



WISCONSIN  
INDIANHEAD  
TECHNICAL  
COLLEGE

# **INDUSTRIAL MAINTENANCE TECHNICIAN**

**Wisconsin Indianhead Technical College  
32-462-1 Technical Diploma**

**2013  
Program Review  
and  
Improvement Plan**

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# Industrial Maintenance Technician

32-462-1 Technical Diploma

Financial Aid Eligible

## Program Overview

The Industrial Maintenance Technician program will give the student practical, "hands-on" experience in welding, hydraulics, electricity, mechanical maintenance, maintenance machining, and PLC (programmable logic controller) equipment maintenance. Opportunities for advancement increase with further education.

Campus:

Superior



## Admission Requirements

Students in this program must:

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

## Student Profile

Industrial Maintenance Technician students should:

- Be able to apply mechanical principles and repair techniques
- Be able to use good judgment
- Be able to follow procedures carefully
- Be able to handle equipment skillfully
- Be able to assume responsibility
- Be able to work under pressure
- Be able to lift 50 pounds
- Be interested in mechanics
- Enjoy working with their hands
- Be able to organize tasks
- Be able to work well with others
- Be able to accept constructive criticism
- Be able to work well under supervision

## Preparation for Admission

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

- General mathematics
- Algebra
- Machine Shop
- Welding
- Science/Physics and Chemistry
- English/Communications
- Human Relations

## Program Outcomes

Employers will expect Industrial Maintenance Technician graduates to be able to:

- Install, maintain, and troubleshoot industrial mechanical drive systems
- Install, maintain, and troubleshoot fluid power systems
- Install, maintain, and troubleshoot pumping systems
- Install, maintain, and troubleshoot industrial electrical control systems
- Install, program, and troubleshoot process logic control systems
- Install, fabricate, and repair industrial equipment

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

## Career Outlook

Maintenance mechanics are in demand in all types of industries. Pay rates for people in the equipment maintenance field are among the highest of all trades. Typical careers available after graduation include:

- Maintenance Technician Assistant
- Maintenance Technician Foreperson
- Maintenance Machinist
- Maintenance Technician
- Maintenance Welding

Graduates may also enter the trades of Machine Repair, Machine Rebuilder, and Millwright. Graduates may advance to such positions as Maintenance Leadperson, Maintenance or Millwright Apprentice, Foreperson, or Superintendent.

## Curriculum

Number	Course Title	Credits
<b>Occupational Specific Courses</b>		
32414340	Basic Electrical Theory	2
32414341	Electrical Systems <sup>▲</sup>	3
32414342	Electrical Motors <sup>▲</sup>	2
32414343	Industrial Systems Control <sup>▲</sup>	3
32419301	Hydraulics/Pneumatics	3
32420305	Maintenance Machining	3
32420310	Print Reading	2
32442341	Maintenance Welding	3
32462305	Rigging	2
32462306	Fabrication Processes	2
32462308	Piping Systems	2
32462309	Pump Applications	2
32462310	Valves, Gaskets, Seals	2
32462311	Fluid Systems Repair Lab (WBL) <sup>▲</sup>	3
32462312	Bearings and Lubrication	2
32462313	Gears, Belts, and Chain Drives	2
32462314	Machine Leveling and Alignments	2
32462315	Conveyors (WBL)	3
32462316	Conveyor Systems Repair Lab <sup>▲</sup>	3
32462317	Industrial Safety	1
32462318	Preventive Maintenance	2
		<u>49</u>
<b>Occupational Supportive/ General Studies Courses <sup>●</sup></b>		
32801361	Applied Communications 1	2
32801363	Applied Communications 2 <sup>▲</sup>	2
32804355	Math 355	3
32804364	Math 364 <sup>▲</sup>	2
32806300	Applied Materials Science	2
32806351	Applied Science	2
32809371	Applied Human Relations	2
32890305	Applied Information Resources	2
		<u>17</u>
<b>PROGRAM REQUIREMENTS</b>		<b>66</b>

- <sup>▲</sup> Requires a prerequisite and/or corequisite that must be completed with a grade point of 2.0 or better.
- <sup>●</sup> See page 40 for General Studies course descriptions.

## Course Descriptions

(See page 40 for General Studies course descriptions)

### 32414340

#### Basic Electrical Theory - Credits: 2

This course is designed to introduce the student to the basic concepts of electricity. Students will be introduced to basic electrical components such as resistors, switches, indicators, relays, and basic testing equipment. Conduit bending, troubleshooting, and reading wiring or ladder diagrams will be introduced during this course.

### 32414341

#### Electrical Systems - Credits: 3

This course introduces the student to advanced interpretation of the various wiring and ladder diagrams used in electrical systems. The selection and application of interconnecting wiring and control devices used in industrial electrical control systems will be the focus of this course. COREQUISITE: 32414340 Basic Electrical Theory.

