct procedure setting up and shutting down an oxy-fuel cutting system. When and Who: Students will be given the project during their WLD 121 Spring 2016 semester and the instructors will review the results according to a rubric.

Source of Evidence: Project, either individual or group

#### Connected Document

[Rubric WLD 121 Layout & Fabrication](#)

#### Target:

100% of students will receive 80% or better on Layout & Fabrication.

#### Connected Document

[Lay-Out & Fabrication](#)

### **Reporting Finding (2015-2016) - Target: Not Met**

46 students were tested and scored based on the WLD 121 rubric for Lay-out & Fabrication. The goal was for 100% of the students to pass with a grade of 80 or better. 96% of those students (total of 44 students) passed 4% did not pass (total of 2 students). The target was not met for this semester.

### **Related Action Plans (by Established cycle, then alpha):**

For full information, see the *Details of Action Plans* section of this report.

#### **Layout & Fabrication**

*Established in Cycle:* 2015-2016

Welding Technology instructors will develop and implement more measurement & problem solving task throughout the FALL 2016 sem...

## **Details of Action Plans for This Cycle (by Established cycle, then alpha)**

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### **Layout & Fabrication**

Welding Technology instructors will develop and implement more measurement & problem solving task throughout the FALL 2016 semester to ensure students are capable of using measuring instruments associated with welding & fabrication.

**Established in Cycle:** 2015-2016

**Implementation Status:** Planned

**Priority:** High

**Relationships (Measure | Outcome/Objective):**

**Measure:** WLD 121 Layout & Fabrication | **Outcome/Objective:** WLD 121 Layout & Fabrication

**Projected Completion Date:** 08/2016

**Responsible Person/Group:** Welding Technology Instructors

### **Oxy-fuel Set-up & Shut down**

Welding Technology instructors will review teaching techniques and strategies to ensure we a teaching in a reasonable manner and within today industry demands to ensure all students achieve success.

**Established in Cycle:** 2015-2016

**Implementation Status:** Planned

**Priority:** High

**Relationships (Measure | Outcome/Objective):**

**Measure:** WLD 110 Proper Set-Up & Shut-Down of an Oxy-Fuel System | **Outcome/Objective:** WLD 110 Proper Set-Up & Shut Down of an Oxy-Fuel System

**Projected Completion Date:** 08/2016

**Responsible Person/Group:** Welding Technology Instructors

## **Analysis Questions and Analysis Answers**

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### **What were the strengths of your assessment process?**

The strengths of our assessment were by using a rubric and a (WPS) along with hands-on project we were able to identify the strengths and weaknesses of the student's learned ability, This, in return, allowed us to concentrate on specific areas where student's need the most improvement to achieve success.

### **What were the weaknesses of your assessment process?**

Even though all targets were not met we still had a high percentage passing rate. But I do think the program overall needs to find a better way to maintain student's interest and ability to stay focused on projects that run for a period of 3 days or more.

### **What was learned as a result of your assessment process?**

Some students taking the assessments did not achieve their goal and the programs target goal, but overall the assessment really worked in guiding the instructors and program in the right direction as to letting us know where we stand and how we can improve on instructional techniques to achieve a 100% passing rate on all objects.

### **How will what was learned impact the direction and emphasis of your academic or support unit?**

As instructors, we will continue to direct and teach the fundamental practices of welding that benefits the welding program and students along with today demanding industry. So we can produce qualified welders which will be immediately employable upon graduation. We will also put forth a lot of emphasis towards the students' ability to maintain attention throughout the program and length projects to ensure they have the critical skills needed for employment.

## **Annual Report Section Responses**

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### **Program Review (Academic Units)**

Attached is the most recent academic program review.

**Connected Document**

[Program Review](#)

**Advisory Comm. Minutes (Academic Units)**

All academic programs have associated Advisory Committees that provide community input on program direction and outcomes.

**Connected Document**

[Welding Technology Advisory Board Minutes](#)

**End Of Year Reports (VPs, AVPs, Deans)**

Strategic Plan (2015-2020) and other related documents

**Connected Documents**

[2016 Grad Survey](#)

[Strategic Plan 2015-2020](#)

**WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD**

Welder or Welding Operator Name: \_\_\_\_\_  
 Welder's SS No. xxx-xx Clock No: \_\_\_\_\_ N/A Identification No: \_\_\_\_\_ N/A

Welding Process: SMAW Manual: X Semiautomatic: \_\_\_\_\_ Automatic: \_\_\_\_\_

Weld Joint: Single Vee Groove (45°) Backing Strip: Yes  
 Position: 3G Vertical  
 Weld Progression: Vertical Uphill Single or Multiple Electrode: Single  
 In Accordance with Procedure Specification No: AWS D1.1

Weld Joint: Single Vee Groove (45°) Backing Strip: Yes  
 Position: 4G Overhead  
 Weld Progression: Forward Single or Multiple Electrode: Single  
 In Accordance with Procedure Specification No: AWS D1.1

Material Specification: ASTM A36 P-No: 1  
 Joint Thickness (diameter and wall thickness if pipe) : 1" Plate

Filler Metal Specification: AWS A5.1 Classification: E7018 F-No: 4  
 Filler Metal Diameter and Trade Name: 1/8" E7018 Excalibur  
 Flux (submerged arc) or Gas (gas metal-arc or flux-cored arc welding): N/A

Make and Serial No. of Machine: Miller XMT 304  
 Current (AC or DC): DC Polarity: Reverse Amperage: 120 Voltage: 24  
 Preheat: N/A Postheat: N/A Method of Cleaning: Brush Travel Speed: N/A In/Min.  
 No. of Passes: Multiple Appearance of Weld: Acceptable

Location of Test: Fayetteville Technical Community College Date: July  
 Witnessing Inspector: Steven Reid Scott 14060331 Branch: \_\_\_\_\_  
 Positions This Test Qualifies: Groove & Fillet All positions AWS D1.1 (Table 4.10)  
 Thickness/Diameter Range This Test Qualifies: Min 1/8"- Max Unlimited AWS D1.1 (Table 4.11)

**Guided Bend Test Results**

Type	Identification	Results	Type	Identification	Results
Side	V-1	Acceptable	Side	O-1	Acceptable
Side	V-2	Acceptable	Side	O-2	Acceptable

Test Conducted by: Steven Reid Scott Laboratory Test No: \_\_\_\_\_ Per: AWS D1.1

**Radiographic Test Results**

Film Identification	Results	Remarks	Film Identification	Results	Remarks

Test Conducted by: \_\_\_\_\_ Laboratory Test No: \_\_\_\_\_ Per: \_\_\_\_\_

We the undersigned, certify that the statements in this record are correct to the best of our knowledge and belief; and that the welds were prepared and tested in accordance with the requirement of AWS D1.1

By: \_\_\_\_\_

## APPENDIX VII

### VISUAL WELD INSPECTION ACCEPTANCE CRITERIA

Slag shall be removed from all completed welds. All welds and the adjacent base metal shall be cleaned by brushing or by any other suitable means prior to visual inspection. All welds shall meet the following visual acceptance criteria prior to any nondestructive or destructive testing. To be visually acceptable, a weld shall meet the following criteria:

- (1) The weld shall have no cracks.
- (2) Thorough fusion shall exist between adjacent layers of weld metal and between weld metal and base metal.
- (3) All craters shall be filled to the full cross section of the weld.
- (4) Weld profiles shall be in accordance with Appendices V and VI.
- (5) When the weld is transverse to the primary tensile stress in the part that is undercut, the undercut shall be no more than 0.010 in [0.25 mm] deep.
- (6) When the weld is parallel to the primary tensile stress in the part that is undercut, the undercut shall be no more than 1/32 in [0.80 mm] deep.
- (7) The sum of the diameters of visible porosity shall not exceed 3/8 in [9.5 mm] in any linear inch of weld nor shall the sum exceed 3/4 in [19.0 mm] in any 12 in [305 mm] length of weld.
- (8) Any single continuous fillet weld shall be permitted to underrun the nominal fillet weld size specified by 1/16 in [1.6 mm].
- (9) Visual inspections of welds in all steels may begin immediately after the completed welds have cooled to ambient temperature. Final visual inspection for ASTM A 514 and A 517 steel welds shall be performed not less than 48 hours after completion of the weld and removal of preheat.
- (10) Arc strikes outside the weld groove or area are prohibited.

<b>NORTH CAROLINA COMMUNITY COLLEGES</b> <b>Welding Procedure Specification (WPS)</b>	<b>WPS Number</b> <b>NCCC-014</b>	<b>Obj Number</b> <b>D-14.03</b>
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Welding Process(es) SMAW

Equipment Type Manual

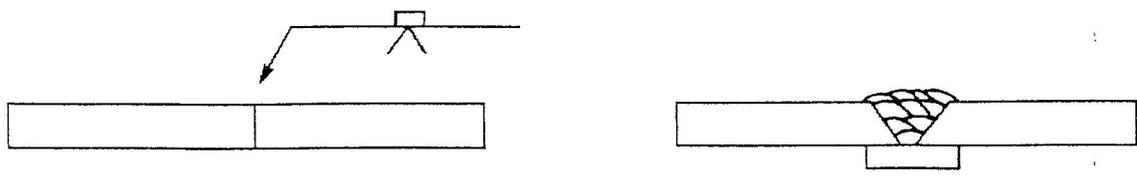
<b>JOINT DESIGN</b>		<b>FILLER MATERIAL</b>		<b>ELECTRICAL CHARACTERISTIC</b>	
Type:	<u>Butt, Single V</u>	Specification:	<u>AWS A5.1</u>	Current: AC:	<u>NA</u>
Backing:	<u>Yes</u>	Classification:	<u>E-7018</u>	DCEN:	<u>NA</u>
Backing Material:	<u>A-36 Carbon</u>	Diameter:	<u>1/8"</u>	DCEP:	<u>Yes</u>
Root Opening:	<u>1/4" Min</u>	<b>SHIELDING</b>		Other:	<u>NA</u>
Root Face Dimension:	<u>0"</u>	Flux:	<u>NA</u>	<b>TRANSFER MODE</b>	
Groove Angle:	<u>45° Max</u>	Flux Classification:	<u>NA</u>	Globular:	<u>NA</u>
Radius (J-U):	<u>NA</u>	Gas:	<u>NA</u>	Spray:	<u>NA</u>
Back Gouging:	<u>NA</u>	Composition:	<u>NA</u>	Pulse:	<u>NA</u>
Back Gouging Method:	<u>NA</u>	Flow Rate:	<u>NA</u>	Short-circuiting:	<u>NA</u>
<b>BASE MATERIAL</b>		<b>POSITION</b>		<b>TECHNIQUE</b>	
Material Specification:	<u>Carbon Steel</u>	Surface:	<u>NA</u>	Stringer:	<u>Yes</u>
Type or Grade:	<u>A-36</u>	Fillet:	<u>NA</u>	Weave:	<u>NA</u>
Thickness:	<u>3/8"</u>	Groove:	<u>3G</u>	(SAW) # of Electrodes:	<u>NA</u>
Pipe Diameter:	<u>NA</u>	Progression:	<u>Upward</u>	Contact Tube to	
Pipe Schedule:	<u>NA</u>			Work Distance:	<u>NA</u>
				Interpass Cleaning:	<u>Chip and Brush</u>

**WELDING PROCEDURE**

Layer(s)	Process	Electrode Class	Diameter	Polarity Type	Amp. Range Wattage (if plastic)	Wire Feed Speed	Arc Voltage Range	Travel Speed (Minimum)
Root	SMAW	E-7018	1/8"	DCEP	90-150	NA	0-80	5"/Minute
Fill and Cap	SMAW	E-7018	1/8"	DCEP	90-150	NA	0-80	5"/Minute

Joint Details

Typical



\* Applies to Plastics Only  
Acceptance Criteria Reference 1994 AWS D1.1 Sections 5.19, 9.25 Quality of Welds and Figure 3.4

80% Of the student will receive a D1.1 Structural Steel Certification

Steven Scott

1	100%
2	100%
3	0%
4	100%
5	0%
6	100%
7	100%
8	100%
9	100%
10	100%
11	100%
12	100%
13	100%
14	50%
15	100%
16	100%
17	100%
18	100%
19	100%
20	100%

Prentiss Mars

1	50%
2	100%
3	0%
4	100%
5	100%
6	100%
7	100%
8	100%

82% of the students receive a D1.1 Structural Steel Certification. Target Met.

## Oxy-Fuel Assessment

### Torch Setup

1. Put on your personal protective equipment. \_\_\_\_\_
2. Inspect possible damage to equipment. \_\_\_\_\_
3. Crack the oxygen and acetylene valves. \_\_\_\_\_
4. Attach the oxygen regulator. \_\_\_\_\_
5. Attach the acetylene regulator. \_\_\_\_\_
6. Attach the flashback arrestor onto the oxygen regulator. \_\_\_\_\_
7. Attach the flashback arrestor onto the acetylene regulator. \_\_\_\_\_
8. Attach the oxygen and acetylene onto correct regulator. \_\_\_\_\_
9. Attach torch. \_\_\_\_\_
10. Turn out the flow pressure adjustment screw and then open oxygen valve. \_\_\_\_\_
11. Turn out the flow pressure adjustment screw and then open acetylene valve. \_\_\_\_\_
12. Set oxygen operating pressure to (40 psi). \_\_\_\_\_
13. Set acetylene operating pressure to (5 psi). \_\_\_\_\_
14. Purge the oxygen and acetylene lines. Then double check the pressure settings. \_\_\_\_\_
15. Open the acetylene torch valve and then light the torch. \_\_\_\_\_
16. Open the torch oxygen valve. Adjust the acetylene and oxygen valves until a neutral flame is achieved. \_\_\_\_\_

### Torch Shutdown

1. Turn off the torch oxygen valve first. \_\_\_\_\_
2. Turn off the torch acetylene valve. \_\_\_\_\_
3. Close the oxygen cylinder valve. \_\_\_\_\_
4. Close the acetylene cylinder valve. \_\_\_\_\_
5. Purge the oxygen line. \_\_\_\_\_
6. Turn out the oxygen flow pressure adjustment screw. \_\_\_\_\_
7. Purge the acetylene line. \_\_\_\_\_
8. Turn out the acetylene flow pressure adjustment screw. \_\_\_\_\_
9. Secure the cylinders and store properly. \_\_\_\_\_

Total: \_\_\_\_\_

Each line item counts for a total of 4 points.

