

Manufacturing Technology Program Review

2011-2012

1. Program Description

A. Description

The Manufacturing Technology Department offers the opportunity for students to excel by providing the latest information and technology in both the lecture and laboratory settings. The Manufacturing Technology program has included the most modern software and hardware to provide a good environment for learning. The inclusion of new computer controlled laser technology and continuing the use of general manufacturing process technology gives the students access to industrial tools and technologies found in industry. A comprehensive set of undergraduate courses are offered for students interested in working toward the completion of proficiency awards in CNC Operation and Manufacturing Applications, transfer classes for university credit and general interest courses for the returning student looking for skill improvement and employment in local industry.

B. Program Student Learning Outcomes - Successful students in the program are able to:

1. Demonstrate the ability to interpret and apply technical information from mechanical blueprints and manufacturing process drawings.
2. Perform precision measurement on manufactured products.
3. Plan for and devise machining operations per manufacturing process drawings.
4. Analyze and apply shop safety.
5. Determine manufacturability of products and verify safe manufacturing procedures

C. College Level Student learning Outcomes

1. Critical Thinking and Problem Solving
2. Communication
3. Information Competency

D. Estimated Costs (Required for Certificate of Achievement ONLY)

	Cost
Enrollment Fees	
Books	
Supplies	
Total	

E. Criteria Used for Admission

F. Vision

Ventura College will be a model community college known for enhancing the lives and economic futures of its students and the community.

G. Mission

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Ventura College, one of the oldest comprehensive community colleges in California, provides a positive and accessible learning environment that is responsive to the needs of a highly diverse student body through a varied selection of disciplines, learning approaches and teaching methods including traditional classroom instruction, distance education, experiential learning, and co-curricular activities. It offers courses in basic skills; programs for students seeking an associate degree, certificate or license for job placement and advancement; curricula for students planning to transfer; and training programs to meet worker and employee needs. It is a leader in providing instruction and support for students with disabilities. With its commitment to workforce development in support of the State and region's economic viability, Ventura College takes pride in creating transfer, career technical and continuing education opportunities that promote success, develop students to their full potential, create lifelong learners, enhance personal growth and life enrichment and foster positive values for successful living and membership in a multicultural society. The College is committed to continual assessment of learning outcomes in order to maintain high quality courses and programs. Originally landscaped to be an arboretum, the College has a beautiful, park-like campus that serves as a vital community resource.

H. Core Commitments

Ventura College is dedicated to following a set of enduring Core Commitments that shall guide it through changing times and give rise to its Vision, Mission and Goals.

- Student Success
- Respect
- Integrity
- Quality
- Collegiality
- Access
- Innovation
- Diversity
- Service
- Collaboration
- Sustainability
- Continuous Improvement

I. Degrees/Certificates

Program's courses are designed to articulate to UC and CSU for transfer students.
Proficiency Award – CNC Machine Operator and/or Manufacturing Applications

J. Program Strengths, Successes, and Significant Events

1. The Manufacturing Technology program continues to produce students with basic skills in a variety of technologies including Blueprint Reading, Inspection/Quality, General Machine Technology and Applications, Manufacturing Processes, (CAD/CAM)Computer Aided Design/Computer Aided Manufacturing, (CNC) Computer Numerical Control Programming , (CNC) Computer Numerical Control Machine tool setup and operation and other related technologies.
2. The Program has supported local High School "First Robotics" clubs with expertise and technical support in the design and manufacture of robot parts and assemblies. These high school teams have gone on to compete on a national level.

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3. The Manufacturing Technology faculty continues to represent Ventura College on committees such as the Basic Skills subcommittee of the WIB- Ventura County Workforce Investment Board, the Hueneme High School Advisory board for the Engineering and Design Careers Pathway program and other program focused high school advisory boards and local professional groups.

4. This year is the third year of Faculty participation in the NSF National Science Foundation ATE grant "STEM Education through the design and manufacture of solid body electric guitars". This project provides innovative professional development to high school and college faculty in collaborative design and rapid manufacturing.

5. The Manufacturing program suffered through the 2 years of construction during the remodel of the laboratory and classroom space in the S building, now the WAM building. As the Auto and Welding programs moved off campus the Manufacturing program continued to offer classes in a space where the windows were removed and the sink was replaced with a 5 gallon plastic bucket on the floor. The students and staff deserve to be recognized for their dedication and hard work to offer a top notch program under these conditions.

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K. Organizational Structure

President: Robin Calote

Executive Vice President: Ramiro Sanchez

Assistant Dean: Jerry Mortensen

Department Chair:

Instructors and Staff

Name	Rabe, P. Scott	
Classification	Professor	
Year Hired	1984	
Years of Work-Related Experience		
Degrees/Credentials	B.A.	

Name	Mike Hoffman
Classification	Part time instructor
Year Hired	1990
Years of Work-Related Experience	
Degrees/Credentials	B.A. M.A.

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2. Performance Expectations

A. Program Student Learning Outcomes - Successful students in the program are able to:

1. Demonstrate the ability to interpret and apply technical information from mechanical blueprints and manufacturing process drawings.
2. Perform precision measurement on manufactured products.
3. Plan for and devise machining operations per manufacturing process drawings.
4. Analyze and apply shop safety.
5. Determine manufacturability of products and verify safe manufacturing procedures

B. Student Success Outcomes

1. The program will work to maintain and improve its retention rate from the average of the **program's** prior three-year retention rate. The retention rate is the number of students who finish a term with any grade other than W or DR divided by the number of students at census.
2. The program will work to maintain and improve its retention rate from the average of the **college's** prior three-year retention rate. The retention rate is the number of students who finish a term with any grade other than W or DR divided by the number of students at census.
3. The program will work to maintain and improve the student success rates from the average of the **program's** prior three-year success rates. The student success rate is the percentage of students who receive a grade of C or better.
4. The program will work to maintain and improve the student success rates from the average of the **college's** prior three-year success rates. The student success rate is the percentage of students who receive a grade of C or better.
5. It is expected that more students will complete the program and courses and be more successful reaching their educational goal.

C. Program Operating Outcomes

1. The program will maintain WSCH/FTEF above the current goal set by the district.
2. Inventory of instructional equipment is in need of review and revision to make it functional, current, and will then become adequate to maintain a quality-learning environment and a useful piece of information.
3. Inventory of all equipment over \$200 will be maintained and a replacement schedule will be developed. Service contracts for equipment over \$5,000 will be budgeted if funds are available.
4. The program will maintain WSCH/FTEF above the goal set by the college district.

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D. Courses to Student Learning Outcomes Map

Course to Program-Level Student Learning Outcome Mapping (CLSLO)

I: This program-level student learning outcome is **INTRODUCED** in this course.

P: This program-level student learning outcome is **PRACTICED** in this course.

M: This program-level student learning outcome is **MASTERED** in this course.

Leave blank if program-level student learning outcome is not addressed.