### 32414342

#### Electrical Motors - Credits: 2

This course is designed to introduce the student to single-phase, direct current, and three-phase motors. Motor selection, motor protection, and motor failure will also be covered in the course. Troubleshooting skills and wiring procedures will be demonstrated. COREQUISITE: 32414340 Basic Electrical Theory.

### 32414343

#### Industrial Systems Control - Credits: 3

This course is designed to introduce the student to the basics of the programmable logic controllers used in industry. Training in ladder logic, logic gates, Boolean equations, and truth tables will be the focus of this laboratory-based course. Common applications of different circuits will be explored and constructed.

### 32419301

#### Hydraulics/Pneumatics - Credits: 3

This course is designed to introduce the student to the theory of fluid power. The common gas laws will be analyzed. The basic system of a hydraulic unit and pneumatic unit will be the focus of this laboratory-based course. Common applications of different circuits will be explored and constructed.

### 32420305

#### Maintenance Machining - Credits: 3

This course is designed to introduce the student to the basic machines and procedures of machines common to the industrial maintenance industry.

### 32420310

#### Print Reading - Credits: 2

This course will cover the basic principles of print reading. The emphasis will be on interpreting lines and symbols in single- and multiple-view working drawings. Topics include print reading procedures, sketching, drawing changes, and the reading of prints in maintenance areas of machining, fabrication, piping systems, and welding.

### 32442341

#### Maintenance Welding - Credits: 3

This course will introduce the student to the basic concepts of oxyfuel gas cutting principles, air carbon arc cutting, plasma arc cutting, shielded metal arc welding, and gas metal arc welding. This course is self-paced within the 16-week semester time frame; it is supported by DVD demonstrations, instructor demonstrations, and instructor-led theory.

### 32462305

#### Rigging - Credits: 2

During this course the student will be introduced to the safety procedures, the common hardware components, and the equipment used in industry for rigging to lift and move machines and equipment. The student will demonstrate industry standard rigging and lifting procedures in a laboratory-based environment.

### 32462306

#### Fabrication Processes - Credits: 2

This course is designed to introduce the student to the basics of fabrication processes that are common to the industrial maintenance field along with the tools and components used in these processes. This course is a theory-based course with hands-on lab applications.

### 32462308

#### Piping Systems - Credits: 2

This course is designed to introduce the student to basic plumbing of air, water, and other process systems found in industrial plants. Layout, cutting, threading, and installing these systems will be the focus of this course.

### 32462309

#### Pump Applications - Credits: 2

This course is designed to enable the student to explore the theory of fluid pumping applications common to industry. General troubleshooting and maintenance procedures will be stated and practiced during this competency lab-based course.

### 32462310

#### Valves, Gaskets, Seals - Credits: 2

This course is designed to introduce the student to the valves, gaskets, and seals that are common to industry. Basic theory and hands-on laboratory assignments will be the foundation of this course.

### 32462311

#### Fluid Systems Repair Lab (WBL) - Credits: 3

This course is designed to give the student a chance to apply fluid power system skills in a shop environment. Students will work on projects that will require troubleshooting of fluid systems and components, and construction of fluid systems common to industry. COREQUISITES: 32419301 Hydraulics/Pneumatics, 32462308 Piping Systems, 32462309 Pump Applications, and 32462310 Valves, Gaskets, Seals.

### 32462312

#### Bearings and Lubrication - Credits: 2

This course is designed to introduce the student to the applications of bearings and lubrication processes used in industries. Instruction will be given in the basic principles of operations, preventive maintenance, and repair procedures of all bearing types common to industry.

### 32462313

#### Gears, Belts, and Chain Drives - Credits: 2

This course is designed to introduce the student to the applications of gears, belts, and chain drives used in industry. Instruction will be given in the basic principles of operation, installation, preventive maintenance, and repair procedures of these components to industry standards.

### 32462314

#### Machine Leveling and Alignments - Credits: 2

This course is designed to introduce the student to the standard applications of machine leveling and alignment of shafts, couplings, bearings, and machines common to industries. This course will cover several leveling and alignment procedures that meet industry standards.

### 32462315

#### Conveyors (WBL) - Credits: 3

This course is designed to introduce the student to bulk handling belt conveyor systems common to many industries. While examining the different systems used that make up an effective belt conveyor, the student will design a system of their own. Standard applications, preventive maintenance, repair, and installation of conveyors will be the focus of this course. The screw, flat belt, and roller conveyors will also be examined. A strong background in mechanical drive and fabrication is recommended.

### 32462316

#### Conveyor Systems Repair Lab - Credits: 3

This course is designed to provide a "real" work-like environment where the student is placed in a team environment to build a conveyor from the design that was created in the conveyors theory class. All welding, machining, and the fabrication of the conveyor will be done by the team. The ordering of parts and components, along with creating a journal of the project, will be a team function. COREQUISITE: 32462315 Conveyors (WBL).