Total possible points 100.

## 100% of students will receive a 90% or better on Proper Set & Shut Down.

	Eric Johnson	Prentiss Mars III	Steven Scott
1	66.00%	100%	100%
2	0.00%	100%	100%
3	73.00%	100%	95%
4	66.00%	95%	100%
5	86.00%	50%	100%
6	66.00%	95%	70%
7	100.00%	90%	95%
8	100.00%	95%	100%
9	86.00%	95%	100%
10	100.00%	95%	100%
11	86%	90%	0%
12	100.00%	100%	100%
13	100.00%	95%	100%
14	100.00%	95%	90%
15	100.00%	100%	
16	80.00%		
17	0.00%		
18	100.00%		
19	93.00%		

73% of students received a 90% or better goal not met.

## RUBRIC Welding Technology

### Utility Trailer Layout & Fabrication

This Rubric will grade how well students communicate and work together as group to accomplish the layout & fabrication of a utility trailer. This assessment will be completed in WLD 121.

Assessment Grade	Group Effort Discussion/Bonding	Utility Trailer components identified	Cuts & Welds are Satisfactory	Group discussion to classmates	Safety practiced among group
Assessment Grade 100%	Group communicates and works excellent together.	Trailer components totally identified	Cuts & Welds excellent with no discontinues	Discussion given with clarity and pointed, from all members	Excellent safety practiced
Assessment Grade 90-99%	Group communicates well, but lacks solid participation from all members	Trailer components identified with little confusion	Cuts & Welds good with minor discontinues	Discussion given with clarity and pointed but some members not participating as much	Nearly flawless safety practiced
Assessment Grade 80-89%	Group communication could be better, some members are not participating as often as others	Trailer components identified but with some group member disagreement	Cuts & Welds good to fair with an extremely amount of discontinues	Discussion lacking some clarity and/or points. Some members not participating	One minor flaw in safety practiced
Assessment Grade 70-79%	Group has trouble organizing and communicating. Each member is not contributing equally	Trailer components identified but with confusion from group members	Cuts & Welds fair with some discontinues and defects	Discussion lacking a lot of clarity and/or points. Some members not participating	More than one minor flaw in safety practiced
Assessment Grade 60-69%	Group is arguing and/or complaining. Lack of organization skills. Members lack contribution	Trailer components misidentified and with confusion with group members	Cuts & Welds fair to poor with some defects	Discussion lacks clarity and points. Many members not participating	Major flaw and minor flaws observed in safety
Assessment Grade Below 60%	Group refuses to work together	Trailer components not identified	Cuts & Welds extremely poor to many defects	Total lack of discussion and points. Members not participating	No safety practiced at all, to note

## 100% of students will receive 80% or better on Lay-out & Fabrication

Steven Scott

1	90%
2	100%
3	100%
4	90%
5	100%
6	80%
7	100%
8	100%
9	100%
10	100%
11	100%
12	100%
13	90%
14	100%
15	100%
16	80%
17	100%
18	100%
19	90%
20	100%
21	80%
22	100%
23	100%
24	100%

Prentiss Mars

1	0%
2	85%
3	85%
4	85%
5	85%
6	90%
7	93%
8	90%
9	90%
10	80%
11	95%
12	95%
13	90%
14	95%
15	80%
16	90%
17	85%
18	0%
19	95%
20	90%
21	95%
22	85%

96% Of students received 80% or better.  
Target not Met

# Fayetteville Technical Community College

## Academic Program Review

Current Version Originally Published  
Spring 2014  
Last Revised: January 2, 2014

Proponent: Vice President for Academic and Student Services

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Available online at:  
[http://www.faytechcc.edu/institutional\\_effectiveness/handbookmanualplans.aspx](http://www.faytechcc.edu/institutional_effectiveness/handbookmanualplans.aspx)

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Fayetteville, North Carolina 28303-0236  
  
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Fayetteville Technical Community College is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award associate degrees, diplomas and certificates. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097 or call 404-679-4500 for questions about the accreditation of Fayetteville Technical Community College.

# FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE

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## **X-1 Mission**

The mission of Fayetteville Technical Community College (FTCC) is to serve our community as a learning-centered institution to build a globally competitive workforce supporting economic development. FTCC promotes the growth of the whole person in a caring environment that encourages strong ethical values, personal integrity, and a sense of responsibility to the needs of society.

## **X-2 Purpose of Review**

The purpose of program review is to strengthen department programs and increase department efficiencies and effectiveness. The review assesses and critically evaluates a program's stated outcomes and use of supporting resources to measure if the program is fulfilling its goals and adequately supports the College mission. The process necessitates documenting successful and unsuccessful efforts, identifying future needs, and verifying compliance with accreditation and college standards. The results of the review process will serve as a tool for continuous program improvements and will impact the institutional and program-level planning and budgeting activities. Program review becomes the baseline measurement of where the program is right now, where program managers would like for it to be in the next one to five years and planned achievement targets, qualitative and quantitative measurements, analysis of those measurements to report findings, and projected action plans and dates for reaching those future objectives. Program review is not intended to replace formal assessment activities in the WEAVE Assessment Management System and is intended to provide additional support and quantitative/qualitative evidence to further support the outcomes and findings housed in WEAVE.

## **X-3 Overview of Program Review Process**

1. The Program Review Process (PRP) begins with a Program Self-Study. The Department Chair organizes a team to conduct the Self-Study. The team must include the Department Chair (or Program Coordinator), all full time faculty members regularly teaching program courses and at least one part-time faculty member that has taught in the program for two or more semesters. All required historical statistical and numerical data will be provided by the Human Resources, Workforce Development, and Institutional Effectiveness (HR/WFD/IE) Office.
2. Teams shall use the current electronic version of the Program Review Self-Study template (Fill-in form P-1). Supplemental information and supporting

documentation is highly encouraged to adequately support the program review findings.

3. A full Self-Study shall be submitted to the Chief Academic Officer (CAO) every three (3) years with annual updates submitted by March 15 of the academic year during the subsequent two years. Timely submission and quality of analysis will be addressed as part of the Department Chair/Program Coordinator's annual performance appraisal.
4. Upon submission of the full 3-year program review, the departmental Program Review Team will meet to prepare a presentation of their self-assessment findings and recommendations to the CAO, AVP for Curriculum Programs, and the appropriate Academic Program Dean. The presentation must include the Self-Study Team's recommendations for continuous improvement and required program support to implement those improvements. These recommendations shall be considered during future budgets and personnel decisions. Department Chairs/Program Coordinators shall submit necessary budget decision packages (see fill-in forms E-5, E-6, E-28, E-15, F-2, I-11, and O-1).
5. The remainder of this publication reflects items that must be included in the program review and mirror the contents of the program review fill-in form (P-1).

## **X-3.1 Program Description, Policies, and Affiliations**

### **(Self-Study Team's assessment)**

#### **A. Provide a description of the program.**

The Welding Technology curriculum provides students with a sound understanding of the science, technology, and applications essential for successful employment in the welding and metal industry.

Instruction includes consumable and non-consumable electrode welding and cutting processes. Courses in math, blueprint reading, metallurgy, welding inspection, and destructive and non-destructive testing provide the student with industry-standard skills developed through classroom training and practical application.

Successful graduates of the Welding Technology curriculum may be employed as entry-level technicians in welding and metalworking industries. Career opportunities also exist in construction, manufacturing, fabrication, sales, quality control, supervision, and welding related self-employment.

**B. Discuss how the program supports the College in fulfilling its mission. List your program's mission, targeted future goals and objectives and how those goals/objectives are linked to the College's Institutional Goals and Strategies located in the FTCC Strategic Plan.**

The Welding Technology program will fulfill the college mission by continuing to educate students to the highest level possible by continuing our education through professional development, seminars, conferences, and by make necessary changes to the program to meet the industries needs.

The programs mission is to teach students a skill trade, soft skills and safe working habits that would allow them to achieve their personal goals to seek employment and have a promising career.

The programs future goal is to continue to provide students the ability to learn and train in a credential based curriculum to stay up with the demands of a constantly changing industry.

The programs objective is ensure all students are 100% competent and employable to industry standards.

Accomplishing the goals and objectives above will ensure us we are staying current with FTCC strategic plan.

**C. Beyond general College admission policies, list any special requirements pertaining to program admission (i.e. passing a background check, GPA requirement, etc.).**

The Welding Technologies program only offers a diploma or certificate so there are no prerequisites or special admissions requirements.

**D. List articulation or other such agreements that the program currently has with other community colleges or four-year institutions. Briefly describe the details of such agreements, including when the agreements were last reviewed, updated and approved by the partnering colleges.**

We currently have no articulation agreements with any other institutes.

**E. List specific linkages or partnerships the program has with local businesses, community or civic organizations, K-12 schools, etc. Briefly describe the nature of such partnerships. Include relevant contact information for partnering businesses, organizations, etc.**

**Industry:**

We recently established a partnership with Ruhl Tech Engineering in Spring Lake on May 15, 2014 and reads as follows.

We at Ruhl Tech Engineering are committed to working with FTCC and the Alliance in the establishment and the growth of its Advanced Manufacturing training program through helping to identify needed skills and competencies, and when possible, to provide internship, co-op, apprenticeship placements, and as the economy and growth allows, to hire qualified participants who complete the education and training programs.

Eaton Corporation agrees to partner with FTCC to develop and implement educational programming under the support of the US Department of Labor/ETA Trade Adjustment Assistance Community College and Career Training (TAACCCT) program. This agreement is contingent upon funding awarded by the agency. Industry partners have the right to extend partner agreements beyond the lifespan of the grant.

The overarching goals of this partnership are to:

1. Increase completion of degrees, certifications, certificates, diplomas, and other industry-recognized credentials that match the skills needed by employers for high-wage, high-skill employment or re-employment in growth sectors.
2. Introduce and replicate innovative and effective methods for designing and delivering instruction that address specific industry needs that lead to improved learning, completion, and other outcomes.
3. Demonstrate improved employment outcomes.

**Welding Supply Vendors:**

Tools allow students to purchase tools at a discounted price.

**Public Schools**

The program Faculty participates in career days and transportation to include, Skills USA, Construction Career Days, and the DOT Transportation Career Fair. Faculty visit local high schools and participates in open houses to discuss the welding careers.

## X-3.2 Program Curriculum

### (Self-Study Team's assessment)

**A. List the program's approved plan of study. Provide the suggested sequence of course numbers, titles, and credits.**

<b>FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE</b>					
<b>WELDING TECHNOLOGY (D50420)</b>					
Effective: Fall 2013					
Revised: 02/19/13					
Length: 3 Semesters					
Prerequisite: High School Diploma, Placement Test Equivalent					
Award: Diploma					
<b>Fall Semester 1</b>					
<b>Prefix No.</b>	<b>Title</b>	<b>Class</b>	<b>Lab</b>	<b>Clinical</b>	<b>Credit</b>
	ACA Elective	1	0	0	1
PSY118	Interpersonal Psychology	3	0	0	3
WLD110	Cutting Processes	1	3	0	2
WLD115	SMAW (Stick) Plate	2	9	0	5
WLD131	GTAW (Tig) Plate	2	6	0	4
WLD141	Symbols & Specifications	2	2	0	3
		-----	-----	-----	-----
	<b>Totals</b>	<b>10</b>	<b>18</b>	<b>0</b>	<b>18</b>
<b>Spring Semester 1</b>					
<b>Prefix No.</b>	<b>Title</b>	<b>Class</b>	<b>Lab</b>	<b>Clinical</b>	<b>Credit</b>
CIS113	Computer Basics	0	2	0	1
*ENG101	Applied Communications I	3	0	0	3
or					
ENG111	Expository Writing	3	0	0	3
WLD116	SMAW (Stick) Plate/Pipe	1	9	0	4
WLD121	GMAW (Mig) FCAW/Plate	2	6	0	4
WLD132	GTAW (Tig) Plate/Pipe	1	6	0	3
		-----	-----	-----	-----
	<b>Totals</b>	<b>8</b>	<b>21</b>	<b>0</b>	<b>15</b>
<b>Summer Semester 1</b>					
<b>Prefix No.</b>	<b>Title</b>	<b>Class</b>	<b>Lab</b>	<b>Clinical</b>	<b>Credit</b>
WLD151	Fabrication I	2	6	0	4
WLD261	Certification Practices	1	3	0	2
		-----	-----	-----	-----
	<b>Totals</b>	<b>3</b>	<b>9</b>	<b>0</b>	<b>6</b>
<b>TOTAL REQUIRED CREDITS..... 39</b>					
<b>Co-op Option: NA</b>					
<b>*ENG-101 will not transfer to Associate Degree program.</b>					

**B. State the specific student learning outcomes and graduation competencies of the program. Describe them in measurable terms including discussion of the department approved metrics/rubrics used to assess those competencies. Include references to the program's general education outcomes and career-related skills. For example, link program outcomes to the approved FTCC General Education Competencies located on the College's Human Resources, Workforce Development and Institutional Effectiveness website.**

- Evaluate potential hazards and apply procedures to maintain workplace safety.
  - Communicate effectively, both verbally and in writing, including illustrations.
  - Select and operate tools and equipment to support welding and related activities.
  - Perform Shielded Metal Arc Welding to a welding procedure specification (WPS).
  - Perform Gas Metal Arc Welding to a welding procedure specification (WPS).
  - Perform Flux Core Welding to a welding procedure specification (WPS).
  - Perform Gas Tungsten Arc Welding to a welding procedure specification (WPS).
  - Evaluate work quality and generate recommendations for continuous improvement.
  - Prioritize work assignments and use time management skills effectively.
  - Apply problem solving and decision making skills to overcome obstacles in completing objectives.
  - Demonstrate technical skills to the satisfaction of their employers
  - Be successfully employed in the field.
- See X-4 Appendices: For Rubrics for the Welding Technology

**C. How does the curriculum ensure that it is and/or remains relevant to students in the 21st century and the expected challenges and opportunities they will face upon graduation?**

To ensure the program stays relevant to students by teaching according to the American Welding Society standards and recommended practices which is:

Shield Metal Arc Welding  
Gas Tungsten Arc Welding  
Gas Metal Arc Welding  
Flux Core Arc Welding  
Oxy-Fuel Cutting Processes

We evaluate our students by using a rubric to ensure they are maintaining the required skills to progress to the next module.