Courses	PLSLO #1	PLSLO #2	PLSLO #3	PLSLO #4
MTV02	I	M	P	P
MTV03	M	M	P	P
MTV04	M	I	I	I
MTV05	M	P	M	M
MTV06	M	P	M	M

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3. Operating Information

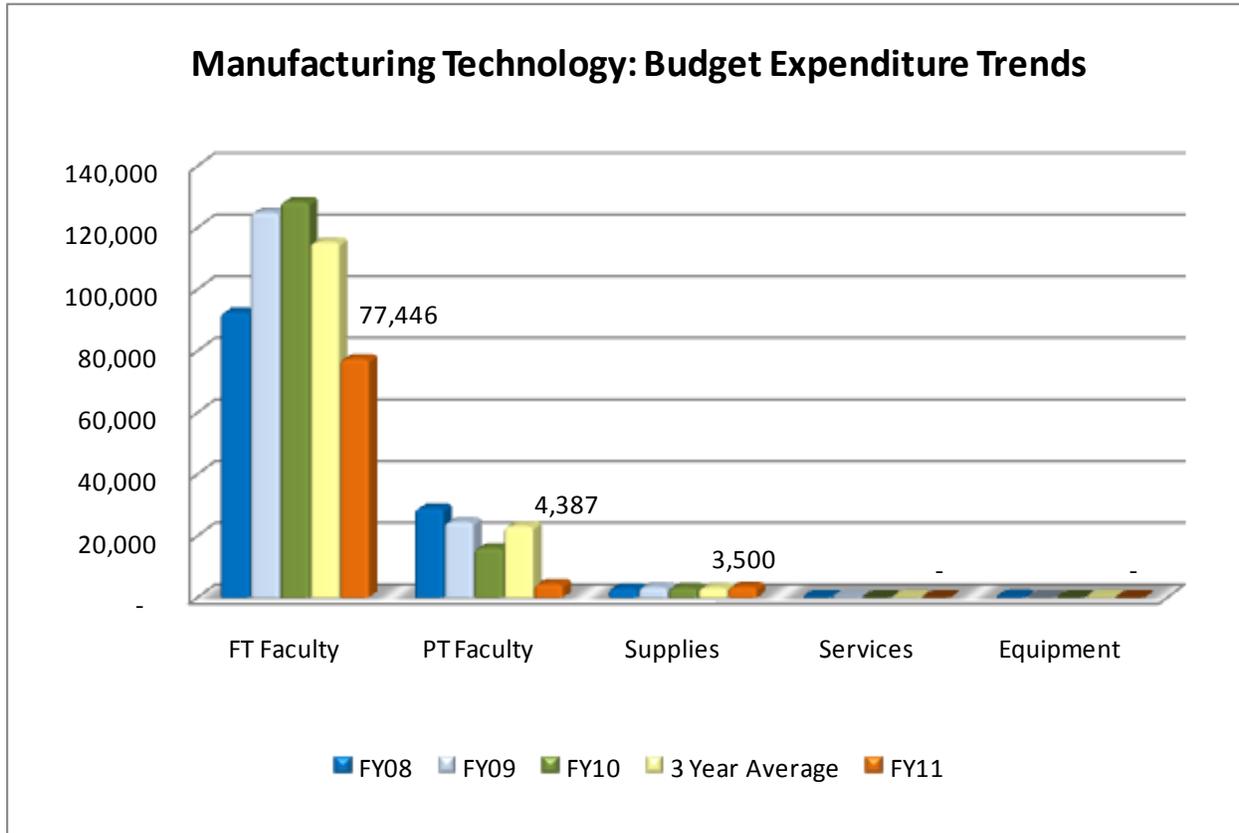
A1: Budget Summary Table

To simplify the reporting and analysis of the Banner budget detail report, the budget accounts were consolidated into nine expense categories. The personnel categories include employee payroll expenses (benefits). The “3 Year Average” was computed to provide a trend benchmark to compare the prior three year expenses to the FY11 expenses. The “FY11 College” expense percentages are included to provide a benchmark to compare the program’s expenses to the overall college expenses.

Category	Title	FY08	FY09	FY10	3 Year Average	FY11	FY11 Program	FY11 College
1	FT Faculty	92,600	124,946	128,389	115,312	77,446	-33%	12%
2	PT Faculty	28,940	24,562	16,043	23,182	4,387	-81%	-10%
7	Supplies	2,978	3,420	3,164	3,187	3,500	10%	24%
8	Services	215	300	-	258	-	-100%	-17%
9	Equipment	263	-	-	263	-	-100%	-42%
	Total	124,996	153,228	147,596	141,940	85,333	-40%	0%

A2: Budget Summary Chart

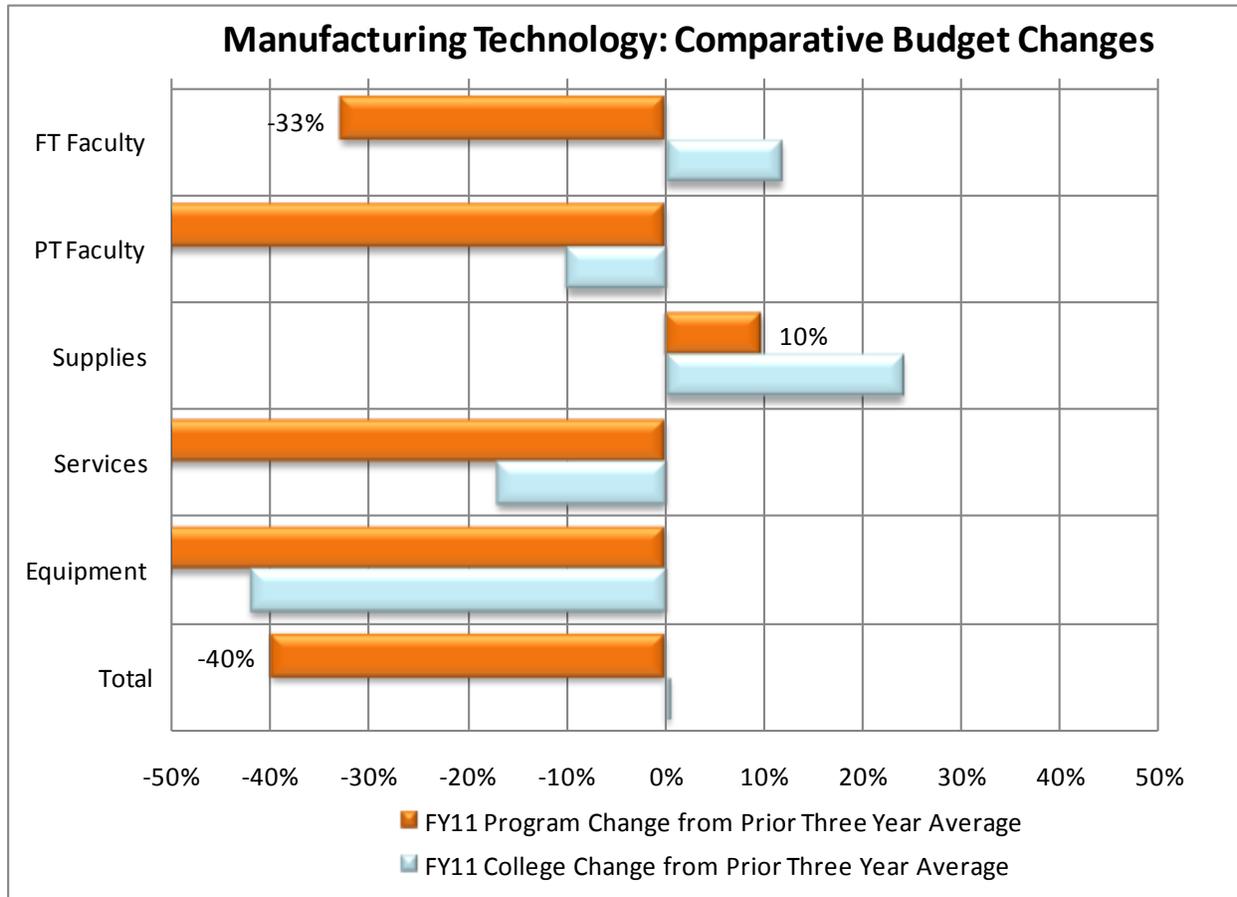
This chart illustrates the program’s expense trends. The data label identifies the FY11 expenses (the last bar in each group). The second-to-last bar is the program’s prior three year average.



A3: Comparative Budget Changes Chart

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This chart illustrates the percentage change from the prior three year average expense to the FY11 expenses. The top bar for each budget category represents the program's change in expenses and includes the data label. The second bar represents the college's change in expenses.



A4: Budget Detail Report

The program's detail budget information is available in *Appendix A – Program Review Budget Report*. This report is a PDF document and is searchable. The budget information was extracted from the District's Banner Financial System. The program budget includes all expenses associated to the program's Banner program codes within the following funds: general fund (111), designated college equipment fund (114-35012), State supplies and equipment funds (128xx), and the technology refresh fund (445). The *Program Review Budget Report* is sorted by program (in alphabetical order) and includes the following sections: total program expenses summary; subtotal program expenses for each different program code; detail expenses by fund, organization and account; and program inventory (as posted in Banner). To simplify the report, the Banner personnel benefit accounts (3xxx) were consolidated into employee type benefit accounts (3xxx1 = FT Faculty, 3xxx2 = PT Faculty, 3xxx3 = Classified, etc.).

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A5: Interpretation of the Program Budget Information

Operational information provided in Table 1 and Charts 2 and 3 do not accurately reflect the program's operating budget information. Further analysis of the program's budget information will need to be assessed. For example the table A4 has questionable data with regards to FT Faculty load that need to be reviewed.

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B1: Program Inventory Table

This chart shows the inventory (assets) as currently posted in the Banner Financial System. This inventory list is not complete and will require review by each program. Based on this review an updated inventory list will be maintained by the college. A result of developing a complete and accurate inventory list is to provide an adequate budget for equipment maintenance and replacement (total-cost-of-ownership). The college will be working on this later this fall.

Item	Vendor	Org	Fund	Purchased	Age	Price	Perm Inv #	Serial #
F73B Quality Air Cleaner w/duct	Pukite Enterpris	30086	12813	1/6/2003	8	11,819	N00003718	N/A
TC-903014 Educators Projector P	Troxell Communi	35004	114	2/3/2004	7	2,755	N00011105	G3K001023
Roland 3D Laser Scanner and So	TekPro Group In	35004	114	3/10/2004	7	10,183	N00011125	ZR70439
POWERWASHER	Premium Honda	35312	114	4/7/2003	8	2,187	N00011935	109349220
Drill Sharpener #2546-4290	Rutland Tool &	36032	121	7/7/2000	11	963	N00003537	
Item # PBE 9GR 1WD52 Electrical	Tools USA	37006	121	6/3/2008	3	8,484	N00018506	D056827
KIP 3002 (2 roll option) Digital P	Streamline Offic	37006	121	5/30/2008	3	21,782	N00018526	
Dimension SST 1200es 3D printer	Paton Group	37010	121	4/14/2009	2	24,970	N00018799	P10186
#CC519A, Multi-function Color L	Sehi Computers	37010	121	5/27/2009	2	1,993	N00018812	CNBSD02313
Part #ST7000-400 EVAP 2010 Low	SPX Corporation	37010	121	5/9/2008	3	3,212	N00018478	SY005320
Lincoln K2269 Inverter Welder V	Accu Air Gases	37010	121	5/30/2008	3	2,072	N00018632	unknown
Johnson Mitring Horizontal Ba	Accu Air Gases	37010	121	4/17/2008	3	9,118	N00018488	00577
Mahr-Federal Portable Surface	Rutland Tool &	37010	121	4/28/2008	3	2,247	N00018472	1541
ROB-34700Z, Recovery, Recyclin	Protoool	37010	121	3/24/2006	5	3,366	N00011768	162748
iMAC 1.9 Ghz 20ck	Apple Computer	37010	121	6/18/2006	5	1,501	N00011882	QP621049V4M
iMAC 1.9 Ghz 20ck	Apple Computer	37010	121	6/18/2006	5	1,501	N00011874	QP62104AV4M
Computer	Dell Computer C	37010	121	4/10/2006	5	1,381	N00011802	FP92Q91
PFM9.2 5 5 Adapter 9.2 Lathe	Pro-Cut Internati	37010	121	10/30/2006	5	9,520	N00018019	19924
Piranha III Tungsten Grinder, DG	Praxair	37010	121	6/21/2006	5	1,190	N00011963	P3-05061107-R1
Dell Power Edge 285 per quote	Dell Computer C	37010	121	6/22/2006	5	6,649	N00011945	ed New #35L1S91
Fischer Tensile Machine, Part #1	Accu Air Gases	37010	121	7/7/2006	5	17,589	N00011970	
Fischer Tensile Machine, Part #J	Accu Air Gases	37010	121	7/7/2006	5	1,957	N00011969	
Projector, 811423, Hitachi LCD C	Troxell Communi	37010	121	7/10/2006	5	1,551	N00011886	F6D004166
Subtotal Inventory for Manufac	164					592,993		
Refer to the Budget Inventory Detail in Appendix A for a complete list of items.								