### 32462317

#### Industrial Safety - Credits: 1

This course is designed to introduce the student to safety topics required by OSHA for general industries. Safety committees and their function in the workplace will also be discussed. The history of OSHA and the role it plays in industry, along with the roles of all workers and employers toward safety, will be the focus of this course.

### 32462318

#### Preventive Maintenance - Credits: 2

This course is designed to introduce the student to the theory of TPM and other preventive maintenance systems and software. In a team format, the students will design and create a preventive maintenance program for a given industry on real machinery. Basic knowledge of machine maintenance is recommended.

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

### Graduate Employment Information

(WITC Graduate Survey Responses 2010-2011; for most recent data, go to [witc.edu](http://www.witc.edu))

Number of graduates	10	Number employed	7	% employed in WITC district	40%
Number of responses	8	Percent employed	88%	Range of yearly salary	\$20,798-\$58,236
Number available for employment	8	Employed in related field	5	Average yearly salary	\$37,636

*career vision*

800.243.9482

witc.edu

2013-2014

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# **TEAM MEMBERSHIP**



## ACADEMIC PROGRAM REVIEW PROFILE

Program Number & Name	
<b>32-462-1 Industrial Maintenance Technician</b>	
Program Academic Dean	Title/Location
Nancy Cerritos	Academic Dean, Trade & Tech
Team Lead(s)	Title/Location
Steve Miller	Industrial Maintenance Faculty Superior Campus
Team Members	Title/Location
Celia Tarnowski	General Studies Faculty Superior
Robert Phelps	Industrial Maintenance Student
Jacob Moore	Industrial Maintenance Student
Amanda Hellman	Student Services Assistant Superior
Brian Parenteau	Advisory Committee Member

Program Information:		
Capacity (new students admitted/year):		10
Number of Faculty:	FT: 1	PT:
Statewide Curriculum:	Yes?	No? X
Number of Technical Studies Courses in each of the following delivery modes: (there may be duplication for courses offered in multiple modes)		
	<i>Classroom:</i>	22
	<i>Online:</i>	0
	<i>ITV/IP:</i>	0
	<i>In Person/Web Blended:</i>	0

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

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





# **SELF-STUDY REPORT**



## SELF-STUDY SUMMARY REPORT

Program Information	
Program Name: <b>Industrial Maintenance Technician</b>	Team Chair: <b>Steve Miller</b>
Academic Dean: <b>Mike Boyle</b>	Divisional Dean: <b>Randy Deli</b>
Process Used to Complete the Self-Study	
Meeting format (in-person, IP, conference calls etc.)	<b>In person, small group.</b>
Number of meetings	<b>One.</b>
How was the self-study handled? (as a group, assigned to individuals to report back to group, etc.)	<b>As a group.</b>
Additional comments:	
Summary of Findings	
As you completed this self study section of the program review, what areas "stand out" in your program? Please explain.	<b>Industry human resources professional serves on Advisory Committee.</b> <b>Close relationship between the program and continuing education.</b> <b>Stand-alone semesters allow multiple entry to program.</b>
What has surprised you? Please explain.	<b>Multiple checklists are confusing for staff and students.</b>
List two or three of the items identified through your self-study that you will focus on to make improvements to your program.	<b>COS needs updating.</b> <b>Work with Student Services to create a better understanding of the multiple entry concept.</b> <b>Increase percentage of employee representation on Advisory Committee.</b>
When/where in your program will you implement these improvements?	<b>COS need updating – will be completed by January 2014.</b> <b>Work with Student Services to clear up understanding of multiple entry concept by January 2014.</b> <b>Increase percentage of employee representation on Advisory Committee by December 2015.</b>
What methods (direct or indirect) will you use to assess the success of this implementation?	<b>Direct on curriculum with a checklist.</b>

	<p><b>Training Student Services will be assessed indirect with a survey.</b></p> <p><b>Direct on Advisory Committee by calculating percentage of change in ratio of employers to employees.</b></p>
<p>What new outcomes or benchmarks do you hope to achieve through these recommended changes?</p>	<p><b>We want a clearer understanding of Industrial Maintenance by Student Services.</b></p> <p><b>Advisory Committee will have increased input and participation from members who are employees in the industry.</b></p>
<p>Additional comments:</p>	

