



WISCONSIN
INDIANHEAD
TECHNICAL
COLLEGE

MACHINE TOOL OPERATION

**Wisconsin Indianhead Technical College
31-420-1 Technical Diploma**

2014
Program Review

and

Improvement Plan

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Machine Tool Operation

31-420-1 Technical Diploma

Financial Aid Eligible

Program Overview

The one-year Machine Tool Operation program emphasizes core machining skills and will prepare the student for a career in the machining industry. Students will learn the machining skills required to set up and operate manual and computer-controlled machines. Students will learn to use hand tools, precision measuring instruments, read prints, and create parts using a computer-aided manufacturing system. Skilled machine tool operators work in job shops, production, and maintenance shops.

Campus:

Ashland



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

Machine Tool Operation students should be able to:

- Think mechanically
- Work well under pressure
- Enjoy working with their hands
- Work at repetitive tasks
- Give attention to detail
- Assume responsibility
- Organize their work
- Work with a variety of skilled and non-skilled workers and professionals
- Take constructive criticism
- Work well under supervision

Preparation for Admission

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

- Communications
- Mechanical Design
- Geometry/Algebra I and II/Trigonometry
- General Metals
- Machine Shop
- Principles of Technology
- Keyboarding
- Print Reading/Computer-Aided Drafting

Program Outcomes

Employers will expect one-year Machine Tool Operation graduates to be able to:

- Apply basic safety practices in the machine shop
- Interpret industrial/engineering drawings
- Apply precision measuring methods to part inspection
- Perform basic machine tool equipment set-up and operation
- Perform programming, set up, and operation of CNC machine tools

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

Graduates from the one-year Machine Tool Operation program will be ready to start their careers as:

- Machine Operators
- Machinist Apprentices
- Machine Setup Operators

With further training, graduates may advance to:

- All-round Machinist
- Tool and Die Maker
- Machine Programming
- Machine Shop Operator
- Tool-machine Setup Operator

Curriculum

Number	Course Title	Credits
Occupational Specific Courses		
31420301	Machine Tool Operation 1	5
31420302	Machine Tool Operation 2 [▲]	4
31420303	Machine Tool Operation 3 [▲]	5
31420304	Machine Tool Operation 4 (WBL) [▲]	4
31420322	Print Reading for Machine Trades 1	1
31420323	Print Reading for Machine Trades 2 [▲]	1
31420345	Machine Tool Theory 1	2
31420347	Machine Tool Theory 2 [▲]	2
32420361	Introduction to CAD/CAM	<u>1</u>
		25
Occupational Supportive/ General Studies Courses [•]		
32801361	Applied Communications 1	2
32801363	Applied Communications 2 [▲]	2
32804355	Math 355	3
32804364	Math 364 [▲]	2
32809371	Applied Human Relations	<u>2</u>
		11
	PROGRAM REQUIREMENTS	36

[▲] Requires a prerequisite and/or corequisite that must be completed with a grade point of 2.0 or better.

[•] See pages 41-43 for course descriptions.

Course Descriptions

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

31420301

Machine Tool Operation 1 - Credits: 5

Students will be assigned introductory, specifically designed projects that will be machined using the engine lathe, milling machine, drill press, and various saws. Students will be in a job-like setting. The capability and safe use of machine tools will be stressed.

31420302

Machine Tool Operation 2 - Credits: 4

Students will be assigned basic, specifically designed projects that will be machined using the engine lathe, milling machine, drill press, and various saws. Students will also machine parts on conversationally-programmed CNC lathes and vertical mills. Students will be in a job-like setting. The capability and safe use of machine tools will be stressed. COREQUISITE: 31420301 Machine Tool Operation 1.

31420303

Machine Tool Operation 3 - Credits: 5

A continuation of Machine Tool Operation featuring advanced operations on milling machines, grinders, lathes, and drill presses. CNC operation and programming on a vertical mill and a turning center are introduced. Also included are machine maintenance and precision measurement. The capability and safe use of machine tools will be stressed. PREREQUISITE: 31420302 Machine Tool Operation 2.