We also continue to make necessary changes within the program such as training on material, tools, and equipment. Curriculum classes are also offered to ensure that the program is relevant to preparing students for the challenges and opportunities ahead of them.

**D. Describe the methods (formal and/or informal) used to ensure continued program currency. How the faculty is involved in the process to maintain program currency? How is the program advisory committee involved? How have outside consultants been used?**

We continue to make necessary changes within the program such as training in materials, tools, equipment and even curriculum classes to ensure the program maintains currency.

Faculty regularly participate in professional development, occupational requirements, advanced training to insure competency and program currency in line with local, state, and national trends.

The advisory committee is consistently called upon to provide assistance with equipment functionality and program relevancy.

As the welding industry continues to advance we constantly call upon the experience and expertise of outside sources to provide insight on current job requirements as well as industry demands for the job placement of our students post-graduation.

**E. What changes have been made to the curriculum program of study during the past three years? Why were these changes made? Did the changes result in anticipated outcomes originally driving the change?**

WLD-143 Welding Metallurgy was replaced with WLD-132 GTAW (TIG) Pipe.

During an advisory board committee meeting it was suggested we teach our students GTAW Pipe welding to give students a better chance for employment. So in the following weeks after the meeting I did some research regarding this suggestion. I found that most of the industries that hire pipe welders are looking for combo pipe welders, which is a combination of SMAW and GTAW welding. So I decided by adding WLD-132 GTAW Pipe welding to our curriculum, our students could experience two different pipe welding processes and it would also make our students more marketable to employers.

The changes have had an overwhelming result for the enrollment of the program.

**F. What curriculum changes are currently being considered? Why?**

We are reviewing the possibility of incorporating NCCER into the welding curriculum.

When searching job opportunities for welding curriculum students, I have found that most of the construction industries require NNCER credentials in order to be considered for employment. These credentials could also allow new employees to start at a higher salary range. NCCER credentials ensure employers that potential employees are trained to a standard in safety and a skilled craft trade which in return will allow an employee to start at journeyman level.

**G. List members of the program's advisory committee (if one exists). Include names, titles, and backgrounds, how long members have served, and any criteria used by the program leadership to select members.**

David Williams (Sales Rep and Technician) 2yrs  
Roger Reeder (Owner and Operator R & R Welding Inc.) 1yr  
Todd Hammel (Engineer Eaton Corp) 1yr  
Chris Mclamb (Sales Rep) 2yrs  
Tony Goforth (District Sales Rep) 2 yrs  
Kenneth Munn (Purolator) 2yrs  
Lynn Jordan (Hercules Steel) 1<sup>st</sup> yr  
Damion Farrington (Ruhl Tech) 1<sup>st</sup> yr  
Kenneth Short (Gill Security) 2yrs

**H. How often does the advisory committee meet? Describe how active the committee is as issues are discussed related to the program. Identify how meetings are conducted and how recommendations are put forward for consideration of approval. Attach a copy of the last advisory committee meeting minutes as supporting documentation.**

The program's advisory committee meets at least once a year and sometimes twice depending on member availability. The committee is active in providing suggestions regarding equipment, supplies, and the overall program curriculum. Discussions have lead to the purchase of the following Vrtex Virtual 360 welder and CNC plasma cutting tables.

See X-4 Appendices: For Committee Minutes

**I. What specific issues or concerns have been addressed by the advisory committee during the past three years? Describe any activities the department has used over the last 3 years suggested by the committee related to keeping the curriculum current. Relate how effective the committee is at communicating its concerns and how the advisory committee's effectiveness might be improved.**

Due to the increasing demand in the workforce for GTAW pipe welders and CNC operators, it was a big concern for our advisory committee board that we didn't offer GTAW (TIG) Pipe welding in our curriculum. Also the committee suggested we offer our students training on some type of CNC Plasma cutting system.

Since the concerns were expressed, we have implemented GTAW pipe welding into the curriculum and have purchase a CNC Plasma cutting system to train students. Overall the committee is satisfied with the quality of training we offer our students in the welding technology program.

Our committee members are from diverse backgrounds, which allow us to get quality and resourceful information from each one of them. Each committee member contacts me either by phone, email or stopping by to see what we are working on or give suggestions.

## **X-3.3 Faculty**

### **(Self-Study Team's assessment)**

- A. For the past three (3) academic years, provide the total number of sections, by course number, run by the program and the percentage of those that were taught by full-time faculty members.**

Welding Technology Core Courses Offered by Section (Fall 2010-Fall 2013)

	2010FA	2011SP	2011SU	2011FA	2012SP	2012SU	2012FA	2013SP	2013SU	2013FA
WLD-110	2	*	*	2	*	*	2	*	*	2
WLD-112	2	2	*****	2	2	*****	2	2	*****	2
WLD-115	2	*	*	2	*	*	2	*	*	2
WLD-116	**	2	**	**	2	**	**	2	**	**
WLD-121	**	1	**	**	1	**	**	1	**	**
WLD-131	*****	2	*****	*****	2	*****	1	1	*****	1
WLD-132	*****	*****	*****	*****	*****	*****	*****	1	**	**
WLD-141	1	*	*	1	*	*	1	*	*	1
WLD-143	1	*	*	1	****	****	****	****	****	****
WLD-151	*****	*****	*****	*****	*****	*****	*****	*****	1	***
WLD-261	***	***	1	***	***	1	***	***	1	***
WLD-262	***	***	1	***	***	1	****	****	****	****

\*Core Course only offered during the Fall term.

\*\*Core Course only offered during the Spring term.

\*\*\*Core Course only offered during the Summer semester.

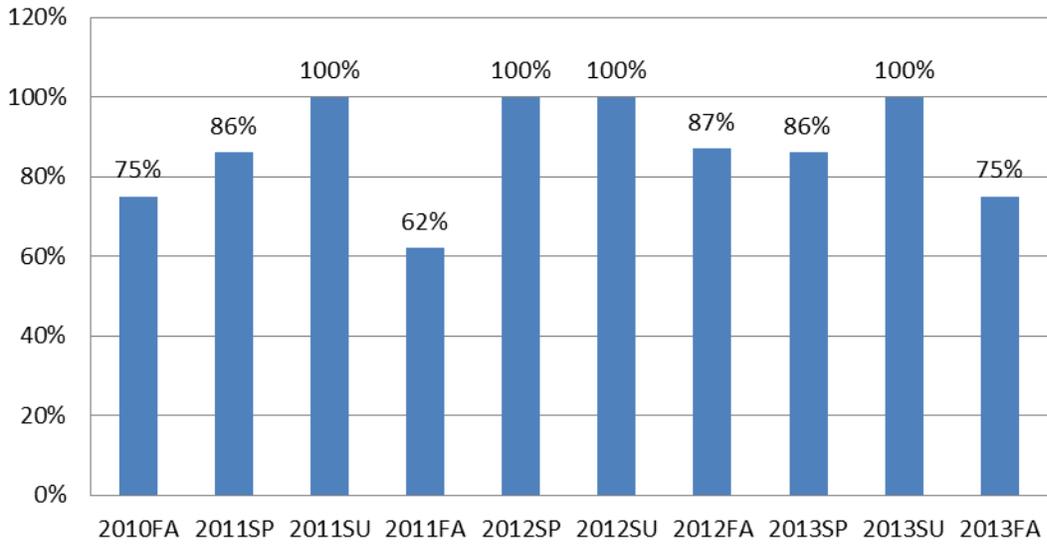
\*\*\*\*No longer offered as a Core Course.

\*\*\*\*\*Core Course not yet added.

\*\*\*\*\*Core Course offered based upon course sequencing and student education plans.

\*\*\*\*\*Core Course only offered during the Fall and Spring terms.

### Percentage of Welding Technology Core Courses Taught by Full-Time Faculty (Fall 2010-Fall 2013)



**B. Define the criteria used to determine faculty qualification to teach in the program. List any degree requirements, as well as relevant certification, licensure, and experience used to evaluate candidates during the hiring process.**

Minimum: All full time and adjunct employees must have a diploma in Welding Technology.

Preferred: Associate degree in Welding Technology and five years of teaching in welding technology or related field.

Certified welding Inspector (CWI) and Certified Welding Educator (CWE) a plus.

**C. Are all faculty (full-time and part-time) appropriately credentialed and qualified to teach in the program? Please explain and provide a list of faculty (including their rank, length of service, highest degree, areas of specialization, and relevant experience).**

Steven Scott, Program Coordinator, 6 years of service, AAS (General Occupational Technology) Present, Diploma (Welding Technology), Certified Welding Inspector (CWI), Certified Welding Educator (CWE), NCCER Instructor Certification. Specialty areas include SMAW, GTAW, GMAW, FCAW and Oxy Fuel Cutting Processes

Prentiss Mars III, Instructor, 3 years of service, AAS (A/C, Heating & Refrigeration Technology), AAS (Aerospace Ground Equipment Technology), Diploma (Welding Technology), NCCER Master Trainer Certification, NCCER Instructor Certification. Specialty areas include SMAW, GTAW, GMAW, FCAW and Oxy Fuel Cutting Processes

William Fulk, Instructor, Adjunct, 30 years of service, Diploma (Welding Technology). Specialty areas include SMAW, GTAW, GMAW, FCAW and Oxy Fuel Cutting Processes

**D. Are all faculty, including adjuncts, evaluated on a periodic basis? If so, what is the schedule for the process? Is the program up-to-date on the completion of faculty evaluation? Why or why not? What have been the general findings of the evaluations?**

All faculty members, full-time and part-time are evaluated on an annual basis in the spring of each semester year.

Full time faculty members are evaluated using the following processes.

- Employee Performance Appraisal
- Faculty Teaching Observation
- Professional Development
- Student Evaluations

Adjunct Instructors are evaluated using the following processes.

- Faculty Teaching Observation
- Student Evaluations

All instructors met or exceeded expectations.

**E. Describe full-time faculty participation in professional development opportunities. Explain how professional development contributes to the overall effectiveness of the program. Provide a list of faculty and their professional development experiences for the past three (3) years.**

Professional development keeps us current with new technology, training and techniques, which allow us to implement this into our program to ensure we are teaching today's demand to produce qualified welders for employment.

**Steven Scott:**

American Welding Society (CWI) and (CWE) seminar  
Hobart Welding Institute (Welding and Inspection) seminar  
American Welding Society (Aluminum Welding) conference  
NCCER Instructor Training  
Nondestructive Visual Training (VIT)  
STEM (Workshop)  
Fabtech

**Prentiss Mars:**

NCCER Instructor Training  
NCCER Master Trainer  
Skills USA Advisor  
Countless High School Career Day Presentations  
Institute for Community Leadership (ICL)  
Technology in the Classroom  
Blackboard Gradebook  
Community Colleges of NC Seminar  
Sexual Harassment Training  
Veteran Sensitivity Training  
NCMA Career Week  
DDI Training

**F. Describe full-time faculty research initiatives, conference or other presentations, and publishing ventures. Explain how faculty research projects contribute to the overall effectiveness of the program. Provide a list of faculty, their research projects, and presentations/publications.**

Steven Scott and Prentiss Mars are both members of the American Welding Society. With this membership we are provided literature and attend conferences about new innovations, technology, equipment and job opportunities.

We are also Skills USA Judges. We promote our program to all participants and assist our local high schools.

## **X-3.4 Resources and Support Services**

**(Self-Study Team's assessment)**

**A. Does the program use labs, unique classroom spaces such as clinical sites, or specialized equipment or supplies? If so, please provide details.**

We use welding labs with welding machines and welding stations that have been updated in the last 4 years. Our classrooms have overhead projectors with computers and also white boards. We use two pieces of specialized equipment one being the Vertex 360 virtual welder. This piece of equipment is used as a training tool to help students build and enhance their welding skills before entering a real welding lab. The virtual welder allows students to continuously weld without using a lot of costly consumables. It also provides the student with a detailed report and score so they know which areas of the weld needs to be improved before moving on. The CNC plasma cutter is also used for training students to prepare them for possible employment with companies' that requires CNC and AutoCAD along with welding experience. Another benefit of the CNC plasma is it cuts material requiring multiple holes, shapes, and sizes in a matter of minute verses a hand torch which could take hours to complete.

**B. Are the spaces and supplies mentioned above adequate in meeting the needs of the program and its students? Indicate the strengths and limitations of the resources provided. Please include recommendations for how their provision could be improved.**

The supplies and equipment are adequate in meeting the needs for our students and program. The strengths are the newly purchased equipment will allow our students too train at a high level before entering the labs which allow students to complete their welding task on schedule or even before.

Even though most of our equipment has been updated the last couple of years, the lab spaces continue to be a problem within our department. The program currently has more students enrolled than the labs will accommodate. More lab space will allow the students to work safely individually instead of sharing welding booths. We need more lab space to accommodate the growth of the program. We also need a better and up to date overhead lighting system in the welding labs.

**C. Does the program receive support services from the Library, Information Technology, Student Development, or any other offices or departments? Please list the service providers and their contributions to the program. Be sure to include other academic departments that contribute to the success of the program.**

We currently do not have a working relationship with library services.