## SELF-STUDY CATEGORY RESULTS

Program and Category			
<b>Program: Industrial Maintenance Technician</b> <b>Category: WITC Program Statistics</b> <i>(fill out a Self-Study Category Sheet for each section of the self-study. (Additional sections may be added if desired))</i>			
PLUSES (Strengths)		DELTAS (Opportunities)	
<b>-Graduate satisfaction.</b>  <b>-Retention good.</b>  <b>-Steady enrollments.</b>  <b>-FTE's maintained.</b>		<b>-Program capacity limits enrollments.</b>	
Select one PLUS item and explain the root cause:	<b>FTE's maintained due to multiple entry. Flexible format which fits industry needs. Offered in traditional format and independent study format that assists student learning.</b>		
Select one DELTA item and explain the root cause:	<b>Program capacity limits enrollments to twenty students. Limited enrollments are due to facility, equipment and instructor constraints.</b>		
What items in this category MUST be addressed on our improvement plan?			
What items in this category MIGHT be addressed on the improvement plan?	<b>Program capacity limits enrollments.</b>		
What items in this category may be considered a BEST PRACTICE OR INNOVATION?	<b>FTE's maintained due to multiple entry formats.</b>		
Team Rating			
Please indicate by an <b>(X)</b> the team rating of your program on this category.			
<i>All areas need improvement</i>	<i>Some areas meet expectations, but most areas need improvement</i>	<i>All areas meet expectations —few areas need improvement</i>	<i>Exemplary—all areas exceed expectations—use as a model for other programs</i>
		<b>X</b>	
Additional Comments: (optional)			



## SELF-STUDY CATEGORY RESULTS

Program and Category			
<b>Program: Industrial Maintenance Technician</b> <b>Category: Curriculum</b> <i>(fill out a Self-Study Category Sheet for each section of the self-study. (Additional sections may be added if desired))</i>			
PLUSES (Strengths)		DELTAS (Opportunities)	
<b>-Catalog page revised annually by Advisory Committee.</b>  <b>-Customized checklist assists students with multiple starts.</b>		<b>-COS need updating.</b> <b>-WIDS analyzer report not in place.</b> <b>-TSA not in place.</b> <b>-Multiple checklist are confusing.</b>	
Select one PLUS item and explain the root cause:	<b>Customized program checklists are setup for any of the four possible program sequences.</b>		
Select one DELTA item and explain the root cause:	<b>Multiple checklists are confusing to Student Services and to counselors that work with Industrial Maintenance students.</b>		
What items in this category MUST be addressed on our improvement plan?	<b>COS need updating.</b> <b>WIDS analyzer report not in place.</b> <b>TSA not in place.</b> <b>Multiple checklists are confusing.</b>		
What items in this category MIGHT be addressed on the improvement plan?			
What items in this category may be considered a BEST PRACTICE OR INNOVATION?	<b>Catalog page revised annually by Advisory Committee.</b>		
Team Rating			
Please indicate by an <b>(X)</b> the team rating of your program on this category.			
<i>All areas need improvement</i>	<i>Some areas meet expectations, but most areas need improvement</i>	<i>All areas meet expectations —few areas need improvement</i>	<i><u>Exemplary</u>—all areas exceed expectations—use as a model for other programs</i>
	<b>X</b>		
Additional Comments: (optional)			





## SELF-STUDY CATEGORY RESULTS

Program and Category			
<b>Program: Industrial Maintenance Technician</b> <b>Category: Assessment of student learning</b> <i>(fill out a Self-Study Category Sheet for each section of the self-study. (Additional sections may be added if desired))</i>			
PLUSES (Strengths)		DELTAS (Opportunities)	
<b>-Mechanical Maintenance Skills assessment is identical to what is used in industry for pre-employment assessment.</b>  <b>-Assessments are appropriate to learning goals.</b>		<b>-Purchased assessment materials have errors.</b>  <b>-TSA not in place. Currently assessing several of the program outcomes.</b>	
Select one PLUS item and explain the root cause:	<b>Mechanical maintenance skills assessment is identical to what is used in industry for pre-employment assessment. This prepares students for industry pre-employment assessment. It clearly identifies student areas that need further emphasis prior to graduation.</b>		
Select one DELTA item and explain the root cause:	<b>Purchased assessment materials have errors. List of errors sent to publisher for correction.</b>		
What items in this category <b>MUST</b> be addressed on our improvement plan?	<b>TSA not in place.</b>		
What items in this category <b>MIGHT</b> be addressed on the improvement plan?			
What items in this category may be considered a <b>BEST PRACTICE OR INNOVATION?</b>	<b>Mechanical Maintenance Skills assessment is identical to what is used in industry. This is a regional assessment tool used by employers. Students while at WITC use it to assess their strengths and weaknesses prior to graduation.</b>		
Team Rating			
Please indicate by an <b>(X)</b> the team rating of your program on this category.			
<i>All areas need improvement</i>	<i>Some areas meet expectations, but most areas need improvement</i>	<i>All areas meet expectations —few areas need improvement</i>	<i><u>Exemplary</u>—all areas exceed expectations—use as a model for other programs</i>
		<b>X</b>	
Additional Comments: (optional)			