31420304

Machine Tool Operation 4 (WBU) - Credits: 4

Machine Tool Operation 4 features advanced operations on milling machines, grinders, lathes, and drill presses. CNC programming and operation on vertical mills and turning centers will be emphasized. The capability and safe use of machine tools will be stressed. COREQUISITE: 31420303 Machine Tool Operation 3.

31420322

Print Reading for Machine Trades 1 - Credits: 1

This course will cover the basic principles of print reading. The emphasis will be on object representation, geometric dimensioning and tolerances (GD&T), threads, and section views. Strongly recommend a basic understanding of mathematics concepts.

31420323

Print Reading for Machine Trades 2 - Credits: 1

This advanced print reading course will cover drawing changes, auxiliary and section views, detail and assembly prints, machined features, gears, and CNC documents. PREREQUISITE: 31420322 Print Reading for Machine Trades 1.

31420345

Machine Tool Theory 1 - Credits: 2

This course will cover the basic principles of machine tool theory. The course will emphasize safety in the machine shop, measurement, metal cutting technology, basic lathe and mill operations, drilling machines, saws, layout procedures, and an introduction to CNC machining. The capability and safe use of machine tools will be stressed.

31420347

Machine Tool Theory 2 - Credits: 2

This course will cover principles of machine tool theory emphasizing conventional and CNC machining operations. There will be in-depth training on the engine lathe, milling machines, CNC programming and operation, grinding machines, and metallurgy. The capability and safe use of machine tools will be stressed. PREREQUISITE: 31420345 Machine Tool Theory 1.

32420361

Introduction to CAD/CAM - Credits: 1

This course will introduce students to computer-aided drafting (CAD) and computer-aided machining (CAM). Students will use appropriate CAD software to prepare mechanical drawings. Students will be introduced to CAD/CAM equipment.

Gainful employment information is available at this link: <http://www.witc.edu/pgmpages/machop/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 2011-2012; for most recent data, go to [witc.edu](http://www.witc.edu))

Number of graduates	13	Number employed	7	% employed in WITC district	86%
Number of responses	12	Percent employed	88%	Range of yearly salary	\$29,118-\$42,000
Number available for employment	8	Employed in related field	6	Average yearly salary	\$34,784

career vision

800.243.9482

witc.edu

2014-2015

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TEAM MEMBERSHIP

ACADEMIC PROGRAM REVIEW PROFILE

Program Number & Name	
31-420-1 Machine Tool Operation	
Program Academic Dean	Title/Location
Mike Boyle	Academic Dean Rice Lake
Team Lead(s)	Title/Location
Paul Kalin	Machine Tool Instructor Ashland
Team Members	Title/Location
Charles Beedlow	World Class Manufacturing 36600 County Road J Bayfield, WI 54814
Karen Hoglund	Student Services Ashland
Pat Kinney	Math Instructor Ashland
Leo Hanson	Machine Tool Student 67051 Jolma Road Marengo, WI 54855

Program Information:			
Capacity (new students admitted/year):		18	
Number of Faculty:	FT: 1	PT:	0
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>	9
		<i>Online:</i>	0
		<i>ITV/IP:</i>	0
		<i>InPerson/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: Machine Tool Operation	Team Chair: Paul Kalin
Academic Dean: Mike Boyle	Divisional Dean: Randy Deli
Process Used to Complete the Self-Study	
Meeting format (in-person, IP, conference calls etc.)	In-person
Number of meetings	1
How was the self-study handled? (as a group, assigned to individuals to report back to group, etc.)	As a group.
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.	Collaboration across the college stands out for this program. The areas of Academics, Student Success, Student Services and Continuing Education work closely together to make this program successful.
What has surprised you? Please explain.	This program could be a benchmark for other WITC programs. Machine Tool Operation does many things the right way.
List two or three of the items identified through your self-study that you will focus on to make improvements to your program.	The items that have been identified through the Self-Study to focus on within the improvement plan are as follows. Inviting and encouraging General Studies faculty and Student Services to attend advisory committee meetings. The second item would be to analyze the General Studies offerings in this program.
When/where in your program will you implement these improvements?	These improvements will be analyzed and implemented over the next three years.
What methods (direct or indirect) will you use to assess the success of this implementation?	We will seek input from the advisory committee on the General Studies coursework associated with this program. We will seek input from General Studies and Student Services staff on the value of attending advisory committee meetings.
What new outcomes or benchmarks do you hope to achieve through these recommended changes?	We hope to achieve the right balance of General Studies to Core classes. The need for a CNC programming class and a second CAD CAM course will have to be balanced against the need for the second Communications class and the total number of credits in the course.