B2: Interpretation of the Program Inventory Information

This data is wrong.

It looks like some of these items are listed in the wrong program for example the APPLE iMAC and Fisher Tensile Machine and other items are not connected to the Manufacturing program.

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C1: Productivity Terminology Table

Sections	A credit or non-credit class. Does not include not-for-credit classes (community education).
Census	Number of students enrolled at census (typically the 4 th week of class for fall and spring).
FTES	Full Time Equivalent Students A student in the classroom 15 hours/week for 35 weeks (or two semesters) = 525 student contact hours. 525 student contact hours = 1 FTES. Example: 400 student contact hours = $400/525 = 0.762$ FTES. The State apportionment process and District allocation model both use FTES as the primary funding criterion.
FTEF	Full Time Equivalent Faculty A faculty member teaching 15 units for two semesters (30 units for the year) = 1 FTE. Example: a 6 unit assignment = $6/30 = 0.20$ FTEF (annual). The college also computes semester FTEF by changing the denominator to 15 units. However, in the program review data, all FTE is annual. FTEF includes both Full-Time Faculty and Part-Time Faculty. FTEF in this program review includes faculty assigned to teach extra large sections (XL Faculty). This deviates from the district practice of not including these assignments as part of FTEF. However, it is necessary to account for these assignments to properly produce represent faculty productivity and associated costs.
Cross Listed FTEF	FTEF is assigned to all faculty teaching cross-listed sections. The FTEF assignment is proportional to the number of students enrolled at census. This deviates from the practice of assigning load only to the primary section. It is necessary to account for these cross-listed assignments to properly represent faculty productivity and associated costs.
XL FTE	Extra Large FTE: This is the calculated assignment for faculty assigned to extra large sections (greater than 60 census enrollments). The current practice is not to assign FTE. Example: if census > 60, 50% of the section FTE assignment for each additional group of 25 (additional tiers).
WSCH	Weekly Student Contact Hours The term "WSCH" is used as a total for weekly student contact hours AND as the ratio of the total WSCH divided by assigned FTEF. Example: 20 sections of 40 students at census enrolled for 3 hours per week taught by 4.00 FTEF faculty. $(20 \times 40 \times 3) = 2,400$ WSCH / 4.00 FTEF = 600 WSCH/FTEF.
WSCH to FTES	Using the example above: $2,400$ WSCH x 35 weeks = 84,000 student contact hours = $84,000 / 525 = 160$ FTES (see FTES definition). Simplified Formulas: $FTES = WSCH/15$ or $WSCH = FTES \times 15$
District Goal	Program WSCH ratio goal. WSCH/FTEF The District goal was set in 2006 to recognize the differences in program productivity.

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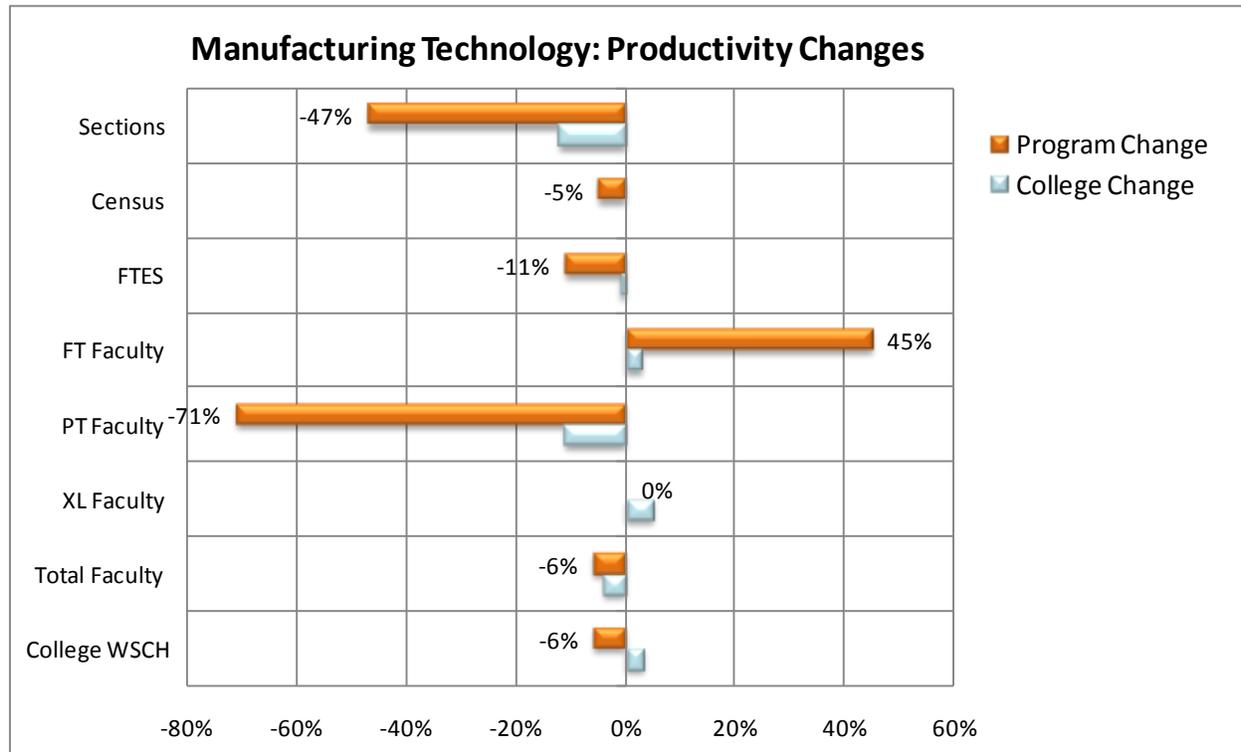
C2: Productivity Summary Table

This table is a summary of the detail information provided in the *Program Review Productivity Report*. The “3 Year Average” was computed to provide a trend benchmark to compare the results of the prior three years to the FY11 results. The “FY11 College” percentages are included to provide a benchmark to compare the program’s percentages.

Title	FY08	FY09	FY10	3 Year Average	FY11	Program Change	College Change
Sections	13	22	16	17	9	-47%	-12%
Census	156	216	211	194	184	-5%	0%
FTES	20	31	30	27	24	-11%	-1%
FT Faculty	0.23	0.61	0.67	0.51	0.73	45%	3%
PT Faculty	0.46	0.46	0.27	0.40	0.11	-71%	-11%
XL Faculty	-	-	-	-	-	0%	5%
Total Faculty	0.69	1.07	0.94	0.90	0.85	-6%	-4%
College WSCH	435	435	479	450	424	-6%	3%

C3: Comparative Productivity Changes Chart

This chart illustrates the percentage change from the prior three year average productivity to the FY11 productivity. The top bar for each budget category represents the program’s change in productivity and includes the data label. The second bar represents the college’s change in productivity.



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C4: Interpretation of the Program Productivity Information

The program target average WSCH is 350 and the actual average is 447. The program is operating at about 122% productivity.

The department will continue to work toward holding and improving these numbers.