## SELF-STUDY CATEGORY RESULTS

Program and Category			
<b>Program: Industrial Maintenance Technician</b> <b>Category: Advisory Committees</b> <i>(fill out a Self-Study Category Sheet for each section of the self-study. (Additional sections may be added if desired))</i>			
PLUSES (Strengths)		DELTA (Opportunities)	
-Industry Human Resources professionals on committee.  -Representation of General Studies and Continuing Education at meetings.  -Advisory Committee plays an active role in program decisions.		-Small percentage of employee representation on Advisory Committee.  -Student Services not represented at advisory meetings.	
Select one PLUS item and explain the root cause:	<b>Industry Human Resource professional on committee. They give insight to students entering the profession. They also provide insight into entrance assessment for employment.</b>		
Select one DELTA item and explain the root cause:	<b>Small percentage of employee representation on Advisory Committee. This leads to a strong influence by employers and little input by employees in the industry. This leads to less than effective guidance by the Advisory Committee.</b>		
What items in this category MUST be addressed on our improvement plan?	<b>Small percentage of employee representation on Advisory Committee.</b>		
What items in this category MIGHT be addressed on the improvement plan?	<b>Student Services not represented at Advisory Committee meetings.</b>		
What items in this category may be considered a BEST PRACTICE OR INNOVATION?	<b>Industry Human Resources professionals on committee.</b>		
Team Rating			
Please indicate by an <b>(X)</b> the team rating of your program on this category.			
<i>All areas need improvement</i>	<i>Some areas meet expectations, but most areas need improvement</i>	<i>All areas meet expectations —few areas need improvement</i>	<i>Exemplary—all areas exceed expectations—use as a model for other programs</i>
		<b>X</b>	
Additional Comments: (optional)			



## SELF-STUDY CATEGORY RESULTS

Program and Category			
<b>Program: Industrial Maintenance Technician</b> <b>Category: Equipment and Facilities</b> <i>(fill out a Self-Study Category Sheet for each section of the self-study. (Additional sections may be added if desired))</i>			
PLUSES (Strengths)		DELTAS (Opportunities)	
<b>-Equipment is up-to-date and meeting student's needs.</b>  <b>-Consolidating equipment to one lab Spring 2013.</b>  <b>-Coursework blended with online component.</b>		<b>-Digital readouts needed on additional equipment.</b>  <b>-Storage concerns.</b>	
Select one PLUS item and explain the root cause:	<b>Consolidating equipment to one lab Spring 2013. This move addresses safety concerns related to the instructor being in two labs. Will add ventilation for welding fabrication that was not available in the past.</b>		
Select one DELTA item and explain the root cause:	<b>Digital readouts needed on additional equipment. Currently less than 25% of the lathes and mills have digital display. The goal would be to move 50% of the lathes and mills to digital displays.</b>		
What items in this category <b>MUST</b> be addressed on our improvement plan?			
What items in this category <b>MIGHT</b> be addressed on the improvement plan?	<b>Digital readouts needed on additional equipment.</b>		
What items in this category may be considered a <b>BEST PRACTICE OR INNOVATION?</b>			
Team Rating			
Please indicate by an <b>(X)</b> the team rating of your program on this category.			
<i>All areas need improvement</i>	<i>Some areas meet expectations, but most areas need improvement</i>	<i>All areas meet expectations —few areas need improvement</i>	<i>Exemplary—all areas exceed expectations—use as a model for other programs</i>
		<b>X</b>	
Additional Comments: (optional)			



## SELF-STUDY CATEGORY RESULTS

Program and Category			
<b>Program: Industrial Maintenance Technician</b>			
<b>Category: Staff Development and Program Innovation</b>			
<i>Fill out a Self-Study Category Sheet for each section of the self-study. (Additional sections may be added if desired)</i>			
PLUSES (Strengths)		DELTAS (Opportunities)	
<b>-Annual Performance Reviews Conducted.</b> <b>-Faculty engaged in lifelong learning.</b> <b>-Faculty stays current with the needs of the industry.</b>		<b>-Financial support of staff development.</b>	
Select one PLUS item and explain the root cause:	<b>Faculty engages in lifelong learning. Recently involved in AQUIP and assessment activities district wide.</b>		
Select one DELTA item and explain the root cause:	<b>Financial support of staff development. College has more than fifty programs which makes funding of all technology and program innovations challenging district wide.</b>		
What items in this category <b>MUST</b> be addressed on our improvement plan?			
What items in this category <b>MIGHT</b> be addressed on the improvement plan?			
What items in this category may be considered a <b>BEST PRACTICE OR INNOVATION?</b>			
Team Rating			
Please indicate by an <b>(X)</b> the team rating of your program on this category.			
<i>All areas need improvement</i>	<i>Some areas meet expectations, but most areas need improvement</i>	<i>All areas meet expectations —few areas need improvement</i>	<i>Exemplary—all areas exceed expectations—use as a model for other programs</i>
		<b>X</b>	
Additional Comments: (optional)			