	We hope to achieve a well-balanced advisory board with ongoing input from General Studies and Student Services.
Additional comments:	

SELF-STUDY CATEGORY RESULTS

Program and Category	
Program: Machine Tool Operation Category: WITC Program Statistics	
PLUSES (Strengths)	DELTAS (Opportunities)
<p>Enrollment/FTE's have been consistently at/or above program capacity.</p> <p>Number of graduates has increased over the last 4 years.</p> <p>Retention rates have been consistently high. Graduate Employment in related industries is consistently above 80%.</p> <p>Graduate Satisfaction is outstanding.</p>	
Select one PLUS item and explain the root cause:	<p>Number of graduates has increased over the last 4 years: Increased enrollment due to recruitment and hiring. Efforts of College Advancement Specialists (Dan Miller) have increased campus recruitment activities with Gold Collar Careers, Trade & Technical Days, High School Visits, and Open House events. Involvement of Employers in the recruiting/promotion process.</p>
Select one DELTA item and explain the root cause:	
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?	<p>Number of graduates has increased over the last 4 years: Increased enrollment due to recruitment and hiring. Efforts of College Advancement Specialists (Dan Miller) have increased campus recruitment activities with Gold Collar Careers, Trade & Technical Days, High School Visits, and Open House events. Involvement of Employers in the recruiting/promotion process.</p>

Team Rating

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

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

SELF-STUDY CATEGORY RESULTS

Program and Category	
Program: Machine Tool Operation Category: Curriculum	
PLUSES (Strengths)	DELTAS (Opportunities)
<p>Program page is current and accurate. Curriculum Checklist is current and up-to-date. Face-to-face classes benefit the students and the program.</p> <p>Course Outcome Summaries accurately reflect what is being taught in the course and are up-to-date.</p> <p>Course Syllabi is consistent with the college template with additional items that are program specific.</p>	<p>Consider moving from Math 364 verses Math 365 to better meet program/student needs.</p>
<p>Select one PLUS item and explain the root cause:</p>	<p>Face-to-face classes benefit the students and the program: Having the ability to interact with one another and allowing students to work through problems while interacting with students in the classroom. Collaborative based learning supports college-wide and program outcomes.</p>
<p>Select one DELTA item and explain the root cause:</p>	<p>Consider moving from Math 364 verses Math 365 to better meet program/student needs: Math 365 more closely meets the needs of the current program industry needs.</p>
<p>What items in this category MUST be addressed on our improvement plan?</p>	<p>Move from Math 364 to Math 365 to better meet program/student needs: Math 365 more closely meets the needs of the current program industry needs.</p>
<p>What items in this category MIGHT be addressed on the improvement plan?</p>	
<p>What items in this category may be considered a BEST PRACTICE OR INNOVATION?</p>	<p>Face-to-face classes benefit the students and the program: Having the ability to interact with one another and allowing students to work through problems while interacting with students in the classroom. Collaborative based learning supports college-wide and program outcomes.</p>