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D1: District WSCH Ratio Productivity Table

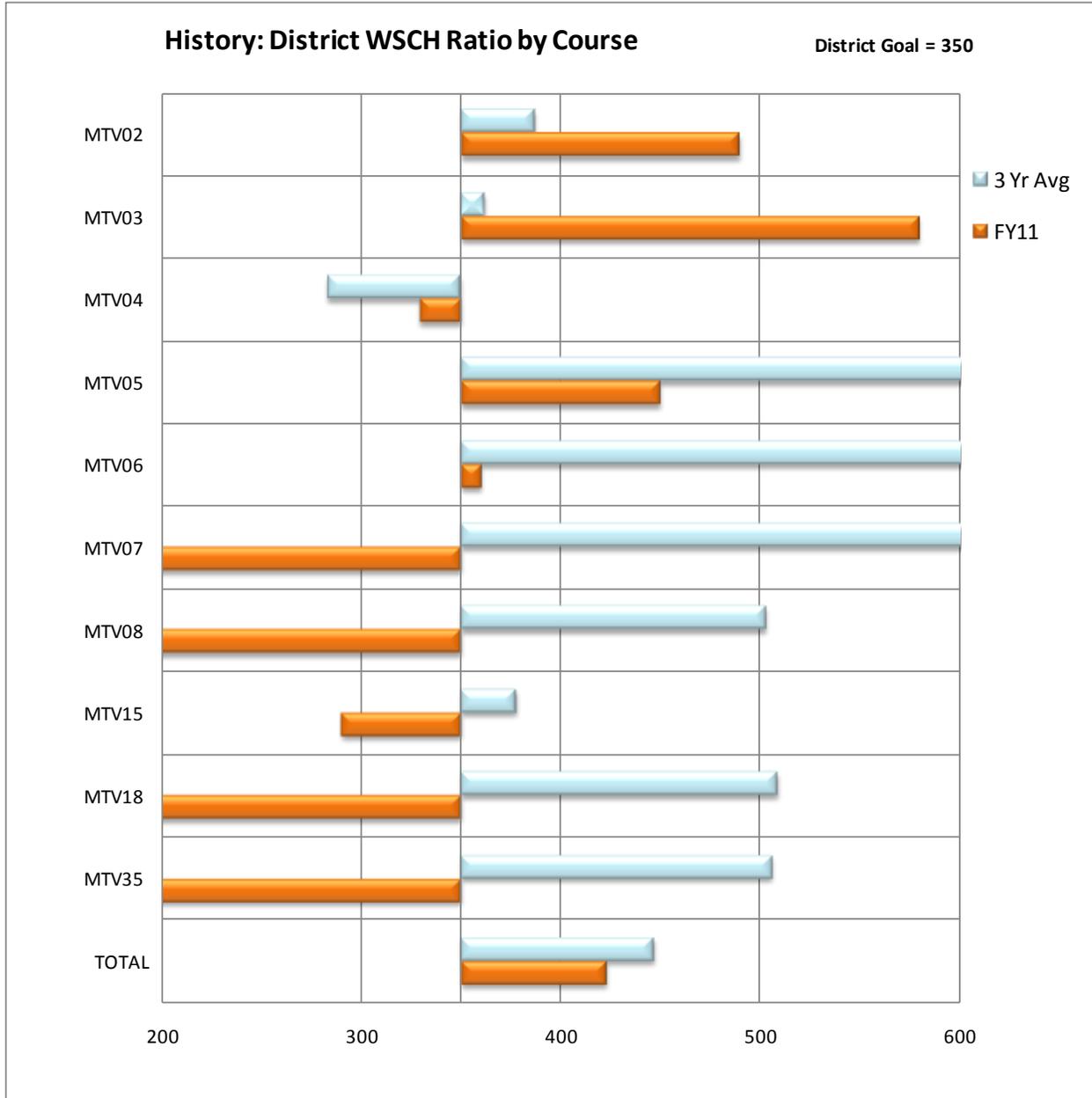
This table shows the District WSCH ratio (WSCH/FTEF) for each course by year for this program. Courses not offered during FY11 (last year) or without faculty load (independent study) are excluded. Because these are ratios, the combined average is computed using total WSCH and total FTEF (not the average of ratios). The formula used in this table distributes FTEF to all cross-listed sections (proportional to census enrollment) but does not include the associated faculty costs of extra large assignment.
District WSCH Ratio = WSCH / (PT FTE + FT FTE).

District WSCH Ratio: Weekly Student Contact Hours/(FT FTE+PT FTE)									
Course	Title	FY08	FY09	FY10	3 Yr Avg	FY11	Change	Dist Goal	% Goal
MTV02	Applied Machining I	452	325	418	387	490	27%	350	140%
MTV03	Applied Machining II	414	285	461	362	580	60%	350	166%
MTV04	Measurements and Computatio	265	249	380	283	329	16%	350	94%
MTV05	CNC Machining I	630	671	553	618	450	-27%	350	129%
MTV06	CNC Machining II	630	739	660	687	360	-48%	350	103%
MTV07	CNC Machining III	-	-	660	660	-	-100%	350	0%
MTV08	CNC Machine Tool Programmin	-	533	467	503	-	-100%	350	0%
MTV15	Manufacturing Processes	300	404	450	378	290	-23%	350	83%
MTV18	Projects in Manufacturing Tech	-	499	540	509	-	-100%	350	0%
MTV35	Cad/Cam Tooling Design	-	-	506	506	-	-100%	350	0%
TOTAL	Annual District WSCH Ratio	438	428	475	447	423	-5%	350	121%

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D2: District WSCH Ratio Productivity Chart

This chart illustrates the course level District WSCH ratio. The top bar shows the program's three year average. The second bar shows the program's FY11 WSCH ratio. The axis represents the District WSCH ratio goal set in 2006. The program's (or subject's) total WSCH ratio is shown as the TOTAL at the bottom of the chart.



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D3: College WSCH Ratio Productivity Table

This table shows the College's WSCH ratio (WSCH/FTEF) for each course by year for the program. Courses not offered during FY11 (last year) or without faculty load (independent study) are excluded. Because these are ratios, the combined average is computed using total WSCH and total FTEF (not the average of ratios). The formula used in this table includes the associated faculty costs of extra large sections. Faculty teaching extra large sections are paid stipends equal to 50% of their section FTE assignment for each group of 25 students beyond the first 60 students (calculated in this table as XL FTE). This College WSCH Ratio is a more valid representation of WSCH productivity. The College WSCH Ratio will be used in the program review process.

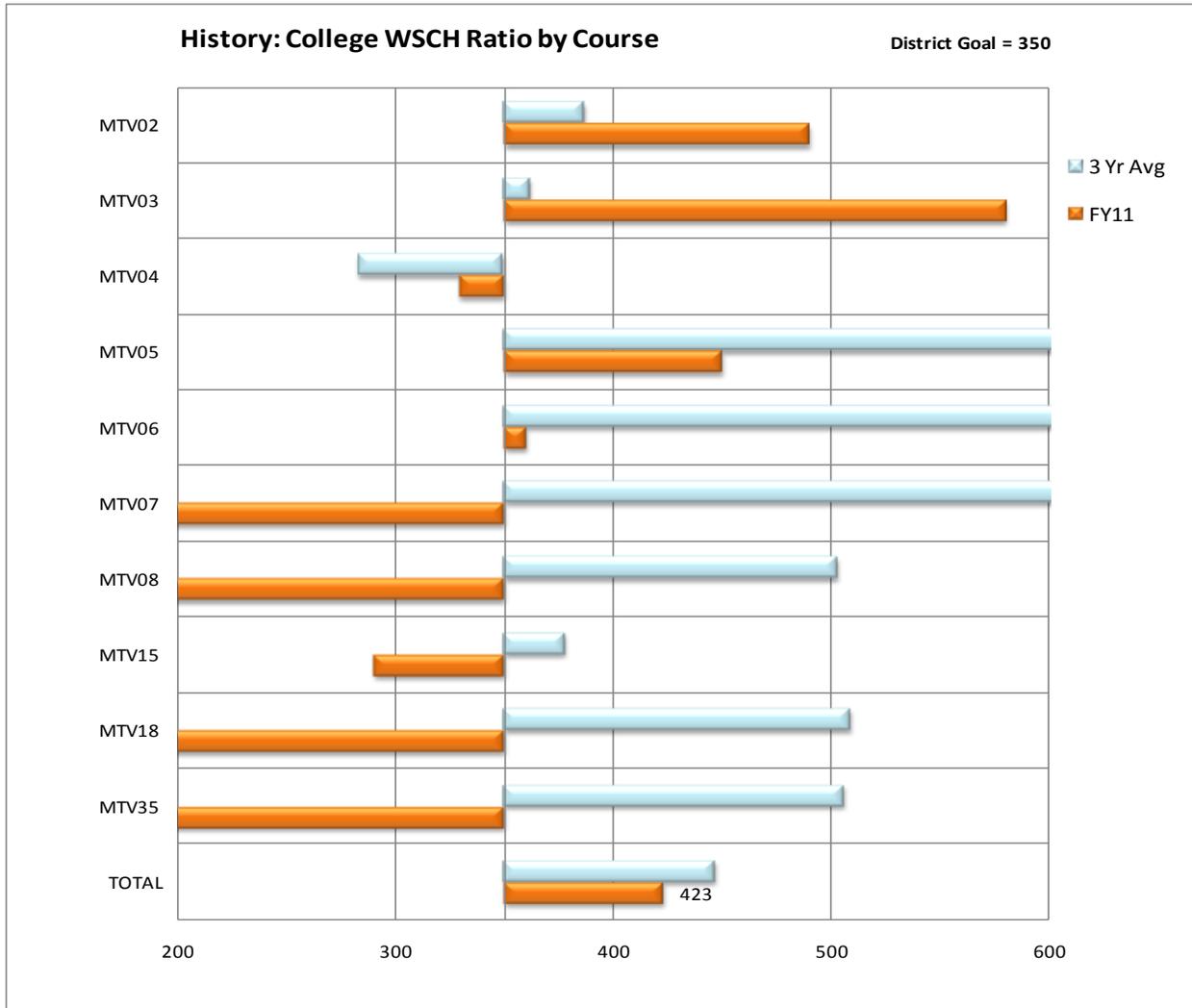
College WSCH Ratio = WSCH / (PT FTE + FT FTE + XL FTE)