## SELF-STUDY CATEGORY RESULTS

Program and Category			
<b>Program: Industrial Maintenance Technician</b> <b>Category: Collaboration Across the College</b>			
PLUSES (Strengths)		DELTAS (Opportunities)	
-General Studies instructors work closely with program instructors on student activities. -Program works closely with admissions regarding student activities and recruitment activities. -Close relationship between program and Continuing Education to meet industry needs. -Marketing of the program has been effective.		-Student Services does not have a clear understanding of multiple entry concept.	
Select one PLUS item and explain the root cause:	<b>Close relationship between program and Continuing Education working to meet industry needs. This is due to the strong relationship WITC staff has with local industries. WITC is proactive and reactive to their needs.</b>		
Select one DELTA item and explain the root cause:	<b>Student Services does not have a clear understanding of this multiple entry program and the industry. Unique curriculum allows multiple entry points for students. The program has four independent semesters.</b>		
What items in this category MUST be addressed on our improvement plan?			
What items in this category MIGHT be addressed on the improvement plan?			
What items in this category may be considered a BEST PRACTICE OR INNOVATION?			
Team Rating			
Please indicate by an (X) the team rating of your program on this category.			
<i>All areas need improvement</i>	<i>Some areas meet expectations, but most areas need improvement</i>	<i>All areas meet expectations —few areas need improvement</i>	<i><u>Exemplary</u>—all areas exceed expectations—use as a model for other programs</i>
		<b>X</b>	
Additional Comments: (optional)			



## **Perkins Data Review**



## PERKINS DATA REVIEW

(replaces QRP Analysis for 2013 reviews only)

Program and Category	
<b>Program: Industrial Maintenance Technician</b> <b>Category: Perkins Data Review</b>	
PLUSSES (Strengths)	DELTAS (Opportunities)
<p><b>-1P1 94.12 Average of three years of course completion exceeds the benchmark of 82.22;in addition, every year exceeds the benchmark.</b></p> <p><b>-1P2 General studies completion is over the benchmark of 83.71 in every year, with an average of 93.94. Completion has increased every year for the three years.</b></p> <p><b>-2P1 Degree attainment surpasses the benchmark of 55 in all three years, with an average or 76.47.</b></p> <p><b>-2P1+3P1 Average of 82.35 degree attainment + retention % is above benchmark of 66.78.</b></p>	<p><b>-1P1 Course completion is trending downward slightly over the three years (target 82.22).</b></p> <p><b>-2P1 Degree attainment is trending down over the three years, dropping 22%.</b></p> <p><b>-2P1+3P1 Degree attainment + retention % is trending downward over the three year period, dropping from 100% to 66.67% (target of 66.78).</b></p> <p><b>-4P1 Average of 69.57 is below target of 90.41. All three years are below target.</b></p>
Select one PLUS item and explain the root cause:	<p><b>Course completion is very high- with an N of 9, even one person who doesn't' complete has a strong effect. The structure of the program promotes teamwork and peer to peer mentoring. Most of the work is hands on which keeps students engaged.</b></p>
Select one DELTA item and explain the root cause:	<p><b>Degree attainment is trending down over the three years. Some students have run out of funding before they completed the program. With such a small "n" number, even a single student can influence the results.</b></p>
What items in this category MUST be addressed on our improvement plan?	<p><b>Degree attainment will be addressed on our improvement plan.</b></p>
What items in this category MIGHT be addressed on the improvement plan?	<p><b>Job placement may be addressed on the improvement plan.</b></p>
What items in this category may be considered a BEST PRACTICE OR INNOVATION?	



## FUTURE TRENDS AND EXTERNAL FACTORS

<b>Program</b>	<b>Industrial Maintenance Technician</b>
<b>Future Trends</b>	
•	Increase in all technology aspects, particularly automation.
•	More welding in industry - need to increase in program.
•	Continued growth as manufacturing rebounds.
•	
•	
<b>External Factors</b>	
•	Continued shortage of skilled technicians.
•	Increased interest on the part of manufacturing and other local industries to partner with education to fill the vacancies being left by retirements.
•	
•	
•	
<b>Employment Trends</b>	
Local	
•	Increased employment opportunities as mining production increases.
•	Major regional industries forecasting shortage of maintenance workers in the next 3-5 years.
State	
•	
•	





## **2013 Improvement Plan**



## ACADEMIC PROGRAM IMPROVEMENT PLAN

<b>PROGRAM:</b>	Industrial Maintenance Technician			
<b>Defined Outcome:</b> TSA is begun	<b>Perkins?</b> no	<b>Responsibility</b>	<b>Timeline</b>	<b>Resources</b>
<b>Action Plan/Action Items:</b>  TSA Phase I is investigated or begun Program outcomes are carefully examined Meetings with other TCS programs are planned		Instructors Dean	Fall 2013-Spring 2015	Cindy King
<b>WTCS QRP Indicator Name &amp; Number:</b> (from those potential solutions selected from the WTCS QRPDS Analysis)				
<p><b>Update:</b> (A mid-year and year-end update will be required each year during implementation.)</p> <p>May 2014: TSA Phase one was begun. Instructor participated in the meetings and draft TSA assessment rubric was completed. Deans were surveyed and it is expected it will be approved for Phase I.</p> <p>December 2014: Waiting for Phase 1 approval.</p> <p>May 2015: Phase 1 was approved and paperwork for Phase 2 approval submitted.</p> <p>December 2105: Phase 2 was approved and assessment begun fall of 2015.</p>				