Team Rating

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

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

SELF-STUDY CATEGORY RESULTS

Program and Category	
Program: Machine Tool Operation Category: Assessment Student Learning	
PLUSES (Strengths)	DELTAS (Opportunities)
<p>Critical Thinking College-wide Outcome is assessed on an annual basis.</p> <p>TSA Summative Assessment: measures if the student meets the basic standards of the program. Utilizing the TSA rubric the student self-assesses their skill sets, which provides the opportunity for the student to improve prior to graduation.</p> <p>Course level assessment: project based assessment-course rubrics are generally not used because the prints provide the expected outcomes. Prints used for projects: benefit of this process is that it reflects the reality of how they will approach the project in the workplace.</p> <p>Assessment measures exceed the level of the course competencies in the WIDS. Based on student assessment data, deviations are made to classroom projects.</p>	
Select one PLUS item and explain the root cause:	Course level assessment: project based assessment-course rubrics are generally not used because the prints provide the expected outcomes. Prints used for projects: benefit of this process is that it reflects the reality of how they will approach the project in the workplace: The print provides an industry standard rubric. The approach more closely assimilates the workplace experience.
Select one DELTA item and explain the root cause:	
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	Course level assessment: project based assessment-course rubrics are generally not used because the prints provide the expected outcomes.

considered a BEST PRACTICE OR INNOVATION?	Prints used for projects: benefit of this process is that it reflects the reality of how they will approach the project in the workplace: The print provides an industry standard rubric. The approach more closely assimilates the workplace experience.
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Team Rating			
Please indicate by an (X) the team rating of your program on this category.			

<i>All areas need improvement</i>	<i>Some areas meet expectations, but most areas need improvement</i>	<i>All areas meet expectations —few areas need improvement</i>	<i>Exemplary—all areas exceed expectations—use as a model for other programs</i>
			X

Additional Comments: (optional)			
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SELF-STUDY CATEGORY RESULTS

Program and Category	
Program: Machine Tool Operation Category: Advisory Committees	
PLUSES (Strengths)	DELTAS (Opportunities)
<p>Membership is reviewed on an annual basis.</p> <p>Membership is balanced between employees and employers.</p> <p>The chair is instrumental in running the meeting with it being a rotating position. Committee meets in the fall and spring semester.</p> <p>Standard agenda items are covered at each meeting. Minutes are documented and reflect changes approved by the committee.</p> <p>Active support from all committee members, including program review, recruitment, material donations.</p>	<p>Occasional representation of General Studies and Student Services is currently occurring.</p>
<p>Select one PLUS item and explain the root cause:</p>	<p>Active support from all committee members, including program review, recruitment, material donations: committee members recognize the importance of supporting the Machine Tool Program, they reap the benefits of the higher-skilled graduates with a skill set desired by employers.</p>
<p>Select one DELTA item and explain the root cause:</p>	<p>Occasional representation of General Studies and Student Services is currently occurring. Better planning and greater importance placed on attendance.</p>
<p>What items in this category MUST be addressed on our improvement plan?</p>	<p>Occasional representation of General Studies and Student Services is currently occurring. Better planning and greater importance placed on attendance.</p>
<p>What items in this category MIGHT be addressed on the improvement plan?</p>	
<p>What items in this category may be considered a BEST PRACTICE OR INNOVATION?</p>	<p>Active support from all committee members, including program review, recruitment, material donations: committee members recognize the importance of supporting the Machine Tool Program, they reap the benefits of the higher-skilled graduates with a skill set desired by employers.</p>