College WSCH Ratio: Weekly Student Contact Hours/(FT FTE + PT FTE + XL FTE)									
Course	Title	FY08	FY09	FY10	3 Yr Avg	FY11	Change	Dist Goal	% Goal
MTV02	Applied Machining I	452	325	418	387	490	27%	350	140%
MTV03	Applied Machining II	414	285	461	362	580	60%	350	166%
MTV04	Measurements and Computatio	265	249	380	283	329	16%	350	94%
MTV05	CNC Machining I	630	671	553	618	450	-27%	350	129%
MTV06	CNC Machining II	630	739	660	687	360	-48%	350	103%
MTV07	CNC Machining III	-	-	660	660	-	-100%	350	0%
MTV08	CNC Machine Tool Programmin	-	533	467	503	-	-100%	350	0%
MTV15	Manufacturing Processes	300	404	450	378	290	-23%	350	83%
MTV18	Projects in Manufacturing Tech	-	499	540	509	-	-100%	350	0%
MTV35	Cad/Cam Tooling Design	-	-	506	506	-	-100%	350	0%
TOTAL	Annual College WSCH Ratio	438	428	475	447	423	-5%	350	121%

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D4: College WSCH Ratio Productivity Chart

This chart illustrates the course level College WSCH ratio. The top bar shows the program's three year average. The second bar shows the FY11 WSCH ratio. The axis represents the District WSCH ratio goal set in 2006. The program's (or subject's) total WSCH ratio is shown as the TOTAL at the bottom of the chart. The computation used for the College WSCH Ratio includes XL FTE (extra-large sections) and the assignment of FTEF to all cross-listed sections (proportional to census enrollment).



D5: Productivity Detail Report

The program's detail productivity information is available in *Appendix B – Program Review Productivity Report*. This report is a PDF document and is searchable. The productivity information was extracted from the District's Banner Student System. The productivity information includes all information associated with the program's subject codes. The *Program Review Productivity Report* is sorted by subject code (alphabetical order) and includes the following sections: productivity measures and WSCH ratios by course by year.

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D6: Interpretation of the Program Course Productivity Information

Some courses have been scheduled for offering every other year as the college has changed the policy regarding co-listed courses which was the norm since before 1984. The limited schedule reduces the chance that students will take a series of courses in an order that might work best. Students take courses when they are offered and not when it best fits the cycle or logical program planned progress. The concept of a program has been diminished and replaced with the course menu process by the history and the need of the college to reduce section offerings. The fact that students do not visit a college counselor but are self counseled also plays into this pattern of hit or miss by students trying to enroll in the appropriate course. Typically course numbering leads a student to guess at the correct course. The faculty will continue to counsel students and plan a course schedule that will guide the students logically through the program sequence of courses

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E1: Student Success Terminology

Census	Number of students enrolled at Census (typically the 4 th week of class for fall and spring). Census enrollment is used to compute WSCH and FTES for funding purposes.
Retain	Students completing the class with any grade other than W or DR divided by Census Example: 40 students enrolled, 5 students dropped prior to census, 35 students were enrolled at census, 25 students completed the class with a grade other than W or DR: Retention Rate = 25/35 = 71%
Success	Students completing the class with grades A, B, C, CR or P divided by Census Excludes students with grades D, F, or NC.

E2: Student Success Summary

The following two tables summarize the detail information provided in the *Appendix C - Program Review Student Success Report*. The first table shows the number of students. The second table shows the percentage of students. Both tables show the distribution of student grades by year for the program (subject). They show the number of students who were counted at census, completed the class (retention), and were successful. The “3 Year Average” was computed to provide a trend benchmark to compare the prior three year expenses to the FY11 success measures. The “College” success percentages are included to compare the results of the program to the results of the college.

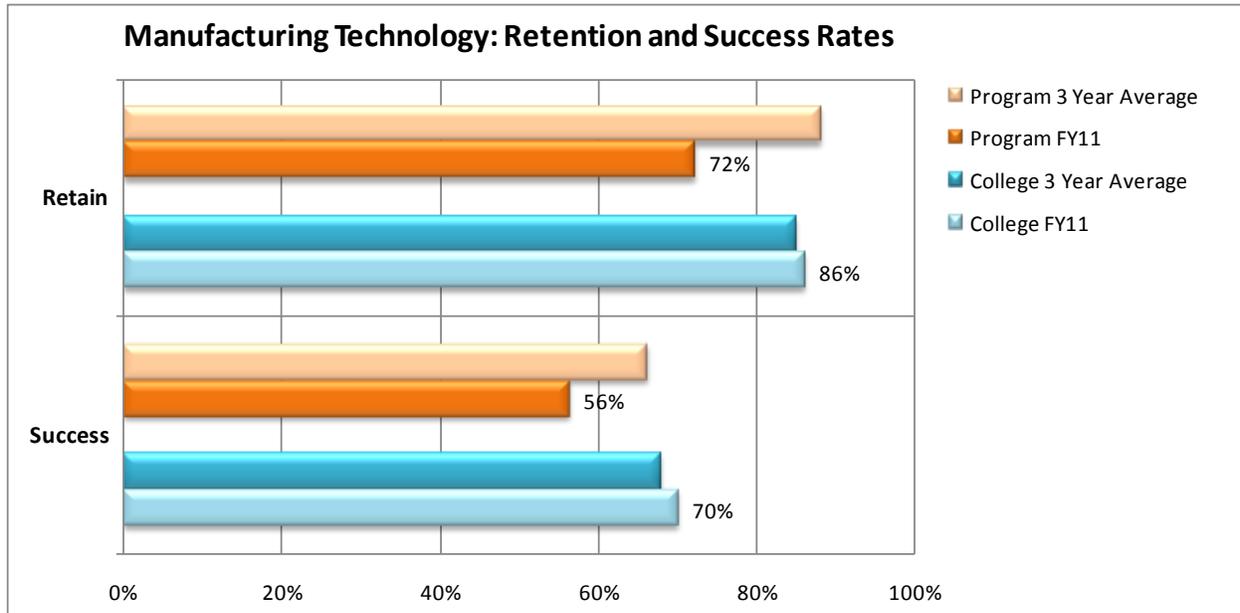
Subject	Fiscal Year	A	B	C	P/CR	D	F	W	NC	Census	Retain	Success
MT	FY08	65	23	11	-	7	27	17	-	150	133	99
MT	FY09	93	17	7	20	7	46	26	-	216	190	137
MT	FY10	95	28	19	4	1	33	28	3	211	183	146
MT	3 Year Avg	84	23	12	8	5	35	24	1	192	169	127
MT	FY11	78	19	6	-	1	28	51	-	183	132	103
Subject	Fiscal Year	A	B	C	P/CR	D	F	W	NC	Census	Retain	Success
MT	FY08	43%	15%	7%	0%	5%	18%	11%	0%		89%	66%
MT	FY09	43%	8%	3%	9%	3%	21%	12%	0%		88%	63%
MT	FY10	45%	13%	9%	2%	0%	16%	13%	1%		87%	69%
MT	Program 3	44%	12%	6%	4%	3%	18%	13%	1%		88%	66%
MT	Program FY	43%	10%	3%	0%	1%	15%	28%	0%		72%	56%
College	College 3 Yr	33%	19%	12%	5%	5%	10%	15%	2%		85%	68%
College	College FY1	33%	20%	13%	3%	5%	10%	14%	2%		86%	70%

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E3: Retention and Success Rates