## ACADEMIC PROGRAM IMPROVEMENT PLAN

<b>PROGRAM:</b>	Industrial Maintenance Technician			
<b>Defined Outcome:</b> Catalog page is current and updated	<b>Perkins?</b> no	<b>Responsibility</b>	<b>Timeline</b>	<b>Resources</b>
<b>Action Plan/Action Items:</b>  Review both catalog page and web page at fall Advisory Committee meetings. Add newer photos. Seek testimonials of recent graduates. Complete each fall before October 1- or catalog cutoff date.		Instructors Dean Advisory Committee	Fall 2013 Fall 2014 Fall 2015	Web Manger
<b>WTCS QRP Indicator Name &amp; Number:</b> (from those potential solutions selected from the WTCS QRPDS Analysis)				
<p><b>Update:</b> (A mid-year and year-end update will be required each year during implementation.)</p> <p>May 2014: Work on this was begun but will not be completed until the fall advisory committee meeting.</p> <p>December 2104: Did not have time to do this in the fall. New classes in the program modification kept the instructor occupied.</p> <p>May 2015: Spring advisory meeting was packed. Will do in the fall.</p> <p>December 2015: Did not complete.</p>				



## ACADEMIC PROGRAM IMPROVEMENT PLAN

<b>PROGRAM:</b>	Industrial Maintenance Technician			
<b>Defined Outcome:</b> <b>Current and updated program course curriculum</b>	<b>Perkins?</b> no	<b>Responsibility</b>	<b>Timeline</b>	<b>Resources</b>
<b>Action Plan/Action Items:</b>  <i>Create plan for updating curriculum.</i> <i>Transition to WEB version of WIDS.</i> <i>Explore adding BB element to classes.</i> <i>Explore creating LRC program page with reference links.</i> <i>Align with program and college-wide outcomes.</i> <i>Update WIDS analyzer.</i>		Instructors Dean Curriculum Designer Web Manager	Fall 2013-Fall 2015	Curriculum office LRC Web Manager
<b>WTCS QRP Indicator Name &amp; Number:</b> (from those potential solutions selected from the WTCS QRPDS Analysis)				

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

May 2014: This plan will need more time. We initiated a program modification and the first thing that needed to happen was to create/update the curriculum in the modification. This is mostly completed- some courses were dropped and others had competencies added. New courses were added as well. Between the new curriculum and the new TSA document the other steps were placed farther out in the timeline.

December 2014: Program modification started in the fall. In the spring we will update the WIDS analyzer with the new program outcomes adjusted through the TSA process. We may need to extend the timeline.

May 2015: With the new modification and TSA activities, we were not able to do this in the spring. We will look at it in the fall. The first 2 steps have been completed.

December 2015: WIDS analyzer was updated with Phase 2 TSA approval. The curriculum is updated. Program outcomes were approved and validated through the TSA process.



## ACADEMIC PROGRAM IMPROVEMENT PLAN

<b>PROGRAM:</b>	Industrial Maintenance Technician			
<b>Defined Outcome:</b> <b>Improved Advisory Committee Meetings</b>	<b>Perkins?</b> no	<b>Responsibility</b>	<b>Timeline</b>	<b>Resources</b>
<b>Action Plan/Action Items</b>  <i>Ensure agenda has at least one solid discussion topic</i> <i>Invite specific General Studies and Student Services personnel to ensure their presence</i> <i>Expand membership of committee to include more employee representation</i>		Instructors  Dean	Fall 2013-Fall 2014	Advisory Committee
<b>WTCS QRP Indicator Name &amp; Number:</b> (from those potential solutions selected from the WTCS QRPDS Analysis)				
<p><b>Update:</b> (A mid-year and year-end update will be required each year during implementation.)</p> <p>May 2014: Meeting time was adjusted, and agenda was as well. We will need their input for the next couple of years with the modification and the TSA. Instructor is looking at potential new members.</p> <p>December 2014: Meeting went very well with good attendance. Had new member. Will continue this next fall.</p> <p>May 2015: Ended up having Spring meeting to approve Phase 2 TSA plans. The meeting went well, but still need to adjust some memberships. People have left positions or moved to new companies.</p> <p>December 2015: We had a very good Advisory Committee meeting in the fall. Steve adjusted the membership and will continue to look for new members.</p>				