Team Rating

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

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

SELF-STUDY CATEGORY RESULTS

Program and Category	
Program: Machine Tool Operation Category: Equipment and Facilities	
PLUSES (Strengths)	DELTAS (Opportunities)
<p>Current shop equipment is in good shape. A gradual replacement of older manual machines with CNC's will serve the program needs.</p> <p>Program uses MasterCam, Solidworks, Fanuc, Haas, Milltronics controllers and complies with local industry needs.</p> <p>Equipment is ordered and installed in a timely basis.</p> <p>Program has received numerous donations of equipment, stock, and labor.</p> <p>Facilities are meeting student and curricular needs.</p> <p>WITC has an annual planning process for equipment, facility, and budgeting.</p> <p>When new equipment is in the planning stage, the facilities managers are included in the process.</p> <p>We currently do not have any safety issues. Recent DMI safety inspection was completed and all recommendations were implemented.</p>	<p>Although the facilities are adequate, additional square footage would enhance the program by improving functionality.</p>
<p>Select one PLUS item and explain the root cause:</p>	<p>Program uses MasterCam, Solidworks, Fanuc, Haas, Milltronics controllers and complies with local industry needs: The advisory board and local industries support the use the state-of- the-art equipment.</p>
<p>Select one DELTA item and explain the root cause:</p>	<p>Although the facilities are adequate, additional square footage would enhance the program by improving functionality: With the transition from manual equipment to CNC equipment, it will be necessary to decrease student stations, ultimately decreasing enrollment or increasing the square footage for training.</p>
<p>What items in this category MUST be addressed on our improvement plan?</p>	

<p>What items in this category MIGHT be addressed on the improvement plan?</p>	<p>Although the facilities are adequate, additional square footage would enhance the program by improving functionality: With the transition from manual equipment to CNC equipment, it will be necessary to decrease student stations, ultimately decreasing enrollment or increasing the square footage for training.</p>		
<p>What items in this category may be considered a BEST PRACTICE OR INNOVATION?</p>			
<p>Team Rating</p> <p>Please indicate by an (X) the team rating of your program on this category.</p>			
<p><i>All areas need improvement</i></p>	<p><i>Some areas meet expectations, but most areas need improvement</i></p>	<p><i>All areas meet expectations —few areas need improvement</i></p>	<p><i><u>Exemplary</u>—all areas exceed expectations—use as a model for other programs</i></p>
		<p>X</p>	
<p>Additional Comments: (optional)</p>			

SELF-STUDY CATEGORY RESULTS

Program and Category	
Program: Machine Tool Operation Category: Staff Development and Program Innovation	
PLUSES (Strengths)	DELTAS (Opportunities)
<p>Instructor stays current by staff development and working in the machining industry. Networking with people from industry keeps the program updated.</p> <p>Performance reviews are conducted on an annual basis; this includes goals and Individual Learning Plans (ILP's).</p> <p>Student evaluations of instruction are conducted every semester.</p> <p>Performance reviews are completed in a timely manner.</p>	<p>Professional development is needed for coordinate measuring machines (CMM) and programing skills for Custom Macro B.</p>
<p>Select one PLUS item and explain the root cause:</p>	<p>Instructor stays current by staff development and working in the machining industry. Networking with people from industry keeps the program updated: To meet current industry needs ongoing staff development has been a priority.</p>
<p>Select one DELTA item and explain the root cause:</p>	<p>Professional development is needed for coordinate measuring machines (CMM) and programing skills for Custom Macro B.</p>
<p>What items in this category MUST be addressed on our improvement plan?</p>	
<p>What items in this category MIGHT be addressed on the improvement plan?</p>	<p>Professional development is needed for coordinate measuring machines (CMM) and programing skills for Custom Macro B.</p>
<p>What items in this category may be considered a BEST PRACTICE OR INNOVATION?</p>	<p>Instructor stays current by staff development and working in the machining industry. Networking with people from industry keeps the program updated.</p>