We work closely with Counseling Services and Admissions to ensure new and current students are on the right curriculum path of their choice.

We also work very closely with recruiters to schedule appointments for students interested in our program, also to inquire about local public school career days and tours.

The program also works with the Financial Aid department to inquire about grants and scholarships for students.

**D. Are the support services mentioned above adequate in meeting the needs of the program and its students? Indicate the strengths and limitations of the services provided. Please include recommendations for how services could be improved.**

Admissions, Counseling and Financial Aid provide a vital service for the school, faculty and students ability to function each and every day, but they do not always provide adequate service for students and faculty. From past experience the students and faculty of welding technology have been given several different answers regarding students' current programs, transfer credits, financial aid, etc. On several occasions students and faculty have to speak with several different individuals in these areas to get the correct answer for any given situation. Often times, it has been frustrating to deal with these areas because of the response and complications we receive from them. I currently do not know exactly how to improve these areas, but it needs some major improvements.

The recruiting office provides an adequate service to our program. They always work professionally with faculty and students and provide us with correct information. This area always contacts us to inquire if are we interested in school tours, career days at local schools, and individual tours of the program for potential students.

**E. Does the program anticipate needing any non-routine budget allocations during the next three years? If so, please provide details. For example, will more faculty be required based on enrollment projections or will inadequate or outdated equipment or classroom space need to be replaced or improved?**

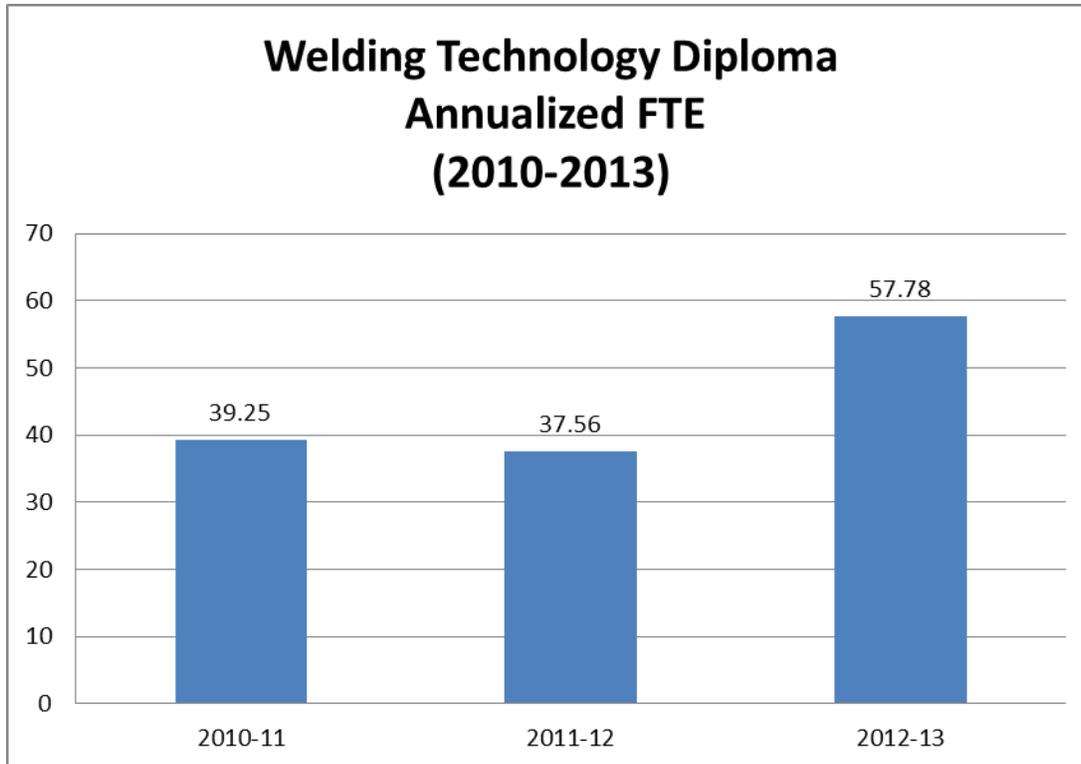
Yes, if the programs continues to grow in the next three years like it has in the last three we will need to add more sections, faculty, office space, classrooms, labs, and equipment to accommodate the growth we will not be able to accommodate more students without these resources. Classrooms and welding labs that we currently occupy are old and need some major renovations which include painting, better overhead lighting, electrical outlets, air outlets and refinishing the floors. The overhead lighting system in the welding labs is poor and doesn't provide enough adequate light and visibility for students and instructors to perform welding task correctly slowing the rate to which students are falling behind because of visibility issues. These renovations will not only improve the appearance and functional ability of the classrooms and labs, but will also provide our students with a safe work environment.

**F. Please describe your relationship with the FTCC Grants Department. Please describe all activities your department has engaged in to receive grants during the past three (3) years.**

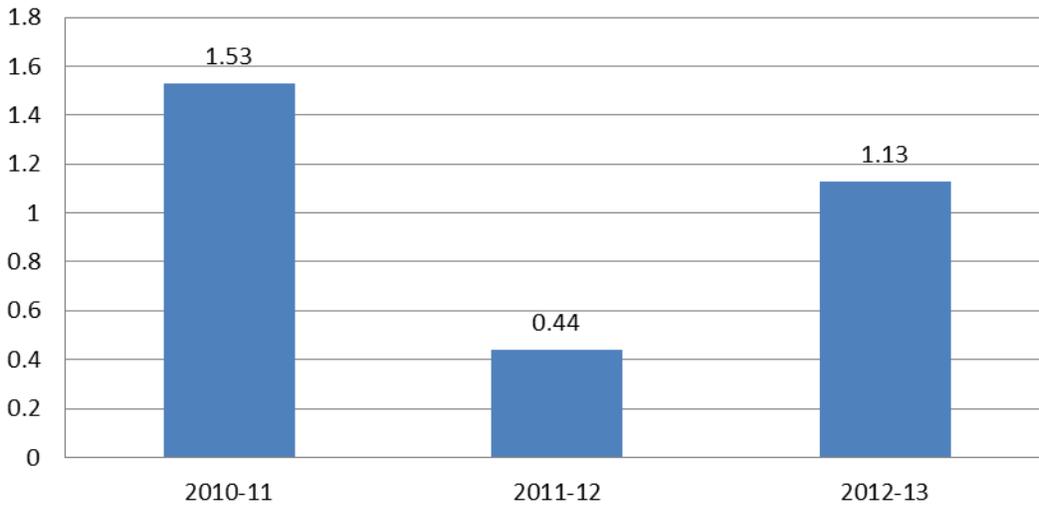
We are currently working with the grant department to find grants to purchase equipment such as a hydraulic shear for sheet metal. Also, we are searching for a grant to help pay for an instructor to oversee the American Welding Society (CWI) and (CWE) seminar.

## **X-3.5 Enrollment, Recruitment, and Outcomes Assessment**

**A. Analyze the number of FTE generated by courses in the program for the past three (3) academic years. What are the specific causes for upward and downward trend lines?**

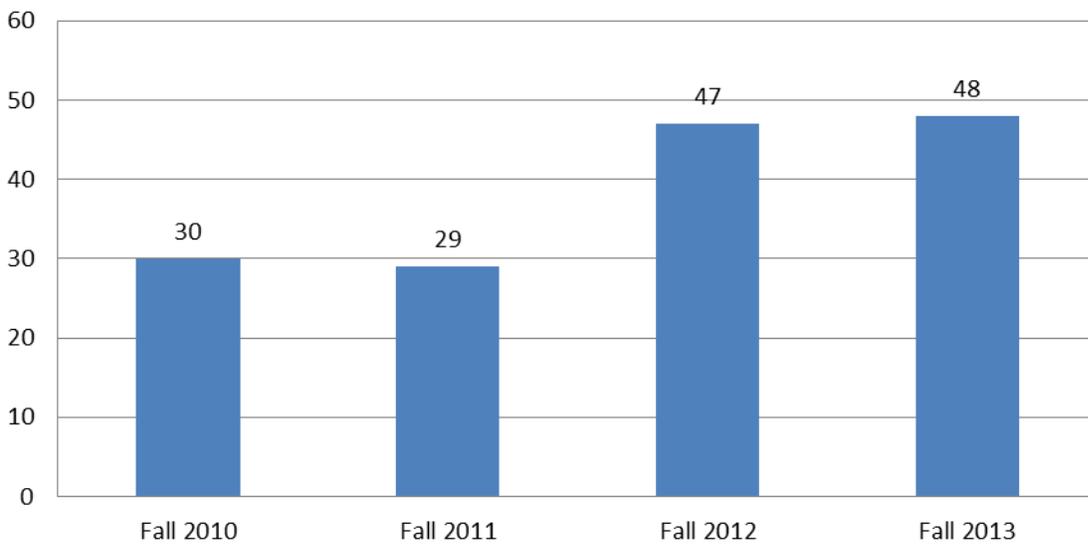


### Welding Technology Certificate Annualized FTE (2010-2013)

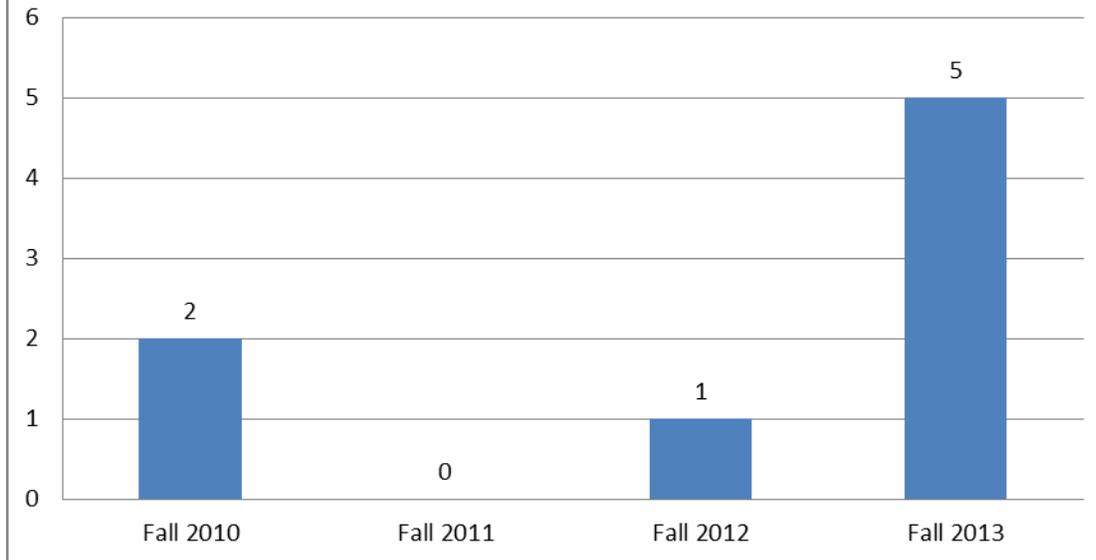


\*For the purposes of reporting, NCCCS does not break down individual certificate enrollment or FTE if related to a diploma or degree, they are combined together into one metric for certificates.

### Welding Technology Diploma Enrollment by Fall Term (Fall 2010-Fall 2013)



## Welding Technology Certificate Enrollment by Fall Term (Fall 2010-Fall 2013)



\*For the purposes of reporting, NCCCS does not break down individual certificate enrollment or FTE if related to a diploma or degree, they are combined together into one metric for certificates.

The gradual growth has a lot to do with the changes we have made to the program and a declining economy.

With the addition of GTAW pipe welding, our program is more enticing for current and future students to enroll. The gas, oil and nuclear industry require GTAW pipe training and experience which wasn't part of our program until Spring 2013 these are the higher paying jobs which welders are looking for.

With a decline in manufacturing jobs, potential students are looking for a skilled trade to improve their market ability and also to maximize their income without spending several years in school.

**B. Identify the program's primary competitors. Beyond general College-wide advertising, what concrete marketing strategies have been used by the Department to promote the program and attract students that might otherwise enroll elsewhere? What exceptional program characteristics could be leveraged to distinguish the program from competing programs (e.g., faculty credentials, unique course offerings, work-based or other innovative learning opportunities, and so on)? In what ways does the program faculty work with the admissions staff to recruit students for the program?**