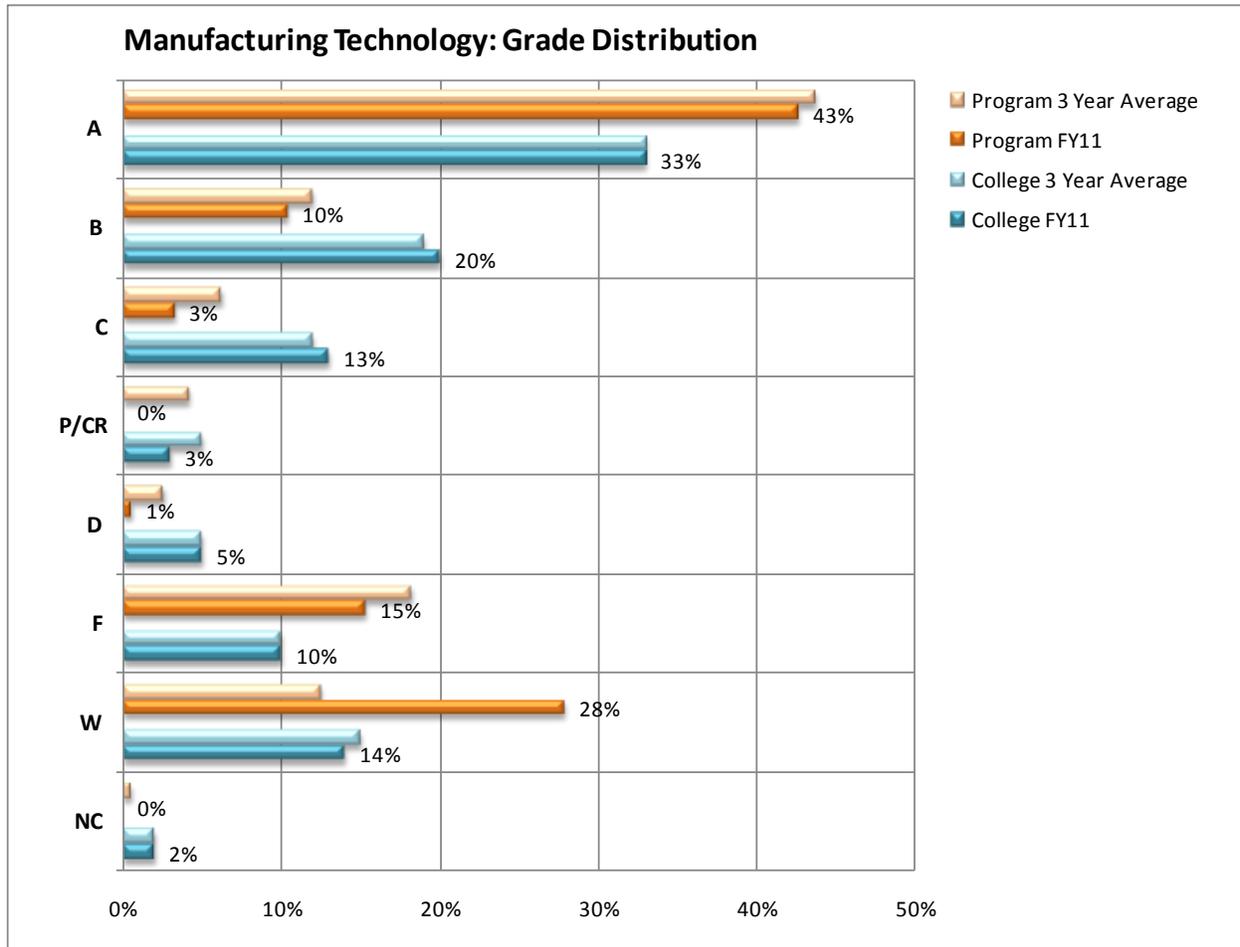
This chart illustrates the retention and success rates of students who were counted at census. Each measure has four bars. The first bar represents the program's prior three year average percent. The second bar shows last year's (FY11) percent. The third and fourth bars represent the overall college percents.



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E4: Grade Distribution

This chart illustrates the program's distribution of grades (by subject). Each grade has four bars. The first bar represents the program's prior three year average percent of grades. The second bar shows last year's (FY11) grade distribution percents. The third and fourth bars represent the overall college distribution percents.



E5: Student Success Detail Report

The program student success detail information is available in *Appendix C – Program Review Student Success Report*. This report is a PDF document and is searchable. The student success information was extracted from the District's Banner Student System. The student success information includes all information associated with the program's subject codes. The *Program Review Student Success Report* is sorted by subject code (alphabetical order) and includes the following sections: comparative summary and course detail by term. The following table defines the terminology.

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E6: Interpretation of Program Retention, Student Success, and Grade Distribution

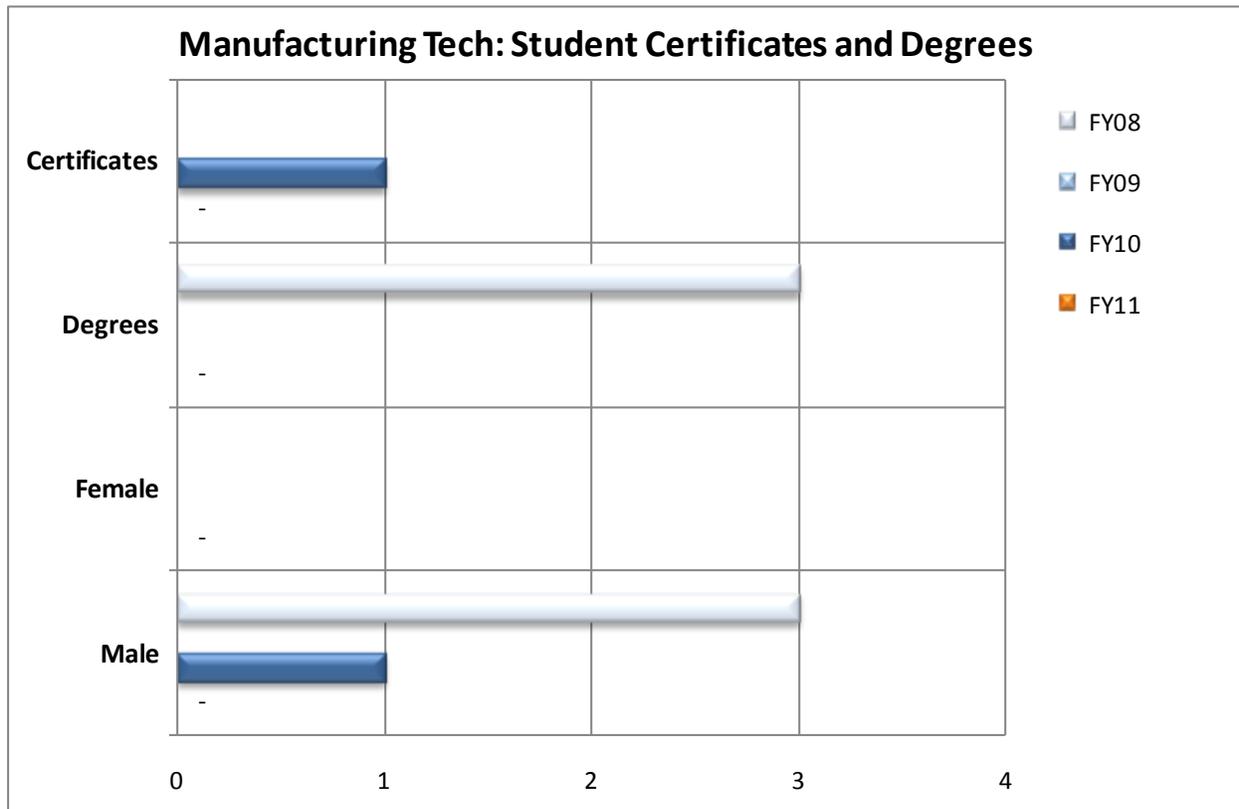
Student success was impacted the past two years with the construction and remodel of the S building, now the WAM building. The department believes the new laboratory and classroom space of both the MCE and WAM buildings will help the area of program retention and student success. The grade distribution is a reflection of the focus and determination of the students and staff. Job placement and work place success are areas the department is looking to for data collection.

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F1: Program Completion – Student Awards

This table shows the number of students who completed a program certificate or degree during the fiscal year. Gender distribution is included. The following chart illustrates this information.

Program	FY	Certificates	Degrees	Female	Male
Machining and Machine T	FY08	-	3	-	3
Machining and Machine T	FY09	-	-	-	-
Machining and Machine T	FY10	1	-	-	1
Machining and Machine T	FY11	-	-	-	-
Total Awards in 4 Years		1	3	-	4



F2: Interpretation of the Program Completion Information

The Manufacturing Technology program came about through the combination of courses for university transfer for engineering and manufacturing engineering. The college developed work force development courses that fit into the MT program but the idea for an associates degree was shelved in favor of the (MS) Machine Shop department which offered the AS degree.

The Manufacturing program offers a Certificate of Proficiency in the area of CNC Machine Operator and/or Manufacturing Applications.

The lack of sections offered each semester and the fact that the college no longer schedules co-listed courses has reduced the number of Proficiency Certificates awarded. Students are sometime focused on a specific technology which provides employment or skill required for their current position. This focus directs them away from the certificate and toward specific courses. As the department reviews

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scheduling and adjusts the offerings to allow a linear progression through the certificate requirements we expect the number of certificates to increase. It is the intention of the department to develop the Associates degree in the future.

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G1: Student Demographics Summary Tables

This table shows the program and college census enrollments for each demographic category. It also shows the average age of the students. The program FY11 results can be compared to its prior three year average, the college FY11 results, and the college prior three year average.

Subject	FY	Hispanic	White	Asian	Afr Am	Pac Isl	Filipino	Nat Am	Other	Female	Male	Other	Avg Age
MT	FY08	69	49	2	9	-	5	-	16	5	142	3	35
MT	FY09	108	74	4	1	1	3	-	25	6	208	2	36
MT	FY10	80	97	5	2	1	1	5	20	7	203	1	33
MT	3 Year Avg	86	73	4	4	1	3	2	20	6	184	2	35
MT	FY11	82	75	10	1	-	1	2	12	6	177	-	31
College	3 Year Avg	11,806	11,169	988	1,005	217	827	403	2,302	15,888	12,694	134	27
College	FY11	13,034	10,566	977	1,040	196	886	402	1,688	15,734	13,014	40	24

This table shows the program and college percentage of census enrollments for each demographic category.