Team Rating

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

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

SELF-STUDY CATEGORY RESULTS

Program and Category	
Program: Machine Tool Operation Category: Collaboration Across the College	
PLUSES (Strengths)	DELTAS (Opportunities)
<p>Academic Affairs staff collaborates with program instructors to ensure program improvements such as curriculum, assessment, and technical skills attainment.</p> <p>Program instructor collaborate regularly with General Studies faculty to create assignments relevant to the training program, including a textbook specific to the MTO program, Employment Services, resume building, math, human relations, and communication applications specific to program outcomes.</p> <p>Marketing and Recruitment is accomplished by going to High Schools, Trade and Technical nights, High School Career Day, On campus program showcasing, and individual student shadowing. Career Specialist visits all the area high schools. Attends area industries with MTO instructor.</p> <p>The students are referred to Study Skills to improve math, reading, and writing skills. Peer tutors are available on a need basis.</p> <p>Student Services and instructor collaborate frequently from admission to graduation through program shadowing, early alert counseling services, and employment services.</p> <p>Academic Advising is a team effort between General Studies instructors, Student Services, program instructors, and counselors.</p> <p>Continuing Education: Contract classes with high school and local industries. Collaboration with Continuing Education evening MTO instructor.</p>	<p>To meet admissions requirements we need to offer ABE classes.</p>

Select one PLUS item and explain the root cause:	Marketing and Recruitment is accomplished by going to High Schools, Trade and Technical nights, High School Career Day, On campus program showcasing, and individual student shadowing. Career Specialist visits all the area high schools. Attends area industries with MTO instructor: To meet industry demands and maintain a vibrant machine tool program.		
Select one DELTA item and explain the root cause:	To meet admissions requirements we need to offer ABE classes: Many students apply that are weak in their math and communication skills. Taking ABE classes will help them improve their success rate and retention.		
What items in this category MUST be addressed on our improvement plan?			
What items in this category MIGHT be addressed on the improvement plan?	To meet admissions requirements we need to offer ABE classes: Many students apply that are weak in their math and communication skills. Taking ABE classes will help them improve their success rate and retention.		
What items in this category may be considered a BEST PRACTICE OR INNOVATION?	Marketing and Recruitment is accomplished by going to High Schools, Trade and Technical nights, High School Career Day, On campus program showcasing, and individual student shadowing. Career Specialist visits all the area high schools. Attends area industries with MTO instructor.		
Team Rating			
Please indicate by an (X) the team rating of your program on this category.			
<i>All areas need improvement</i>	<i>Some areas meet expectations, but most areas need improvement</i>	<i>All areas meet expectations —few areas need improvement</i>	<i>Exemplary—all areas exceed expectations—use as a model for other programs</i>
		X	
Additional Comments: (optional)			

WITC QRP PERKINS DATA REVIEW

QRP SCORECARD

31-420-1 – Machine Tool Operation

WTCS State Indicator	2013				
	Total In Cohort	Total Achieved	Actual	WITC Threshold	WITC Target
C200 Course Completion	20	15	75.00%	61.52%	96.92%
C400 Special Populations Course Completion	18	13	72.22%	60.13%	97.66%
C600 Minority Course Completion	3	1	33.33%	NA	100.00%
F200 Second Year Retention	17	14	82.35%	58.22%	100.00%
F651 One Year Graduation	18	11	61.11%	NA	84.44%
F851 Second Year Graduation	17	14	82.35%	40.79%	100.00%
I300 Job Placement - All Employment	8	7	87.50%	71.82%	100.00%
I600 Job Placement - Related Employment	8	6	75.00%	13.13%	100.00%
J500 Non-Traditional Gender	20	2	10.00%	NA	53.83%
J650 NTO Graduation	13	2	15.38%	NA	25.00%

WTCS State Indicator	2012			2011		
	Total in Cohort	Total Achieved	Actual	Total in Cohort	Total Achieved	Actual
C200 Course Completion	18	16	88.89%	10	8	80.00%
C400 Special Populations Course Completion	13	13	100.00%	7	5	71.43%
C600 Minority Course Completion	1	1	100.00%	1	1	100.00%
F200 Second Year Retention	8	7	87.50%	19	13	68.42%
F651 One Year Graduation	17	12	70.59%	8	7	87.50%
F851 Second Year Graduation	Additional indicator added in 2013.					
I300 Job Placement – All Employment	7	7	100.00%	7	6	85.71%
I600 Job Placement Related Employment	7	6	85.71%	7	6	85.71%
J500 Non-Traditional Gender	18	0	0.00%	10	0	0.00%
J650 NTO Graduation	13	0	0.00%	8	0	0.00%