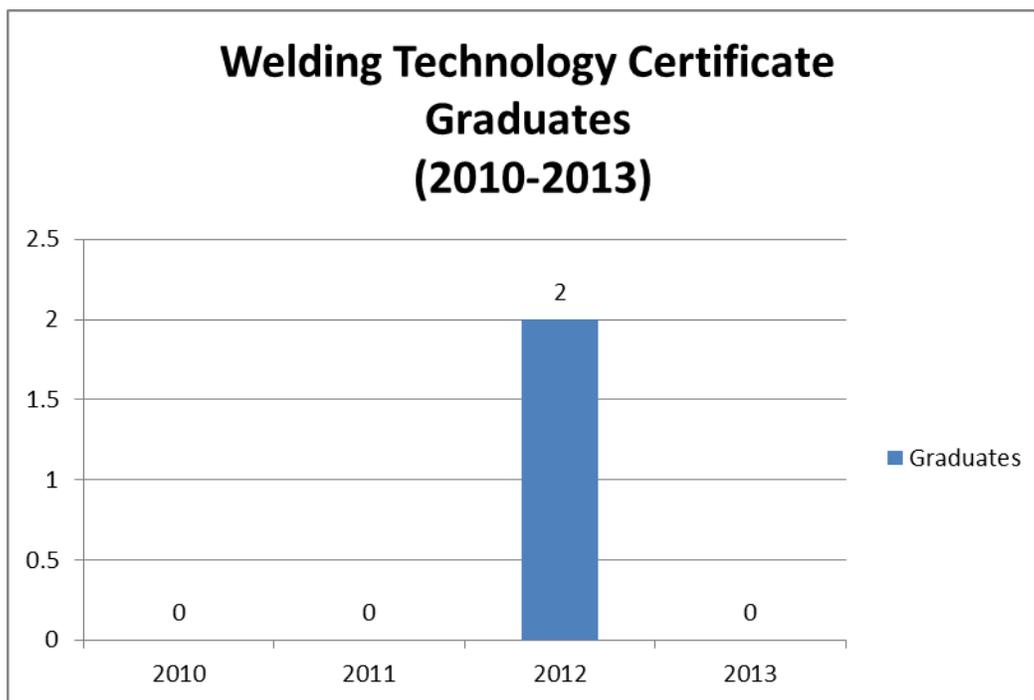
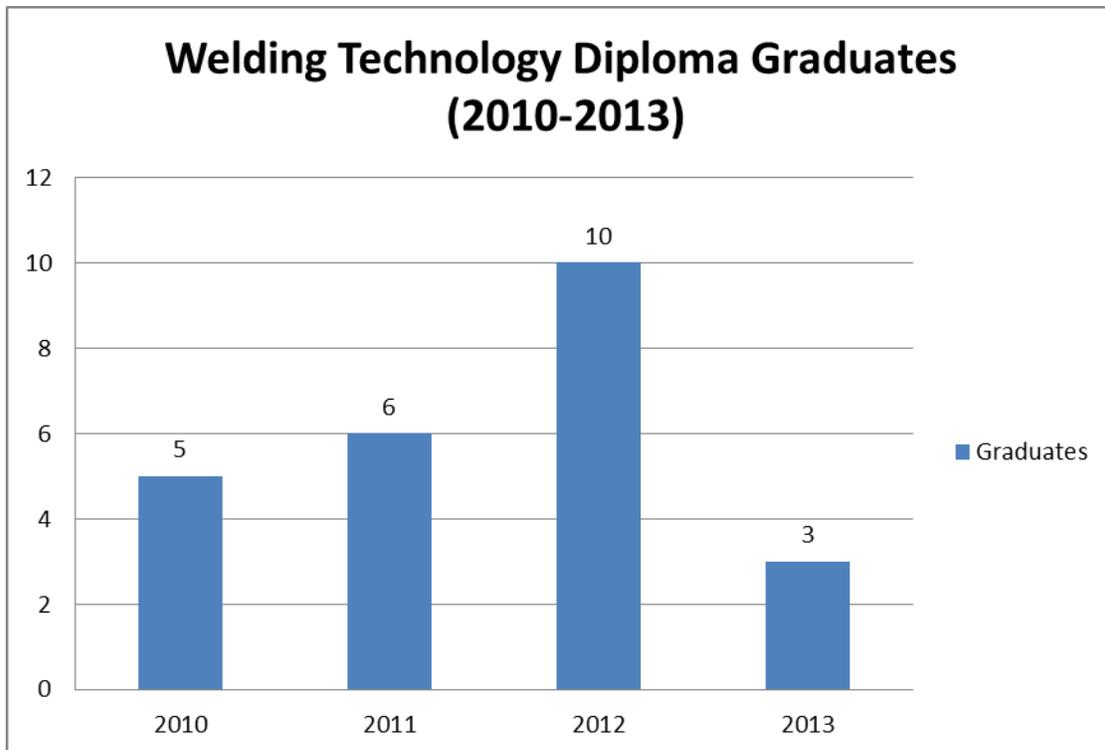
The programs primary competitor is Bladen Community College.

We are marketing the program by participating in public school career days, campus tours from public schools, FTCC open house and Department of Transportation career fair. We have also participated in a radio interview at a local station to promote our program along with some other programs.

By incorporated NCCER or AWS Sense in to our program would make us exceptional and entice students to enroll at FTCC since surrounding colleges doesn't offer these credentials which maximized the marketability for employment.

We have not worked with admissions, but have worked with recruiters to participate in program tours, local schools career days and to schedule appointments for individuals interested in the program.

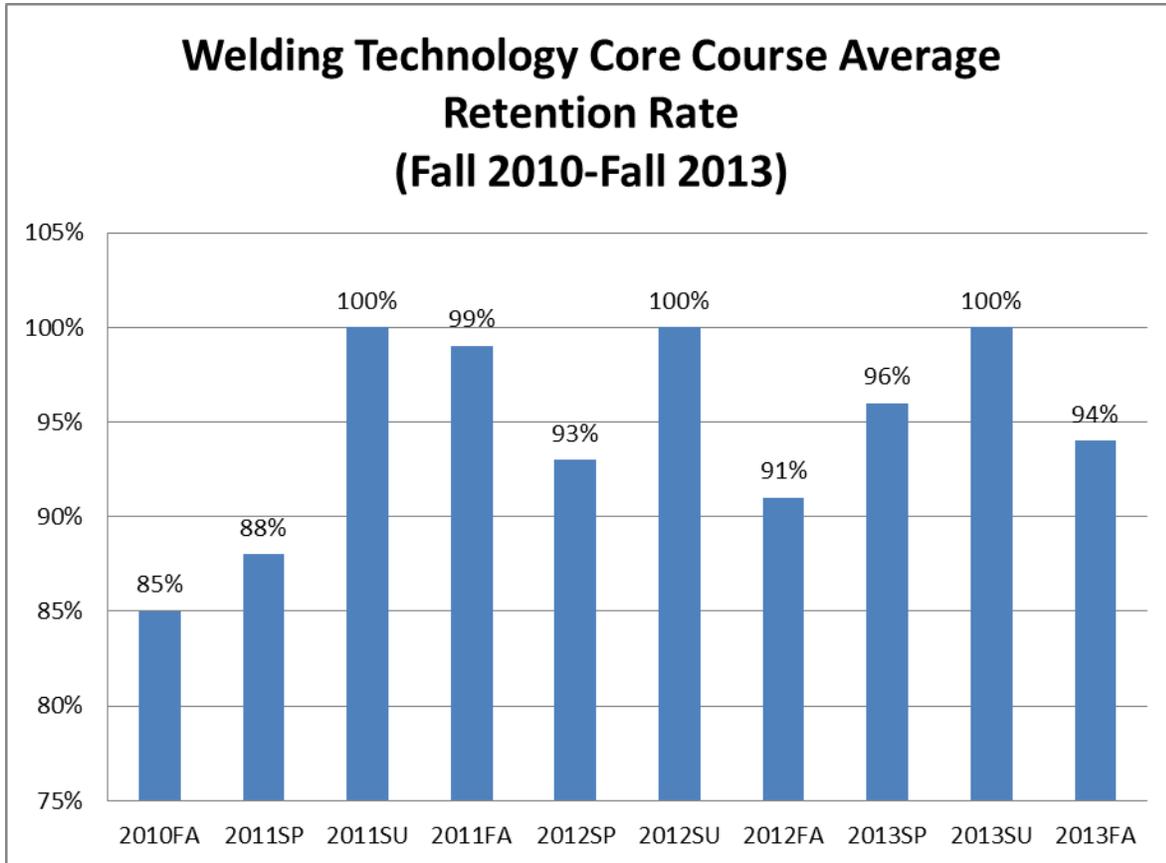
**C. Provide the number of students who graduated with a major or minor from the program in the past three years.**



\*For the purposes of reporting, NCCCS does not break down individual certificate graduates if related to a parent diploma or degree, they are combined together into one metric for certificates.



**D. Does the program have a retention plan? If so, please describe retention efforts. List all instructors with their retention rates for the past 3 Semesters. What efforts are made to address faculty members with a retention rate that is less than the program's overall retention rate and the overall FTCC retention rate? What efforts are made to capitalize on the successes of those instructors with a retention rate higher than the Program retention rate?**



Welding Technology Core Course Retention by Instructor (Fall 2010-Fall 2013)

	2010FA	2011SP	2011SU	2011FA	2012SP	2012SU	2012FA	2013SP	2013SU	2013FA
Fulk, William M.	88%	88%	**	**	**	**	94%	100%	**	100%
Bureau, Charles M.	82%	85%	***	***	***	***	***	***	***	***
Mars, Prentiss H.	*	*	*	100%	94%	**	96%	98%	**	96%
Urbina, Ricardo	*	*	*	*	*	*	*	*	*	87%
Scott, Steven R.	87%	89%	100%	98%	90%	100%	87%	93%	100%	91%

\*Not yet hired.

\*\*Did not teach Core Course.

\*\*\*Terminated employment.

Welding Technology uses the S-22 form for student retention. Once a student has reached two absences the faculty completes an S-22 form with the students current total absences and tardiest. Then we bring the student into our office to discuss his/ her absences with them. After the faulty member consultation with the student, we send the student with the S-22 form to talk with a counselor about their situation regarding absences. Before returning to class the student must have talked with the counselor and bring the form back with his/her signature and also the counselors statement and signature.

If the student continues to be tardy and absence we will repeat the process again at five absences. Once a student has reached the twenty percent mark for absences, it is at the instructor desertion to drop the student from the class.

When a student has missed two consecutive classes the faculty will make an attempt to contact the individual either by email or phone to inform them about their absences. If contact is made the faculty will ask if there is a situation keeping them from attending class and make sure they are aware of the school's attendance policy. If no contact is made we will repeat the process at four absences or until contact is made or the twenty percent mark is reached.

**E. Does the program lead to certification or licensure exams? If so, please list the exams. (Rates will be provided by the Data Management Technician for Reports in the office of the Director of Institutional Effectiveness at time the program review is released). What were the pass rates of graduates for the past three years? (Rates will be provided by the Data Management Technician for Reports in the Office of the Director of Institutional Effectiveness at time the program review is released).**

Yes, provided they weld and meet the requirements from an American Welding Society (AWS) and welding procedure specification (WPS). Upon completion of a welded coupon, visual inspection and successfully pass a guided bend test they will receive a welding qualification certification provided by an American Welding Society certified welding inspector.

**F. If the program prepares students for the labor force, provide an overview of the relevant local, state and national job market. Include potential careers and whether job growth is expected in those areas. Address how program outcomes relate to the skills employers seek in those areas.**

## State and National wages

Location	Pay Period	2013				
		10%	25%	Median	75%	90%
United States	Hourly	\$12.01	\$14.51	\$17.66	\$21.94	\$27.46
	Yearly	\$25,000	\$30,200	\$36,700	\$45,600	\$57,100
North Carolina	Hourly	\$11.89	\$14.64	\$17.65	\$21.74	\$26.03
	Yearly	\$24,700	\$30,500	\$36,700	\$45,200	\$54,100

## State and National Trends

United States	Employment		Percent Change	<a href="#">Projected Annual Job Openings</a> <sup>†</sup>
	2012	2022		
Welders, Cutters, Solderers, and Brazers	357,400	378,200	+6%	10,850
North Carolina	Employment		Percent Change	<a href="#">Projected Annual Job Openings</a> <sup>†</sup>
	2010	2020		
Welders, Cutters, Solderers, and Brazers	6,970	7,850	+13%	280

Potential Careers in Welding:  
 Structural Welding  
 Pipe Welding  
 Metal Fabricator  
 Welding Technicians  
 Boilermaker  
 Welding Inspector  
 Welding Sales Representative

The programs outcome teaches and improves the students welding skills over a period of time to ensure they are competent to perform quality welds in various welding processes and all positions during the course of the program.

**G. What is the process for assessing student outcomes and competencies (e.g., student portfolios, written or verbal comprehensive exams, senior or master's theses, review by faculty panel, or capstone projects)? Attach any relevant assessment templates.**

Students are assessed and tested according to a rubric on each welding process; welding position and technique to determine if that are competent in a specific task before moving to the next one.

The grading criteria is:

Excellent (93-100)

Good (85-92)

Fair (77-84)

Poor (0-76)

See X-4 Appendices for rubric.

**H. Detail the last formal assessment plan completed by the program. Summarize the results. With the goal of improving student learning outcomes, what changes to the program are/were suggested after analysis of the data outcomes, findings and action planning related to the assessment? How are these improvements being implemented? Please indicate how much progress has been made and what needs further attention.**

Tip: Some potential changes are different program admission requirements, incorporating internships or work-based learning experiences, varying instructional methods, enhancing student assessment strategies, integrating technology, better coordinating faculty efforts, and seeking external program accreditation.

A two-week project in WLD141 Symbols and Specification was used to assess the student's knowledge in blueprint reading, symbols and specifications. Why: This class includes a lab that provides students the opportunity to demonstrate their blueprint reading skills. A hands-on assessment is the most effective way to assess their skills. How: Students will be given a set of blueprints to include basic lines, views, welding symbols and specifications. Finally, they will be required to interpret the blueprints and correctly identify each welding symbol on the blueprints. A rubric will be used to evaluate the performance of each student. This assessment was conducted in the Fall 2013 semester and the results was reviewed by the instructors and Program Coordinator with 80% of the students receiving a 77% or better in interpreting basic elements of a drawing or sketch on a written examination.

A one-week (10 contact hours) project will be used to assess the student's ability to correctly use personal protective equipment (PPE) and power tools. Students will be required to write a report on a particular aspect of safety (writing skills... communication objective). WHY: The WLD116 class includes labs that provide students the opportunity to demonstrate their abilities to correctly use PPE and power tools. Emphasis is placed on identifying and preventing potential hazards. A hands-on assessment is the only way to successfully assess the outcome. How: Students will be given a variety of personal protective equipment and power tools to use during their performance of a project. Their performance will be assessed during this project with a rubric. This assessment was conducted in the Spring 2014 semester results will be reviewed by the instructors and Program Coordinator with 80% of the students receiving a 90% or better on this hands on assessment.

A five-hour project in WLD116 will be used to assess the student's ability to weld in the 1G, 2G, 5G and 6G positions. Why: The WLD116 class includes labs that provide students the opportunity to apply their welding skills in various positions. A hands-on assessment is the most effective way to assess their skills. How: Students will be given a Welding Procedure Specification (WPS) document. They will be required to weld to the WPS using the correct welding process, correct amperage setting, and the correct electrode size. Finally, the students will be required to weld in various positions using the WPS and to pass a guided bend test. A rubric will be used to evaluate the performance of each student. This assessment was conducted in the Spring 2014 semester and the results was reviewed by the instructors and Program Coordinator with

80% of the students receiving a 77% or higher or better on this hands on assessment.