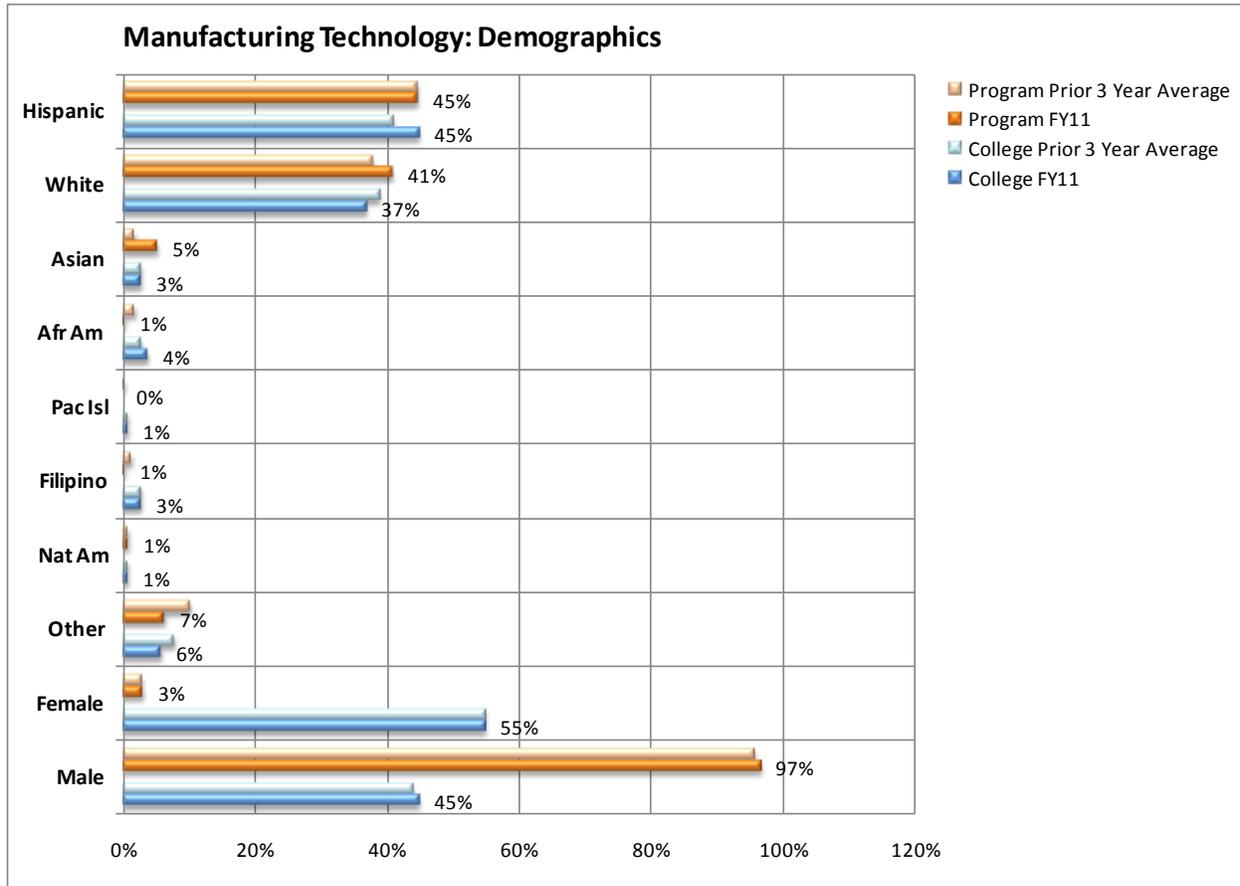
Subject	FY	Hispanic	White	Asian	Afr Am	Pac Isl	Filipino	Nat Am	Other	Female	Male	Other	Avg Age
MT	FY08	46%	33%	1%	6%	0%	3%	0%	11%	3%	95%	2%	35
MT	FY09	50%	34%	2%	0%	0%	1%	0%	12%	3%	96%	1%	36
MT	FY10	38%	46%	2%	1%	0%	0%	2%	9%	3%	96%	0%	33
MT	3 Year Avg	45%	38%	2%	2%	1%	2%	1%	10%	3%	96%	1%	35
MT	FY11	45%	41%	5%	1%	0%	1%	1%	7%	3%	97%	0%	31
College	3 Year Avg	41%	39%	3%	3%	1%	3%	1%	8%	55%	44%	0%	27
College	FY11	45%	37%	3%	4%	1%	3%	1%	6%	55%	45%	0%	24

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G2: Student Demographics Chart

This chart illustrates the program's percentages of students by ethnic group. . Each group has four bars. The first bar represents the program's prior three year percent. The second bar shows last year's (FY11) percent. The third and fourth bars represent the overall college percents.



G3: Student Demographics Detail Report

The program student success detail information is available in *Appendix D – Program Review Student Demographics Report*. This report is a PDF document and is searchable. The student success information was extracted from the District's Banner Student System. The student demographic information includes all information associated with the program's subject codes. The *Program Review Student Demographics Report* is sorted by subject code (alphabetical order) and includes the following sections: comparative summary by year, and detail demographics by term and course.

G4: Interpretation of the Program Demographic Information

This data looks about right

We are looking at ways to increase the numbers of female students in the program and continue supporting students with limited English language skills.

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4. Performance Assessment

A1: Program-Level Student Learning Outcomes

Program-Level Student Learning Outcome 1	Performance Indicators
Demonstrate the ability to interpret and apply technical information from mechanical blueprints and manufacturing process drawings.	Students complete projects using industry standard methods and techniques. Students will complete manufactured pieces at a high quality level.
Operating Information	
In courses with a manufacturing element, projects are measured and compared to industry tolerances. Industry level measuring tools and techniques are used to evaluate student work.	
Analysis – Assessment	
Project work is evaluated for level of precision, surface finish and productivity, The program operates at about an 80% success rate. Meeting expectations.	

Program-Level Student Learning Outcome 2	Performance Indicators
Perform precision measurement on manufactured products.	Industry level measuring tools and techniques are used to evaluate the quality of student work.
Operating Information	
Students demonstrate the correct use and application of precision measuring tools and Quality standards.	
Analysis – Assessment	
Meeting expectations and the department will continue to review.	

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Program-Level Student Learning Outcome 3	Performance Indicators
Plan for and devise machining operations per manufacturing process drawings.	Correct setup and operation of machine tools and precision measuring tools at a level of entry level machine operator.
Operating Information	
Correct setup and operation takes into account the operators safety and the safe operation of the machine tool. Machine setups are evaluated on these factors and the productivity achieved.	
Analysis – Assessment	
The technical level of the setups and operation is adequate and will be reviewed on an ongoing basis.	

Program-Level Student Learning Outcome 4	Performance Indicators
Analyze and apply shop safety.	Manufacturing environments have normal safety concerns. These safety issues are reviewed and demonstrated daily.
Operating Information	
Specific safety and point of operation work sheets are reviewed and re-enforced through daily practice.	
Analysis – Assessment	
Continued review and demonstration seems to be keeping students aware of safety concerns.	

Program-Level Student Learning Outcome 5	Performance Indicators
Determine manufacturability of products and verify safe manufacturing procedures.	Manufacturing processes are understood as to the application to the products and quality level.
Operating Information	
Planning and process evaluation work sheets are used to pre plan all project work.	
Analysis – Assessment	
The technical level of the setups and operation is adequate and will be reviewed on an ongoing basis.	

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4B: Student Success Outcomes

Student Success Outcome 1	Performance Indicators
The program will maintain or increase its retention rate from the average of the program's prior three-year retention rate. The retention rate is the number of students who finish a term with any grade other than W or DR divided by the number of students at census.	The program will maintain or increase the retention rate by 2% or more above the average of the program's retention rate for the prior three years.
Operating Information	
The Manufacturing Program's average three year retention rate is 85% The college's three year average retention rate is 85%	
Analysis – Assessment	
An Increase of 2% or more in retention rate will require the program to attain a retention rate of 87% or more. The program will work to attain this goal.	

Student Success Outcome 2	Performance Indicators
The program will maintain or increase its retention rate from the average of the college's prior three-year retention rate. The retention rate is the number of students who finish a term with any grade other than W or DR divided by the number of students at census.	The program will increase the retention rate by 2% or more above the average of the college retention rate for the prior three years.
Operating Information	
The Manufacturing program's average three year retention rate is 60% The college's three year average retention rate is 85%. The college construction and remodel project has had an impact on the retention as students opted out of fighting the poor teaching and learning environment.	
Analysis – Assessment	
The program will work to increase its retention rate.	

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Student Success Outcome 3	Performance Indicators
The program will increase the student success rates from the average of the program's prior three-year success rates. The student success rate is the percentage of students at census who receive a grade of C or better.	The program will increase student success rate by 2% or more above the program's average student success rate for the prior three years.
Operating Information	
Current data suggest that the success rate is on target.	
Analysis – Assessment	
The department will continue to make student success a priority.	

Student Success Outcome 4	Performance Indicators
The program will work to maintain and improve the student success rates from the average of the college's prior three-year success rates. The student success rate is the percentage of students who receive a grade of C or better.	The program will increase student success rate by 2% or more above the college's average student success rate for the prior three years.
Operating Information	
The success rate is below the college level and needs review with the aim toward improvement.	
Analysis – Assessment	
A percentage of Manufacturing students take a W grade and some the F grade with the intention of repeating the course. This impacts the data at the end of the year.	