PERKINS SCORECARD

31-420-1 Machine Tool Operation											
	Total N	1P1	Total N	1P2	Total N	2P1	Total N	3P1	2P1+3P1	Total N	4P1
FAUPL (Benchmark)		82.22		83.71		55.00		11.28	66.78		90.41
2010	7	85.71	6	100.00	7	85.71	7	0.00	85.71	10	100.00
2011	9	100.00	9	100.00	9	77.78	9	0.00	77.78	6	66.67
2012	14	78.57	14	81.43	14	78.57	14	0.00	78.57	9	88.89
2013	10	90.00	10	70.00	10	100.00	10	0.00	100.00	11	100.00
4 Year Average		88.57		87.86		85.52		0.00	85.52		88.89

Terminology	Definition
FAUPL or NPL or PL	Percentage benchmark the program must meet or exceed.
Total N	The number of students in the cohort of the specified year listed.
1P1	Program technical course completion percentage.
1P2	Program general studies course completion percentage.
2P1	Program degree attainment percentage.
3P1	Program retention/transfer percentage.
2P1 + 3P1	Degree attainment + retention percentage.
4P1	Job placement percentage reported at six-month graduate survey.

WTCS PERKINS SCORECARD ANALYSIS WORKSHEET

Program:	Machine Tool Operation 31-420-1			
Indicator	Actual	Benchmark	Not met (X)	What practices might be causing this performance and what potential actions could be taken to improve this score?
1P1 Technical Course Completion	2013 – 90.00 4 yr. avg. – 88.57	82.22		
1P2 Academic (General Studies) Course Completion	2013 – 70.00 4 yr. avg. – 88.76	83.71	X	1P2 has been a strong indicator historically for this program. The four year average is well above the target. For year 2013 the target was not met. The small number of students has made this a questionable statistic. This area must be watched closely over the next few years.
2P1 Degree Attainment (Completion)	2013 – 100.00 4 yr. avg. – 85.52	55.00		These high statistics reflect the efforts of WITC instructors and staff.
3P1 Retention/ Transfer	2013 – 0.00 4 yr. avg. – 0.00	11.28	X	Because 2P1 is so high 3P1 has not met the target. 2P1 and 3P1 indicates that this is a strong program.
2P1+3P1	2013 – 100.00 4 yr. avg. – 85.52	66.78		
4P1 Placement (6-month survey)	2013 – 100.00 4 yr. avg. – 88.89	90.41		Machine Tool Operation graduates believe they have received a high quality education at WITC.

WTCS QRP SCORECARD ANALYSIS WORKSHEET

Program:	Machine Tool Operation 31-420-1			
Target Analysis				
Indicator	Actual	Threshold	Target	Best Practice or Innovation – Describe and include how this has contributed to your high actual results for this indicator.
I600 Job Placement – Related Employment	75.00%	13.13%	100.00%	Students receive a quality machining education. This results in high placement in the profession. Education is an effort conducted by program instructors, general education instructors, college staff and industry representatives.
Threshold Analysis				
Indicator	Actual	Threshold	Target	Potential Action – Describe what action(s) could possibly be taken to improve this indicator and why it might work.
C200 Course Completion	75%	61.52%	96.92%	This indicator was 80% in 2011 and 88.89% in 2012. This statistic should be monitored closely to determine what actions should be taken.

FUTURE TRENDS AND EXTERNAL FACTORS

Program	Machine Tool Operation 31-420-1
Future Trends	
•	Demand for machinist to continue as baby boomers retire.
•	Computer numerical controlled machine usage will continue. The need for programming skills will continue to grow.
•	The need for manual operation of machine tool equipment must continue to support mining, shipping and the railroads.
•	
•	
Employment Trends	
Local	
•	The local need for machinist is projected to increase over the next ten years
•	
State	
•	Statewide the need for machinist continues to expand.
•	
External Factors	
•	Funding sources for Technical Colleges
•	Economy
•	
•	
•	