## ACADEMIC PROGRAM IMPROVEMENT PLAN

<b>PROGRAM:</b>	Industrial Maintenance Technician			
<b>Defined Outcome:</b> <b>Improve our degree attainment percentage by 10%</b>	<b>Perkins?</b> yes	<b>Responsibility</b>	<b>Timeline</b>	<b>Resources</b>
<b>Action Plan/Action Items:</b>  <i>Investigate course pass rates and identify barrier course.</i> <i>Arrange periodic meetings with GS instructors to monitor student progress.</i> <i>Implement proactive advising measures.</i> <i>Meet annually with Student services to update program changes and needs.</i> <i>Meet with counselors and SS staff to explain curriculum checklists and multiple semester entry into program.</i>		Instructors Dean GS Instructors SS staff	Fall 2013-Spring 2015	
<b>WTCS QRP Indicator Name &amp; Number:</b> (from those potential solutions selected from the WTCS QRPDS Analysis)				
<p><b>Update:</b> (A mid-year and year-end update will be required each year during implementation.) <b>X(F600)</b></p> <p>May 2014: Too early to see if we have achieved anything yet. However, we are looking at our General Studies Configuration and working with SS staff for better understanding of the program.</p> <p>December 2014: No data yet. We did NOT change the General Studies configuration, other than eliminating the science classes and Info Resources.</p> <p>May 2015: Do not have current Data. Think there will only be QRP data which may not be available until June.</p> <p>December 2015: QRP Scorecard lists our third year graduation rate at 50% and fifth year at 57.14%. But can't compare to anything because there is no QRP for 2013 and no Perkins for 2015.</p>				



## ACADEMIC PROGRAM IMPROVEMENT PLAN

<b>PROGRAM:</b>	Industrial Maintenance Technician			
<b>Defined Outcome:</b> Create embedded certificate or diploma	<b>Perkins?</b> no	<b>Responsibility</b>	<b>Timeline</b>	<b>Resources</b>
<b>Action Plan/Action Items:</b>  <i>Meet and discuss possible options.</i> <i>Garner Advisory Committee validation of employability potential.</i> <i>Embed certificate with proper approvals.</i>		Instructors Dean Advisory Committee	Fall 2013-Fall 2015	Curriculum Office
<b>WTCS QRP Indicator Name &amp; Number:</b> (from those potential solutions selected from the WTCS QRPDS Analysis)				
<p><b>Update:</b> (A mid-year and year-end update will be required each year during implementation.)</p> <p>May 2014: This will not be looked at for another year. We have too much going on right now. We need to extend this deadline.</p> <p>Dec 2014: We will consider this starting next fall. However, given the nature of how this program is scheduled, this may be difficult.</p> <p>May 2015: Deferred until fall.</p> <p>December 2015: This plan was abandoned. With the way this course is offered, this is not a practical or viable option.</p>				



## ACADEMIC PROGRAM IMPROVEMENT PLAN

<b>PROGRAM:</b>	Industrial Maintenance Technician			
<b>Defined Outcome:</b> Equipment purchase and maintenance plan is in place	<b>Perkins?</b> no	<b>Responsibility</b>	<b>Timeline</b>	<b>Resources</b>
<b>Action Plan/Action Items:</b>  <i>Inventory existing equipment.</i> <i>Determine replacement cycle for each piece.</i> <i>Add on any improvements such as digital readouts for each piece of equipment.</i> <i>Construct multi-year replacement plan.</i>		Instructor Dean	Fall 2013-Fall 2014	Planning Process
<b>WTCS QRP Indicator Name &amp; Number:</b> (from those potential solutions selected from the WTCS QRPDS Analysis)				
<b>Update:</b> (A mid-year and year-end update will be required each year during implementation.) May 2014: We will be starting this task in the fall. We have not begun this yet. December 2014: Did not start this yet. Postpone until late spring. May 2015: Defer until fall. Possibly abandon this plan. December 2015: This plan was abandoned.				





## ACADEMIC PROGRAM IMPROVEMENT PLAN

<b>PROGRAM:</b> Industrial Maintenance Technician				
<b>Defined Outcome:</b> <b>Update Program</b>	<b>Perkins?</b> no	<b>Responsibility</b>	<b>Timeline</b>	<b>Resources</b>
<b>Action Plan/Action Items:</b>  <i>Explore need for program modification.</i> <i>Examine general studies courses for relevancy to program.</i> <i>Add and update core technical courses.</i> <i>Garner advisory committee approval.</i> <i>Complete paperwork.</i>		Instructor Dean	Fall 2013-Fall 2014	Curriculum Office
<b>WTCS QRP Indicator Name &amp; Number:</b> (from those potential solutions selected from the WTCS QRPDS Analysis)				
<b>Update:</b> (A mid-year and year-end update will be required each year during implementation.) May 2014: We completed the program modification and all is in place for next fall. We do still need to look at the general studies. At the time of the modification we were not able to alter the configuration of General Studies courses. However, we did eliminate Applied Info resources. December 2014: We considered eliminating Applied Com 2 but were unable to as it would leave one semester at less than full time. May 2015: This plan is completed.				