After this assessments we have made some changes to where students work at self paced to ensure he/she are competent at that skill level before moving on to their next task or module.

The faculty of Welding Technology will continue to solicited advice from outside resources such as our advisory board, industry employer's, organizations, conference, seminars and literature to improve and enhance student learning outcomes, along with former student suggestions.

## **X-3.6 Constituency Satisfaction**

**(Self-Study Team's assessment)**

**A. What inquiries have been taken in the past three (3) years to determine the level of satisfaction from current students, alumnae, employers, and other relevant groups? Describe the data collected by the program and how it relates to issues such as learning outcomes, employability, and preparation for life after college.**

Welding Technology has collected data using surveys to give percentages in specific areas which include:

Alumni Graduate Survey shows, the satisfaction rates by percentages of graduated students from the Welding Diploma and Certificate Program. This survey is used to gauge student satisfaction pertaining to the instruction they received as well as the institutions success in meeting the student's needs and goals.

Job Placement Rates for recipients of the Welding Diploma and the Welding Certificate, this survey shows employed graduates working, continuing education and desiring not to work.

Employer Survey of Graduates of the Welding Diploma Program and Certificate Program, this survey shows employers of graduates responses based on the quality of work our graduates are performing.

Core Competencies Survey of Welding Diploma and Certificate Students, this survey shows how students feel and how they measured up to the Core Competencies.

**B. What were the results of these inquiries based upon the faculty review and analysis of the reported data? Please attach any relevant reports, survey analysis instruments, etc. How has the program responded to suggestions for improvement or findings of dissatisfaction? (Note: The Director of Institutional Effectiveness will provide available trend charts related to job placement rates, employer surveys, graduate surveys, and current student surveys and related at the time the program review is released).**

- 1) Alumni Graduate Survey:  
Diploma Program-The percentages in the Years of 2012 & 2013 was an average satisfaction of 95% overall. No record data for 2011.  
Certificate Program-The percentages in the Years of 2010 & 2011 was overall 100% satisfaction.
  
- 2) Job Placement Rates Survey:  
Certificate Program- 100% employment rate for graduates leaving the program in 2012 with an average salary at \$43,100  
  
Diploma Program- 100% employment rate for graduates leaving the program in with average salary at \$38,000 for 2010, \$45,000 for 2011 and no recorded salary for 2013. 2012 had a 66.7% employment rate with an average salary at \$26,000.
  
- 3) Employer Survey of Graduates:  
Employer's survey yielded a 100% satisfaction for 2010 & 2011 and no data recorded in 2012 & 2013.
  
- 4) Core Competency Satisfaction:  
Diploma had 100% for 2013 and no recorded data for the previous years.  
Certificate had no recorded data.

Welding Technology is considerably satisfied with the results of our program, considering our students have to seek employment outside of the surrounding counties and most of the time the state. I also think these areas can be improved by continuing to contact employer's regarding employment and job placement for our students and to inquire about the readiness of our students.

See X-4 Appendices for charts.

## **X-3.7 Appraisal and Direction for the Future**

### **A. What are the projected enrollments for this program for the next three years?**

I project that student enrollment for the next three years should be at maximum capacity for all sections offered in the welding technology program as it has been for the past two years.

According to onetonline.org and the US Department of Labor, the projected growth for Welders, Cutters and Fabricators from (2012-2022) is 3% to 7% in the U.S. and over 13% (2010-2020) in N.C with an average salary at \$22 an hour.

**B. Are there opportunities to expand this program (e.g., increase enrollments, add new concentrations, offer distance-learning courses, or increase assistance to graduates of the program with job placement support during program attendance and after graduation)? Please explain. What resources would be required to expand the program successfully?**

We are exploring the possibility of adding more sections to the program to increase enrollment and to reduce overcrowding in the labs we currently occupy.

We are not able to add new concentrations since we are a diploma program and the amount of credit hours required to complete the academic requirements for graduation in three semesters, unless we go to an Associate's degree.

We do not offer distance-learning courses due to the fact that welding technology is a 95% hands on program.

The faculty is currently working on ways to assist students with job placements during the program and post graduation. We have recently established an agreement with Ruhl Tech Engineering and Eaton Corporation to assist students with internships during the program and possible employment after graduation. We also contact other local employers to inquire about possible job placement for current and former students; also we introduce students to employer websites to search for job placement.

In order to expand the program we would need the following resources:

Faculty

Classrooms

Lab space

Equipment

**C. As you reflect on this program review, how would you describe the current health and vitality of the program? What are its strengths? What are some untapped opportunities? Are you optimistic about its future? Why?**

Currently, I consider the welding technology program to be very established and possibly stronger than it has ever been.

We offer students four different welding processes at a high level of quality instructions. The program strengths are pipe welding with the shielded metal arc and gas tungsten arc welding process which require a high level of skill set. Ninety percent of potential students inquire about pipe welding, mainly because of the high demand for pipe welders in the industry and also this process has a higher start salary range.

One untapped opportunity for our program is robotic welding which a lot of manufacturing welding jobs use because of the quality of weld it produces and its productivity. I am very optimistic about the future of the program, because of the high demand for qualified welders throughout the industry and also the possibility of incorporating NCCER into the program which we will give our students another credential that most major employers are requiring employees to have before the possibility of employment.

**D. As you reflect on the assessment of student learning outcomes, measures of constituency satisfaction, deliberations of faculty or advisory committees, or any other indicators of program efficiency and effectiveness, what areas require the most immediate attention? What are the program's existing weaknesses and possible threats? Please explain.**

The most immediate attention is job placement for graduates of the program.

Welding Technology is stronger now than it has been in years and the program doesn't have any notable weaknesses in the quality of instruction and courses that students receive here at FTCC. The only possible threats that may be seen at this time is, if enrollment continues to incline without offering more sections or expanding the program, we could possible lose potential students to neighboring community colleges.

**E. What specific initiatives are planned as a result of this program review? How will the program take advantage of the strengths and opportunities and also and redress weaknesses and threats?**

We will continue to give quality instruction and a well balanced curriculum with the end result of a strong learning environment for our students.

We will continue to attend professional development seminars, conferences, classes and make the necessary changes to the curriculum as the demands are constantly changing to satisfy the industries' employers.

By incorporating NCCER or AWS Sense into welding technology we will offer a credential that no other surrounding program currently offers and we will also satisfy the industries requirements for some employees to have credentials before employment.

Also I would like to incorporate robotic welding into the program this would not only enhance enrollment, but will also make our students highly marketable throughout the United States.

By making these changes to the Welding Technology Program here at FTCC; we will offer students a learning environment that very few colleges do offer.

**F. What is the anticipated timetable for completing these initiatives? Who will be involved? Who will take the leadership role during these initiatives?**

Anticipated timetable for NCCER or AWS Sense credential initiatives is Fall 2015

Robotic welding timetable is uncertain at this time due to limited resources.

Parties involved with full support:

Faculty of Welding Technology  
Dean of Engineering Technology  
Associate Vice President for Curriculum Programs  
Vice President for Curriculum Programs  
President

Leadership Role:

Program Coordinator

**G. Please provide any long term major resource planning.**

This review shows the growth and the potential growth of this program, so the long term resource plan is for the college and the program itself is to make the necessary changes as they arise to ensure the Welding Technology program stays relevant to current and future students in order for them to be successful and seek employment in this highly skilled trade.

**H. Conclusions.**

As the Program Coordinator for the past two years I have learned where this program was, where it is and where it's going. Since the two years I have been Program Coordinator I have made great strives to improve the structure and provide a balanced curriculum for the program and students here at FTCC. Prior to the two years this program was deprived of curriculum changes and was outdated due mostly to new demands of today's fast growing industry. After extensive research, advisory board suggestions, employers demands and support from FTCC we have made some much needed changes to the curriculum. During the course of this review I realized how this program is thriving with growth expanding to maximum capacity in the past two years. The faculty and myself gives this program the up most dedication to provide a sound learning environment to its students so they are able to pursue a career with a skilled traded linked back to FTCC.

We as educators have the responsibility to teach and educate students here at FTCC to standard and to the highest level of self satisfaction to make sure they achieve ever possible opportunity and goal a head of them in their chosen career. With that said I would hope for full support from the administration and the college in helping make Welding Technology the most elite program in the state of North Carolina.

## X-4 Appendices

### List of Attachments

Please indicate any supplemental materials submitted with this review document.

WELDING SAFETY RUBRIC					
STUDENT: DATE:				COURSE: TOTAL Score:	
ASPECT	POOR 0-76	FAIR 77-84	GOOD 85-92	EXCELLENT 93-100	SCORE
Safety glasses	Student does not understand the importance of eye protection and refuses to wear safety glasses while in welding lab.	Student understands the importance of eye protection, but doesn't wear safety glasses while in welding lab.	Student understands importance of eye protection, but doesn't constantly wear safety glasses continually while in welding lab.	Student understands the importance of eye protection constantly wears safety glasses while in the welding lab.	
Welding helmet/shield	Student does not understand the importance of wearing a welding shield.	Student does not always wear welding shield properly while arc welding and use correct lens shade.	Student always wears welding shield, but may occasionally use one that is not properly shaded for arc welding.	Student always wears welding shield and uses one that is properly shaded for arc welding.	
Welding Jacket, Welding gloves, and Proper footwear	Student does not wear or refuses to wear welding jacket, gloves and footwear.	Student occasionally won't wear welding jacket, gloves and footwear while arc welding.	Student occasionally forgets to wear welding jacket, gloves and footwear suitable for arc welding.	Student always wears welding jacket, gloves and footwear suitable while arc welding.	
Power tool and Hand tools. Before Use	Student doesn't understand the importance of inspecting tools for potential hazards before use.	Student uses tools without inspecting for potential hazards.	Student occasionally forgets to properly inspect tools for potential hazards.	Student makes sure tools are properly inspected and free from potential hazards before use	
Power tools and Hand tools. After Use	Student doesn't understand the importance of inspecting and clean tools before putting them away.	Student puts tools away without inspecting and cleaning them.	Student occasionally forgets to inspect and clean tools after each use.	Student inspects and cleans all tools and puts them away properly after use.	

**WELDING SYMBOLS RUBRIC**

**STUDENT:**  
**DATE:**

**COURSE:**  
**TOTAL SCORE:**

<b>ASPECT</b>	<b>POOR 0-76</b>	<b>FAIR 77-84</b>	<b>GOOD 85-92</b>	<b>EXCELLENT 93-100</b>	<b>SCORE</b>
<b>Understanding and Explaining Welding Symbol</b>	<b>Incapable</b>	<b>Not a clear understanding what the weld symbol is.</b>	<b>Clear understanding what the weld symbol is.</b>	<b>Very proficient and accurate explaining welding symbol.</b>	
<b>Determining Weld Size, Length and Depth to include Dimensions</b>	<b>Incapable</b>	<b>Not a clear understanding what the weld symbol is.</b>	<b>Clear understanding what the weld symbol is.</b>	<b>Very accurate determining dimensions.</b>	
<b>Understanding Lines and Views</b>	<b>Incapable</b>	<b>Not a clear understanding what lines and views are.</b>	<b>Clear understanding what lines and views are.</b>	<b>Very proficient and accurate determining various lines and views.</b>	
<b>Understanding Welding Prints</b>	<b>Incapable</b>	<b>Not a clear understanding reading prints.</b>	<b>Clear understanding reading prints.</b>	<b>Very proficient and accurate with reading prints.</b>	
<b>Written &amp; Oral Communication Skills</b>	<b>Confused</b>	<b>Incoherent, poor grammar, and sloppy.</b>	<b>Coherent, good grammar and neat.</b>	<b>Very professional.</b>	

**SMAW RUBRIC**

STUDENT:  
DATE:

COURSE:  
TOTAL SCORE:

ASPECT	POOR 0-76	FAIR 77-84	GOOD 85-92	Excellent 93-100	SCORE
<b>Appearance</b> 100 % Smooth with uniform dense ripples, doesn't show the bead traveling speed to fast or slow	Weld has been done to fast or to slow. Weld is not complete.	Weld shows definite areas of speeding up and slowing down. Ripples tend to be coarse.	Weld shows a constant speed with some blemishes that are minimal.	Weld shows a constant speed and uniformity throughout the entire length of the weld.	
<b>Face of bead:</b> 100 % Convex, free of voids and high spots, shows uniformity throughout the bead	Weld does not blend into one single bead.	Bead shows many high and low areas. Total lack of uniformity throughout the weld.	Bead is well rounded, mostly uniform over the length of the weld. Shows some high spots and low spots.	Has a nice rounded look. Is not overly high, or low. Bead covers a wide area of each weld.	
<b>Weld width and height:</b> 100 % Uniform width and thickness throughout the entire length of each weld	Weld is cut off in places, not uniform along the toe of weld. Shows undercut spots.	Not a uniform width throughout the weld. Width varies too much.	Bead maintains width and length. Shows some small blemishes along the toe of weld.	Bead is uniform width along the entire toe of the weld. Has a smooth appearance.	
<b>Edge of bead</b> 100 % Good fusion, no overlapping or undercutting	Metal is burned through. Weld has no connection to metal, excessive overlap and undercut.	Overlap and undercut are very visible. Weld lacks continuous strength	Moderately smooth blending. Undercutting and overlap are present. Strength of the weld is still strong.	Sides and edges are smooth blending into each weld. Undercutting is kept to a minimum. Weld does not overlap on surface.	
<b>Penetration</b> 100 % Complete without burn through	Weld floats on top of the metal and incomplete joint penetration.	Weld is uneven in depth, lacks penetration along weld length.	Weld penetrates deep, but does not resurface through the bottom of the joint.	Weld has complete joint penetration throughout entire weld.	