IMPROVEMENT PLANS

ACADEMIC PROGRAM IMPROVEMENT PLAN

PROGRAM: Machine Tool Operation 31-420-1					
Defined Outcome: Increased representation of General Studies and Student Services at Advisory Committee meetings.	QRP Indicator #	Perkins Indicator #	Responsibility	Timeline	Resources
Action Plan/Action Items: Invite General Studies and Student Services representative to each advisory committee meetings to ensure their attention.			Program Instructors Program Dean Campus Dean of Students General Studies Dean	2014 - 2015	N/A
<p>Update: (A mid-year and year-end update will be required each year during implementation.)</p> <p>January 2015: This was not done in the spring. Postponed until fall 2015.</p> <p>June 2015: Deferred to fall 2015</p> <p>January 2016: Student Services staff was represented and contributed to meeting. Will plan to invite Pat Kinney and/or Allison Klawiter or Donna Illsley-Jones and a student to the next advisory committee in the fall 2016.</p> <p>June 2016: Pat Kinney, Alison Klawiter and Donna Illsley-Jones were invited but were not available for either meeting this fall or spring.</p> <p>January 2017: Donna Illsley-Jones attended the meeting this fall 2016.</p>					

ACADEMIC PROGRAM IMPROVEMENT PLAN

PROGRAM: Machine Tool Operation 31-420-1					
Defined Outcome: Explore course changes from Math 364 to Math 365	QRP Indicator #	Perkins Indicator #	Responsibility	Timeline	Resources
<p>Action Plan/Action Items: Meeting between Math instructors and program instructors to determine the course differences.</p> <p>Discuss Math course content for Math 364 and 365 to determine best fit for Machining industry.</p> <p>Implement Math change if supported by the advisory committee.</p>			<p>Program Instructors Math Instructors Academic Dean General Studies Dean</p> <p>Program Instructors Math Instructors Academic Dean</p> <p>Program Instructors Academic Dean Curriculum Specialist</p>	2015	N/A
<p>Update: (A mid-year and year-end update will be required each year during implementation.) January 2015: Deferred until fall due to needing more input from advisory committee. June 2015: Deferred to fall 2015 January 2016: Pat Kinney's initiative. Carl and Karen will investigate the data supporting the possibility of implementation. June 2016: Pat responded and agreed that the curriculum could be updated to offer Math 365 instead of Math 364. Karen will work on implementing this course change. January 2017: Karen is working with Ted and change from 364 to 365 should be implemented fall 2017.</p>					

ACADEMIC PROGRAM IMPROVEMENT PLAN

PROGRAM: Machine Tool Operation 31-420-1					
Defined Outcome: Monitor Academic (General Studies) Course Completion (At 70 for year 2013; below benchmark of 83.71. Four year average above benchmark.)	QRP Indicator #	Perkins Indicator #	Responsibility	Timeline	Resources
		1P1			
Action Plan/Action Items: Meet with General Studies Instructors/General Studies Academic Dean to determine input. Monitor Perkins data in 2014 Monitor Perkins data in 2015 Determine if action should be put in place after monitoring of Perkins data for 2014 and 2015, if there are additional low years.			Academic Dean Program Instructors General Studies Dean	2014-2015	N/A
			Program Instructors Academic Dean	2014-2015	N/A
			Program Instructors Academic Dean	2015-2016	N/A
			Program Instructors Academic Dean	2015-2016	N/A
Update: (A mid-year and year-end update will be required each year during implementation.) January 2015: Investigating 2014 data June 2015: Have not reviewed Perkins data with faculty. Will continue to investigate. Percentages were investigated to identify that Perkins data to include withdrawals or not include withdrawals. WITC data has been identified as not including withdrawals. January 2016: In March 2016, Carl and Karen will investigate and report the newest data that should support the benchmark being obtained. June 2016: Data was collected and researched to find that the benchmarks were made so now Karen will investigate where the false data came from and report back. January 2017: No new information to report at this time.					