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Student Success Outcome 5	Performance Indicators
Students will complete the program earning certificates and/or degrees.	Increase the number of students earning a certificate to a minimum of 20% of the number of students enrolled in second-year courses.
Operating Information	
The program will evaluate the scheduling of classes to make it easier for student to track through certificate course requirements. The current scheduling limits the number of students that are able to track through in 2 years	
Analysis – Assessment	
Continued review of data after schedule review and adjustments. Some students are attending very industry specific courses. For example returning engineers learning manufacturing processes which were not taught at the university or college they attended or the position in industry they have taken requires new skills. These students are not likely to continue through the program for a certificate.	

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C. Program Operating Outcomes

Program Operating Outcome 1	Performance Indicators
The program will maintain WSCH/FTEF above the 350 goal set by the district.	The program will exceed the efficiency goal of 350 set by the district by 2%.
Operating Information	
The program is operating at 121% of the WSCH goal.	
Analysis – Assessment	
The program will work to maintain a high WSCH.	

Program Operating Outcome 2	Performance Indicators
Inventory of instructional equipment is functional, current, and otherwise adequate to maintain a quality-learning environment. Inventory of all equipment over \$200 will be maintained and a replacement schedule will be developed. Service contracts for equipment over \$5000 will be budgeted if funds are available.	A current inventory of all equipment in the program will be maintained. Equipment having a value over \$5000 will have a service contract. A schedule for service life and replacement of outdated equipment will reflect the total cost of ownership.
Operating Information	
The inventory list is out of date and needs to be reviewed (3B1)	
Analysis – Assessment	
Review of Inventory list to be done.	

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Program Operating Outcome 3	Performance Indicators
Operating Information	
Analysis – Assessment	

Program Operating Outcome 4	Performance Indicators
Operating Information	
Analysis – Assessment	

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5. Findings

Finding 1 The program is operating by and large within current planned expectations. With the restrictions on scheduling and reductions on the number of sections, the schedule must be carefully reviewed and setup to help students move through the certificate and degree.

Finding 2 The department will continue to improve and maintain instructional equipment and tools. Improved lab space and classroom equipment will increase student success

Finding 3 The completion of the remodel project of the labs and classrooms will provide students with a much cleaner and organized facility. Access to research and reference materials will be improved and expanded. The program will look for ways to increase the number of women in the program.

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6. Initiatives

Initiative

Curriculum Content and Development

Initiative ID

Links to Finding 1

The department will review carefully the schedule to plan better the progress of students moving through the Certificate . Reviewing and investing in new technologies that reflect the needs of local industry will be a main priority for the program.

Benefits: More students will be receiving the Certificate of Proficiency in the newest possible technologies.

Request for Resources

Funding Sources

No new resources are required (use existing resources)	X
Requires additional general funds for personnel, supplies or services (includes maintenance contracts)	
Requires computer equipment funds (hardware and software)	
Requires college equipment funds (other than computer related)	
Requires college facilities funds	
Requires other resources (grants, etc.)	

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Initiative Laboratory Maintenance

Initiative ID

Links to Finding 2 Develop better inventory control and review of machine and tooling life cycle. Search for outside funding for new equipment and expansion of equipment offerings.

Benefits Equipment and tools will be in better operation and repair will kept to a minimum.

Request for Resources

Funding Sources

Please check one or more of the following funding sources.

No new resources are required (use existing resources)	X
Requires additional general funds for personnel, supplies or services (includes maintenance contracts)	
Requires computer equipment funds (hardware and software)	
Requires college equipment funds (other than computer related)	
Requires college facilities funds	
Requires other resources (grants, etc.)	

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Initiative Research and increase numbers of underrepresented groups

Initiative ID

Links to Finding 3 develop broader opportunities for research and develop planning to increase the number of underrepresented groups especially women.

Benefits More research will broaden the interest level of students and underrepresented groups. Opportunities for women in manufacturing and related fields will be increased.

Request for Resources

Funding Sources

No new resources are required (use existing resources)	X
Requires additional general funds for personnel, supplies or services (includes maintenance contracts)	
Requires computer equipment funds (hardware and software))	
Requires college equipment funds (other than computer related)	
Requires college facilities funds	
Requires other resources (grants, etc.)	

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Initiative

Initiative ID

Links to Finding 4

Benefits

Request for Resources

Funding Sources

No new resources are required (use existing resources)	
Requires additional general funds for personnel, supplies or services (includes maintenance contracts)	
Requires computer equipment funds (hardware and software)	
Requires college equipment funds (other than computer related)	
Requires college facilities funds	
Requires other resources (grants, etc.)	

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6A: Initiatives Priority Spreadsheet

The following blank tables represent Excel spreadsheets and will be substituted with a copy of the completed Excel spreadsheets.

Personnel –Faculty Requests

Other	Program	Program Priority (0, 1, 2, 3...)	Division Priority (R,H,M,L)	Committee Priority (R, H, M, L)	College Priority (R, H, M, L)	Initiative ID	Initiative Title	Resource Description	Estimated Cost	No New Resources Requested	General Fund	Other
1												
2												
3												
4												
5												

Personnel – Other Requests

Personnel - Other	Program	Program Priority (0, 1, 2, 3...)	Division Priority (R,H,M,L)	Committee Priority (R, H, M, L)	College Priority (R, H, M, L)	Initiative ID	Initiative Title	Resource Description	Estimated Cost	No New Resources Requested	New General Funds	Other
1												
2												
3												
4												
5												

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Computer Equipment and Software

Equipment - Computer Related	Program	Program Priority (0, 1, 2, 3...)	Division Priority (R,H,M,L)	Committee Priority (R, H, M, L)	College Priority (R, H, M, L)	Initiative ID	Initiative Title	Resource Description	Estimated Cost	No New Resources Requested	Technology Fund	Other
1												
2												
3												
4												
5												

Other Equipment Requests

Equipment	Program	Program Priority (0, 1, 2, 3...)	Division Priority (R,H,M,L)	Committee Priority (R, H, M, L)	College Priority (R, H, M, L)	Initiative ID	Initiative Title	Resource Description	Estimated Cost	No New Resources Requested	Equipment Fund	Other
1												
2												
3												
4												
5												

Facilities Requests

Facilities	Program	Program Priority (0, 1, 2, 3...)	Division Priority (R,H,M,L)	Committee Priority (R, H, M, L)	College Priority (R, H, M, L)	Initiative ID	Initiative Title	Resource Description	Estimated Cost	No New Resources Requested	Facilities Fund	Other
1												
2												
3												
4												
5												

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Other Resource Requests

Other Resources	Program	Program Priority (0, 1, 2, 3...)	Division Priority (R,H,M,L)	Committee Priority (R, H, M, L)	College Priority (R, H, M, L)	Initiative ID	Initiative Title	Resource Description	Estimated Cost	No New Resources Requested	General Fund	Other
1												
2												
3												
4												
5												

6B: Program Level Initiative Prioritization

All initiatives will first be prioritized by the program staff. If the initiative can be completed by the program staff and requires no new resources, then the initiative should be given a priority 0 (multiple priority 0 initiatives are allowed). All other initiatives should be given a priority number starting with 1 (only one 1, one 2, etc.).

6C: Division Level Initiative Prioritization

The program initiatives within a division will be consolidated into division spreadsheets. The dean may include additional division-wide initiatives. All initiatives (excluding the '0' program priorities) will then be prioritized using the following priority levels:

R: Required – mandated or unavoidable needs (litigation, contracts, unsafe to operate conditions, etc.).

H: High – approximately 1/3 of the total division’s initiatives by resource category (personnel, equipment, etc.)

M: Medium – approximately 1/3 of the total division’s initiatives by resource category (personnel, equipment, etc.)

L: Low – approximately 1/3 of the total division’s initiatives by resource category (personnel, equipment, etc.)

6D: Committee Level Initiative Prioritization

The division’s spreadsheets will be prioritized by the appropriate college-wide committees (staffing, technology, equipment, facilities) using the following priority levels.

R: Required – mandated or unavoidable needs (litigation, contracts, unsafe to operate conditions, etc.).

H: High – approximately 1/3 of the total division’s initiatives by resource category (personnel, equipment, etc.)

M: Medium – approximately 1/3 of the total division’s initiatives by resource category (personnel, equipment, etc.)

L: Low – approximately 1/3 of the total division’s initiatives by resource category (personnel, equipment, etc.)

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6E: College Level Initiative Prioritization

Dean's will present the consolidated prioritized initiatives to the College Planning Council. The College Planning Council will then prioritize the initiatives using the following priority levels.

R: Required – mandated or unavoidable needs (litigation, contracts, unsafe to operate conditions, etc.).

H: High – approximately 1/3 of the total division's initiatives by resource category (personnel, equipment, etc.)

M: Medium – approximately 1/3 of the total division's initiatives by resource category (personnel, equipment, etc.)

L: Low – approximately 1/3 of the total division's initiatives by resource category (personnel, equipment, etc.)

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7A: Appeals

After the program review process is complete, your program has the right to appeal the ranking of initiatives.

If you choose to appeal, please complete the form that explains and supports your position. The appeal will be handled at the next higher level of the program review process.

7B: Process Assessment

In this first year of program review using the new format, programs will be establishing performance indicators (goals) for analysis next year. Program review will take place annually, but until programs have been through an entire annual cycle, they cannot completely assess the process. However, your input is very important to us as we strive to improve, and your initial comments on this new process are encouraged.