Welding Technology  
Advisory Board Meeting

Date: Dec 12, 2013, Time: 11:00am, Location: FTCC/LAH 149

Meeting Facilitator: Steven Scott, Program Coordinator

I. Members: Steven Scott, Prentiss Mars, David Williams, Chris Mclamb, Tony Goforth, Kenneth Short, Members Absence: Damion Farrington, Roger Reeder, Kenneth Munn,

II. Introductions and Lunch

III. Discussion of Old Business

A. Addition of WLD 132 GTAW (tig) Pipe

B. Addition of WLD 151 Fabrication 1

III. Open Discussion of New Business

A. Program Growth

B. Program Curriculum (Changes Fall 2013)

1. High School Certificate (Fall 2013)

C. Employment and Industry Needs (Certifications)

1. AWS Sense Program

2. NCEER

D. Training Needs (Equipment)

1. CNC Plasma Cutter

2. Virtual Reality Arc Welding Trainer

E. Next Meeting

Dec 2014, Time 11:00am

Location: Lafayette Hall, Room 149

F. Adjournment

<b>Welding Technology Degree Comparison Chart Alumni Graduate Survey</b>					
<b>QUESTIONS</b>	<b>2009 0 Respondents</b>	<b>2010 0 Respondents</b>	<b>2011 0 Respondents</b>	<b>2012 0 Respondents</b>	<b>2013 0 Respondents</b>
1. Quality of instruction in program area courses	*	*	*	*	*
2. Quality of instruction in other courses	*	*	*	*	*
3. Overall quality of academic program	*	*	*	*	*
4. Quality of Academic Advising (Faculty Academic Advising)	*	*	*	*	*
5. Quality of Admissions (entering College)	*	*	*	*	*
6. Quality of Registration Process	*	*	*	*	*
7. Quality of One Stop Shop	*	*	*	*	*
8. Quality of WebAdvisor	*	*	*	*	*
9. Counseling Information Desk – Lobby of Student Center	*	*	*	*	*
10. Quality of Financial Aid Services	*	*	*	*	*
11. Quality of Counseling Services	*	*	*	*	*
12. Quality of Student Activities	*	*	*	*	*
13. Quality of Campus Security	*	*	*	*	*
14. Quality of Cashiering Services (Administration Building)	*	*	*	*	*
15. Quality of Success Center Services and Resources	*	*	*	*	*
16. Quality of Career Center Services	*	*	*	*	*
17. Quality of Media Services	*	*	*	*	*
18. Quality of the Library	*	*	*	*	*
19. Quality of Internet Access/Computing Services	*	*	*	*	*
20. Quality of Blackboard	*	*	*	*	*

System for online class delivery					
21. Overall quality of the College	*	*	*	*	*
<b>Average Satisfaction Rate</b>	*	*	*	*	*

<b>Welding Technology Certificate Comparison Chart Employer Survey</b>					
QUESTIONS	2009 0 Respondents	2010 1 Respondents	2011 1 Respondents	2012 0 Respondents	2013 0 Respondents
1. Please mark the response that most closely reflects your overall opinion of FTCC graduates employed by your organization using the scale below: Very Satisfied – Satisfied – Dissatisfied – Very Dissatisfied – N/A					
a) Specific job-related knowledge	*	100%	100%	*	*
b) Specific job-related skills	*	100%	100%	*	*
c) Oral communication skills	*	100%	100%	*	*
d) Written communication skills	*	100%	100%	*	*
e) Problem solving skills	*	100%	100%	*	*

\*No respondents

## Welding Technology Diploma Core Competencies Questions

<b>QUESTIONS</b>	2009 0 Respondents	2010 0 Respondents	2011 0 Respondents	2012 0 Respondents	2013 0 Respondents
4a. I feel confident in my ability to communicate effectively in speaking, writing, reading and listening.	*	*	*	*	*
4b. I feel confident in my ability to think critically when analyzing problems and making decisions.	*	*	*	*	*
4c. My cultural awareness and socialization skills have prepared me for the changing global environment of the 21st century.	*	*	*	*	*
4d. I feel confident in my ability to use and process quantitative information.	*	*	*	*	*
4e. I consider myself to be computer literate.	*	*	*	*	*

\*No respondents

<b>Welding Technology Diploma Comparison Chart Alumni Graduate Survey</b>					
<b>QUESTIONS</b>	<b>2009 0 Respondents</b>	<b>2010 4 Respondents</b>	<b>2011 0 Respondents</b>	<b>2012 1 Respondents</b>	<b>2013 0 Respondents</b>
1. Quality of instruction in program area courses	*	100%	*	100%	*
2. Quality of instruction in other courses	*	75%	*	100%	*
3. Overall quality of academic program	*	100%	*	100%	*
4. Quality of Academic Advising (Faculty Academic Advising)	*	100%	*	100%	*
5. Quality of Admissions (entering College)	*	100%	*	100%	*
6. Quality of Registration Process	*	75%	*	100%	*
7. Quality of One Stop Shop	*	***	*	100%	*
8. Quality of WebAdvisor	*	100%	*	100%	*
9. Counseling Information Desk – Lobby of Student Center	*	100%	*	100%	*
10. Quality of Financial Aid Services	*	75%	*	100%	*
11. Quality of Counseling Services	*	75%	*	100%	*
12. Quality of Student Activities	*	100%	*	100%	*
13. Quality of Campus Security	*	100%	*	100%	*
14. Quality of Cashiering Services (Administration Building)	*	75%	*	100%	*
15. Quality of Success	*	75%	*	100%	*

Center Services and Resources					
16. Quality of Career Center Services	*	75%	*	100%	*
17. Quality of Media Services	*	100%	*	100%	*
18. Quality of the Library	*	100%	*	100%	*
19. Quality of Internet Access/Computing Services	*	100%	*	100%	*
20. Quality of Blackboard System for online class delivery	*	75%	*	100%	*
21. Overall quality of the College	*	100%	*	100%	*
<b>Average Satisfaction Rate</b>	*	<b>1800/20 = 90%</b>	*	<b>2100/20 = 100%</b>	*

\*No respondents

\*\*\*Questions were not asked

**Job Placement Rates for Welding Technology Certificate**

<b>Year</b>	<b># Graduates</b>	<b># Graduates Continuing Education</b>	<b># Graduates Not Seeking Employment</b>	<b># Graduates Unable to Locate</b>	<b># Graduates Available to Work</b>	<b># Graduates Working</b>	<b>% of Available Graduates Working</b>	<b># Available Graduates Who are <u>NOT</u> Employed but looking</b>	<b>% of Graduates Working in Cumberland County (<i>Hand counted surveys</i>)</b>	<b>% of Graduates Working Outside Cumberland County (<i>Hand counted surveys</i>)</b>	<b>% of Working Graduates in a Curriculum-Related Job (<i>Hand counted surveys</i>)</b>	<b>Salaries Reported (Curriculum-Related/ Full-time) (<i>Averages only those working in career field</i>)</b>	<b>SALARY AVERAGE (ANNUAL)</b>
<b>2009</b>	*	*	*	*	*	*	*	*	*	*	*	*	*
<b>2010</b>	*	*	*	*	*	*	*	*	*	*	*	*	*
<b>2011</b>	*	*	*	*	*	*	*	*	*	*	*	*	*
<b>2012</b>	2	0	0	1	1	1	100%	0	100%	0%	100%	1	\$43,100
<b>2013</b>	*	*	*	*	*	*	*	*	*	*	*	*	*

\*No respondents

### Welding Technology Certificate Comparison Chart Employer Survey

QUESTIONS	2009 0 Respondents	2010 1 Respondents	2011 1 Respondents	2012 0 Respondents	2013 0 Respondents
1. Please mark the response that most closely reflects your overall opinion of FTCC graduates employed by your organization using the scale below: Very Satisfied – Satisfied – Dissatisfied – Very Dissatisfied – N/A					
a) Specific job-related knowledge	*	100%	100%	*	*
b) Specific job-related skills	*	100%	100%	*	*
c) Oral communication skills	*	100%	100%	*	*
d) Written communication skills	*	100%	100%	*	*
e) Problem solving skills	*	100%	100%	*	*

f) Organization and planning	*	100%	100%	*	*
g) Quality of work	*	100%	100%	*	*
h) Overall job preparation	*	100%	100%	*	*
i) Socialization skills	*	100%	100%	*	*
j) Quantitative skills	*	100%	100%	*	*
k) Computer skills	*	100%	100%	*	*
2. Based on your experience with hiring FTCC graduates or students, would you consider hiring more?	*	100%	100%	*	*
<b>Average Satisfaction Rates</b>	*	<b>1200/12 = 100%</b>	<b>1200/12 = 100%</b>	*	*

\* No respondents.

## Welding Technology Certificate Core Competencies Questions

\*No respondents

<b>QUESTIONS</b>	2009 0 Respondents	2010 0 Respondents	2011 0 Respondents	2012 0 Respondents	2013 0 Respondents
4a. I feel confident in my ability to communicate effectively in speaking, writing, reading and listening.	*	*	*	*	*
4b. I feel confident in my ability to think critically when analyzing problems and making decisions.	*	*	*	*	*
4c. My cultural awareness and socialization skills have prepared me for the changing global environment of the 21st century.	*	*	*	*	*
4d. I feel confident in my ability to use and process quantitative information.	*	*	*	*	*
4e. I consider myself to be computer literate.	*	*	*	*	*

<b>Welding Technology Diploma Comparison Chart Alumni Graduate Survey</b>					
<b>QUESTIONS</b>	<b>2009 4 Respondents</b>	<b>2010 6 Respondents</b>	<b>2011 0 Respondents</b>	<b>2012 4 Respondents</b>	<b>2013 1 Respondents</b>
1. Quality of instruction in program area courses	100%	100%	*	100%	100%
2. Quality of instruction in other courses	100%	83.3%	*	100%	100%
3. Overall quality of academic program	100%	100%	*	100%	100%
4. Quality of Academic Advising (Faculty Academic Advising)	100%	100%	*	75%	100%
5. Quality of Admissions (entering College)	100%	100%	*	100%	100%
6. Quality of Registration Process	100%	83.3%	*	75%	100%
7. Quality of One Stop Shop	***	***	*	75%	100%
8. Quality of WebAdvisor	100%	100%	*	100%	100%
9. Counseling Information Desk – Lobby of Student Center	100%	100%	*	100%	100%
10. Quality of Financial Aid Services	66.7%	83.3%	*	100%	100%
11. Quality of Counseling Services	100%	83.3%	*	100%	100%
12. Quality of Student Activities	100%	100%	*	100%	N/A
13. Quality of Campus Security	75%	100%	*	100%	N/A
14. Quality of Cashiering Services (Administration Building)	100%	83.3%	*	100%	N/A
15. Quality of Success	100%	83.3%	*	100%	N/A

Center Services and Resources					
16. Quality of Career Center Services	100%	83.3%	*	100%	N/A
17. Quality of Media Services	100%	100%	*	100%	N/A
18. Quality of the Library	100%	100%	*	100%	N/A
19. Quality of Internet Access/Computing Services	100%	100%	*	100%	100%
20. Quality of Blackboard System for online class delivery	100%	83.3%	*	100%	100%
21. Overall quality of the College	100%	100%	*	100%	100%
<b>Average Satisfaction Rate</b>	1941.70/20 = 97.09%	1866.40/20 = 93.32%	*	2025/21 = 96.43%	1400/14 = 100%

\* No respondents  
\*\*\* Questions were not asked

**Job Placement Rates for Welding Technology Diploma**

<b>Year</b>	<b># Graduates</b>	<b># Graduates Continuing Education</b>	<b># Graduates Not Seeking Employment</b>	<b># Graduates Unable to Locate</b>	<b># Graduates Available to Work</b>	<b># Graduates Working</b>	<b>% of Available Graduates Working</b>	<b># Available Graduates Who are <u>NOT</u> Employed but looking</b>	<b>% of Graduates Working in Cumberland County (<i>Hand counted surveys</i>)</b>	<b>% of Graduates Working Outside Cumberland County (<i>Hand counted surveys</i>)</b>	<b>% of Working Graduates in a Curriculum-Related Job (<i>Hand counted surveys</i>)</b>	<b>Salaries Reported (Curriculum-Related/ Full-time) (<i>Averages only those working in career field</i>)</b>	<b>SALARY AVERAGE (ANNUAL)</b>
<b>2009</b>	*	*	*	*	*	*	*	*	*	*	*	*	*
<b>2010</b>	5	2	0	1	2	2	100%	0	50%	50%	50%	1	\$38,000
<b>2011</b>	6	2	0	2	2	2	100%	0	100%	0%	50%	1	\$45,000
<b>2012</b>	10	0	4	2	3	2	66.7%	1	50%	0%	100%	1	\$26,000
<b>2013</b>	3	2	0	0	1	1	100%	0	0%	100%	100%	0	***

\*No respondents

\*\*\*No salary reported

### Welding Technology Diploma Comparison Chart Employer Survey

QUESTIONS	2009 0 Respondents	2010 1 Respondents	2011 1 Respondents	2012 0 Respondents	2013 0 Respondents
1. Please mark the response that most closely reflects your overall opinion of FTCC graduates employed by your organization using the scale below: Very Satisfied – Satisfied – Dissatisfied – Very Dissatisfied – N/A					
a) Specific job-related knowledge	*	100%	100%	*	*
b) Specific job-related skills	*	100%	100%	*	*
c) Oral communication skills	*	100%	100%	*	*
d) Written communication skills	*	100%	100%	*	*
e) Problem solving skills	*	100%	100%	*	*

f) Organization and planning	*	100%	100%	*	*
g) Quality of work	*	100%	100%	*	*
h) Overall job preparation	*	100%	100%	*	*
i) Socialization skills	*	100%	100%	*	*
j) Quantitative skills	*	100%	100%	*	*
k) Computer skills	*	100%	100%	*	*
2. Based on your experience with hiring FTCC graduates or students, would you consider hiring more?	*	100%	100%	*	*
<b>Average Satisfaction Rates</b>	*	<b>1200/12 = 100%</b>	<b>1200/12 = 100%</b>	*	*

\* No respondents.

## Welding Technology Diploma Core Competencies Questions

<b>QUESTIONS</b>	2009 0 Respondents	2010 0 Respondents	2011 0 Respondents	2012 0 Respondents	2013 1 Respondents
4a. I feel confident in my ability to communicate effectively in speaking, writing, reading and listening.	*	*	*	*	100%
4b. I feel confident in my ability to think critically when analyzing problems and making decisions.	*	*	*	*	100%
4c. My cultural awareness and socialization skills have prepared me for the changing global environment of the 21st century.	*	*	*	*	100%
4d. I feel confident in my ability to use and process quantitative information.	*	*	*	*	100%
4e. I consider myself to be computer literate.	*	*	*	*	100%

\*No respondents

**Welding Technology  
Advisory Board Committee  
Jan 26, 2016  
Lafayette Hall 149  
5:00 P.M.**

**AGENDA**

- I. **Facilitator:** Steven Scott
- II. **Members Present:** Todd Hammel, Chris Mclamb, Steven Scott (F)
- III. **Members Absent:** David Williams, Harmony Erbaugh, Buddy Bowen, Damion Farrington, Prentiss Mars (F)
- IV. **Discussion Old Business**
  - a. Enrollment
  - b. Graduates Employed
  - c. Career Fair
- V. **New Business**
  - a. **Career Fair**
  - b. **Educational Robotic Welding Cell**
  - c. **Instructor Training & License**
    - a. Prentiss Mars (CWI & CWE)
  - d. **Program/Partnerships Opportunities**
    - a. Explore Internship and Partnership Opportunities
  - e. **Economic Forecast and Job Outlook**
    - a. Bureau of Labor Statistics
    - b. Gas & Oil Industry
    - c. Welding Manufacturing
  - f. **Job placement report for graduates**
  - g. **Input or Recommendation from Committee Members**
- VI. **Next Meeting will be scheduled via email**
- VII. **Adjournment**

## Extract from the 2016 Graduate Survey-IE Office

Please indicate your level of agreement with the following statements:

a. I feel confident in my ability to communicate effectively in speaking, writing, reading and listening.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	441	70.2	70.8	70.8
	Agree	177	28.2	28.4	99.2
	Disagree	2	.3	.3	99.5
	Strongly Disagree	3	.5	.5	100.0
	Total	623	99.2	100.0	
Missing	System	5	.8		
Total		628	100.0		

b. I feel confident in my ability to think critically when analyzing problems and making decisions.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	442	70.4	71.4	71.4
	Agree	173	27.5	27.9	99.3
	Disagree	1	.2	.2	99.5
	Strongly Disagree	3	.5	.5	100.0
	Total	619	98.6	100.0	
Missing	Don't Know	2	.3		
	System	7	1.1		
	Total	9	1.4		
Total		328	100.0		

**c. My cultural awareness and socialization skills have prepared me for the changing global environment of the 21st century.**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	423	67.4	69.0	69.0
	Agree	181	28.8	29.5	98.5
	Disagree	5	.8	.8	99.3
	Strongly Disagree	4	.6	.7	100.0
	Total	613	97.6	100.0	
Missing	Don't Know	9	1.4		
	System	6	1.0		
	Total	15	2.4		
Total		628	100.0		

**d. I feel confident in my ability to use and process quantitative information.**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	415	66.1	67.2	67.2
	Agree	198	31.5	32.0	99.2
	Disagree	3	.5	.5	99.7
	Strongly Disagree	2	.3	.3	100.0
	Total	618	98.4	100.0	
Missing	Don't Know	3	.5		
	System	7	1.1		
	Total	10	1.6		
Total		628	100.0		

**e. I consider myself to be computer literate.**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	407	64.8	66.0	66.0
	Agree	191	30.4	31.0	96.9
	Disagree	13	2.1	2.1	99.0
	Strongly Disagree	6	1.0	1.0	100.0
	Total	617	98.2	100.0	
Missing	Don't Know	1	.2		
	System	10	1.6		
	Total	11	1.8		
Total		628	100.0		

# *Fayetteville Technical Community College*

## **STRATEGIC PLAN 2015-2020**



**“Serve our community as a learning-centered institution to build a globally competitive workforce supporting economic development”**

**P.O. Box 35236  
2201 Hull Road  
Fayetteville, North Carolina 28303-0236  
[www.faytechcc.edu](http://www.faytechcc.edu)**



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## FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE

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P.O. BOX 35236 • FAYETTEVILLE, NORTH CAROLINA 28303-0236

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September 21, 2015

Dear Friends of Fayetteville Technical Community College:

Fayetteville Technical Community College (FTCC) weaves a multifaceted pattern of positive influence that is far reaching and widely encompassing throughout the greater communities we serve. FTCC's uniqueness is reflected in a number of ways ranging from the educational perspective that opens its doors to all who seek hope, opportunity, and a brighter tomorrow via intellectual growth and job success by offering meaningful educational opportunities which changes lives for the better. Manifestation of this goal is reflected in the most recent college commencement in which we graduated our largest class of 1,985 students who launched their lives to more positive outcomes and possibilities.

FTCC is one of the largest employers in Cumberland County, which provides an outstanding place to work in an atmosphere that bolsters beauty, diversity, encouragement, and respect. In addition, FTCC's graduates and staff engage in our communities, across the nation, and internationally by contributing their skills, talents, volunteer time, and leadership skills through many avenues which fuels economic prosperity and service. The spiraling effect of all these combined characteristics is impressive and certainly something to celebrate. However, in our quest to resist the status quo and to continue to pursue greater excellence, we re-examine ourselves and how we serve others, setting our sights for more impressive achievement and higher benchmarks for successful service.

The 2015-2020 Strategic Plan centers on institutional goals which universally revolve around four primary areas: establishment of measurable goals in response to meeting student and community needs; establishment of a culture reflecting quality customer service; sustainability of excellent fiscal responsibility, accountability, and stability; and continued support of economic development through a greater focus on workforce preparedness. We approach these institutional goals with passion, enthusiasm, and expectation of a greater awareness of ourselves as a structured unit—openly recognizing our strengths and shortcomings—and responding by developing, implementing, and monitoring our executions to measure results.

The outcome of our efforts will, in turn, result in greater service to our students and others whom we serve through our College mission. Embracing teamwork with positive interactions which build on the strengths of each individual's talents will position us to achieve success and will enhance the educational experience to make it more meaningful and productive.

I welcome you to the next phase of our journey and thank you for your continued enthusiasm, support and engagement!

Sincerely,

A handwritten signature in cursive script, reading "J. Larry Keen".

J. Larry Keen, Ed.D.  
President

**FTCC Institutional Goals  
2015-2020**

- 1. Respond to student and community needs through measurable goals**
- 2. Establish a culture of quality customer service**
- 3. Ensure fiscal responsibility, accountability and financial stability**
- 4. Focus on workforce preparedness to support economic development**

**Institutional Goals were originally adopted by the FTCC Board of Trustees, on September 16, 2013 and reaffirmed the goals on September 21, 2015.**

**Institutional Goal: 1 Respond to student and community needs through measurable goals**

1. FTCC will increase graduation rates to 25% by 2018.
2. Increase headcount enrollment by 3% annually.
3. Increase gainful employment (employment in field of study) of students.
4. Meet or exceed the NCCCS Performance Measures goals.
5. Achieve 90% satisfaction rate on all surveys and course evaluations.

**Strategies:**

- Promote student successes and College Best Practices with a targeted goal of 50+ information releases and/or presentations annually (2)
- Use the Educational TV channel to provide timely information/programming to the community (2)
- Partner with community organizations to connect students to potential employers (3)
- Engage stakeholders to develop and expand College funding opportunities melding community and student needs. (1, 2, 3)
- Align the FTCC Foundation, Inc. goals and outcomes to support the College. (2, 3)
- Reduce the number of students testing into developmental classes. (1, 2)
- Administer student course evaluations to assess the satisfaction rates for course and programs of study. (1, 5,)
- Administer an annual non-returning student survey to assess the reasons for not continuing studies at FTCC. (1, 5,)
- Administer an annual graduate survey to assess satisfaction rates for courses and programs of study. (1, 5,)
- Improve assessment plans with documented evidence of outcomes. (1)
- Create and administer a professional development program to support academic quality for student success. (1-5)

- Promote the use of research such as Economic Modeling Specialists International (EMSI) studies to identify and benchmark successes at FTCC as well as other colleges that could be replicated. (1-5)
- Maintain memberships in relevant professional organizations and groups. (1-5)
- Promote faculty-staff engagement in public relations, community service, and College activities. (1, 2, 3, 5)
- Encourage faculty and staff to complete higher levels of relevant education and/or degree completion. (1, 2)
- Encourage Return to Industry Training. (1, 2)
- 100% of new instructors will successfully complete the Excellence in Teaching course prior to teaching their first class. (1, 5)
- More clearly define and articulate expectations for the role of instructional leaders. (1, 5)
- Create an effective Instructional Leaders course. (1, 5)
- Standardize blackboard shells to ensure more active learning for students. (1, 5)
- Increase Work-Based Learning and intern work opportunities for students (1, 2, 3)
- Provide a safe and secure learning environment. (5)

## **Institutional Goal: 2 Establish a culture of quality customer service**

1. Success of our students is our number one priority
2. Competition for services requires that we maintain the highest standards and responsiveness to the needs of our customers and stakeholders.
3. Create a welcoming and service oriented culture delivering support with minimal referrals.
4. Achieve 90% satisfaction rate on customer service survey.
5. Consistency of service and information will be maintained across the College.

### **Strategies:**

- Explore the development of an Excellence in Service (EIS) course. (1-5)
- Ensure that faculty and staff understand their individual responsibility to provide high quality customer service. (1-5)
- Provide well maintained and safe campuses demonstrating our pride in FTCC. (4)
- Resolve customer needs with minimal referral to others. (3)
- Answer the phone within 3 rings. (1-5)
- Educate all employees on functions and activities of College departments to minimize referrals. (2)
- Incorporate advanced technology that can help to eliminate or reduce on-campus visits and lines. (1, 4, 5)
- Triage lines to move customers to appropriate College locations quickly. (3, 4)
- Ensure signage is visible, adequate and accurate directing visitors to correct locations. (3, 4)
- Require all hiring managers to include one or more interview questions focused on customer service. (1-5)
- Create and implement incentive program to recognize employees that excel in providing customer service. (1-5)
- Conduct annual surveys of faculty, staff and students to provide data related to the College climate and customer service/support. (4)

- Create and deliver professional development classes to educate employees on quality customer services standards and expectations. (1-5)
- Continue to refine the two FTCC website portals. One website is focused for students, ensuring it remains user-friendly and focused to student needs while the other website is focused for internal faculty/staff use and required mandatory reporting elements under the Higher Education Act and other local, State and Federal legislation requirements. (1, 3)
- Promote equal employment opportunities in all aspects of the hiring process. Ensure one DDI targeted selection STAR criteria evaluates customer service orientation of all prospective candidates. (2, 3, 5)
- Include quality customer service and support as a measured item on annual performance appraisals. (5)
- Provide adequate training to employees to ensure the Continuity of Operations (Safety) and Emergency Preparedness Plan can be implemented quickly and accurately in times of emergency. (2)

**Institutional Goal: 3 Ensure fiscal responsibility, accountability and financial stability**

1. Plan and prepare annual budgets that enable the College to be responsive to community needs.
2. Maximize strained resources by enhancing productivity and accountability.
3. Focus resources on the core mission of teaching by strategically budgeting funds in areas that result in the greatest return on investments.
4. Streamline operations with a focus on efficiencies.
5. Monitor current spending and forecast future funding requirements to sustain financial stability.
6. Institute a data-driven decision process based through assessment of needs.

**Strategies:**

- Submit accurate budget decision packages in a timely manner to support division operations and support an institutional goal related to the request for funding. Initial decision packages will be submitted annually in May. (1-6)
- Ensure appropriate communication among affected areas. (1, 2, 4)
- Monitor monthly budget reports and submit a budget reconciliation mid-year. (2, 4, 5, 6)
- Consistently review the salary plan and hiring scale to keep salaries for staff and faculty comparable to market. (1-6)
- Communicate with all levels of the College to stay abreast of the future needs of the community and forecast future funding needed to meet these needs. (1-6)
- Standardize technology across the campus to reduce maintenance cost and maximize replacement parts. (2, 4)
- Cascade technology when replacements are made to reduce cost. (2, 4)
- Communicate the College's needs to the FTCC Foundation. (2)
- Create an effective grant and external funding program. (3)

**Institutional Goal: 4 Focus on workforce preparedness to support economic development**

1. Strengthen economic development in the College's service area.
2. Establish an effective job placement office.
3. Expand veterans support services.
4. Analyze Academic Programs to modify program/course offerings to meet employer needs.

**Strategies:**

- Align curriculum and continuing education programs of instruction/course offerings with reported needs of employers, as reflected in the annual employer survey. (4)
- Expand student use of Career Coach and Internship.com during the admissions, registration and advising processes. (1)
- Analyze Academic Advisory Committee data, retention and graduation trends by program, GAP studies, Labor Market information by program area, and annual employer surveys. (1-5)
- Enhance outreach to business/industry to understand and define existing and future workforce training needs. (1)
- Expand the use of customized industry training funds. (1, 3, 4)
- Engage with the Economic Alliance in the recruitment, expansion and retention of businesses. (1, 4)
- Seek additional funding for the NC Military Business Center to better engage businesses winning government contracts and providing post-contract assistance. (1, 3)
- Create career pathways for students and graduates to engage with employers to include defense contractors. (2, 3)
- Promote and solicit scholarship and funding opportunities that parallel employer needs and student curriculum. (1-4)
- Continue enhancements to support services and academic programs to meet the changing needs of the military and veteran students. (3)

*Approved FTCC Board of Trustees on September 21, 2015*