Advanced Technology Division

Program Learning Outcomes - 2005

Manufacturing Technology	Program			Support Courses					General Education					
	MFG 197 Manufacturing Technology	MFG 201 CNC Mill MFG 202 CNC Lathe		HE 125 Workplace Safety or Alternative	WLD 151 Fundamentals of Metallurgy	WLD 121 Shielded Metal Arc Welding 1	DRF 167 CAD 1	ENRG 280 Cooperative Education*	Arts and Letters *	CS 120 Concepts of Computing * CS 160 Orientation to Programming	MTH 076 Applied Geometry for Technicians	MTH 086 Applied Algebra for Technicians	WR 115W Intro to College Writing	Human Relations Requirement
Associate Degree Credit Hours (107 Total Credits)	66	6		3	3	4	4		3	4	4	4	3	3
Two-year Certificate Credit Hours (85 Total Credits)	66	6		3							4		3	3
Program Learning Outcomes														
Demonstrate employability skills required for initial employment and advancement in the industry that include: attendance, proper attire, customer relations, following directions, working in teams, and understanding work rules and ethics.	P	P		P	S	S	S	P	S	S	S	S	S	S
Demonstrate safe work practices and tool usage while performing operations in a shop environment.	P	P		P	S	P	S	P						
Demonstrate the use of standard machine tools employed by the modern machine shop.	P	P		P	P	S	S	S						
Operate 3 Axis CNC milling machines and 2 Axis CNC lathes using G-code controllers.	P	P		S			S							
Demonstrate technical abilities in researching, accessing and interpreting written, computer program or web-based reference materials.	P	P			S	S			P				P	
Use basic mathematics skills, formulas and right angle trigonometry.	P	P					P				P	P		
Core Abilities														
Communicate effectively.	P	P		S	S	S	S	S	S	S			P	P
Think critically and solve problems effectively.	P	P			P	P	P		S	S	P	P	P	P
Increase understanding of the relationship between self and community, including self-awareness and personal responsibility.	S	S		S				P						P
Explore academic disciplines of liberal arts, social sciences, and physical sciences.				S	S	S	S		P	P	P	P	P	P
Learning College Principles														
Learners are active partners in the learning process.	P	P												
Learners are self-directed.	P	P			P	P	P							
Multiple learning options for diverse learners.	P	P												
Learning is promoted across organizational boundaries.	S	S		P	P	P	P	P	P	P	P	P	P	P
Learning is substantive and documented.	P	P												
Assessment Methods														
Technical Skill Performance Observation/Evaluation	P	P												
Employability Skills Evaluation	P	P												
Group Project	S	S												
Journaling	S	S												
Library Research	S	S												
Oral Report/Presentation	S	S												
Peer Assessment	S	S												
Portfolio	S	S												
Pre and Post Test	P	P												
Project Evaluation	P	P												
Quizzes	S	S												
Self Assessment	P	P												
Written Report	S	S												
Written Tests/Examinations	S	S												

P = this is a primary course for meeting the program learning outcome, core ability, learning college principle, or assessment method.

S = this course meets some of the program learning outcome, core ability, learning college principle or assessment method.

Advanced Technology Division – Assessment Plans 9/22/05

Manufacturing

Program Learning Outcomes/Goals	Assessment Indicators
1) Demonstrate employability skills required for initial employment and advancement in the industry that include: attendance, proper attire, customer relations, following directions, working in teams, and understanding work rules and ethics.	80% of the first year students will qualify for the "select student" status by receiving a recommendation from a full-time contracted faculty member. 90% percent of the second year students will complete their programs in the "entry level employee" status. Criteria to qualify for the "select" status will be determined and published by the faculty prior to the start of the academic year.
2) Demonstrate safe work practices and equipment usage while performing operations in a workstation environment.	90% of all students will pass a safety written and demonstration test.
3) Demonstrate the use of standard machine tools employed by the modern machine shop.	90% of the students who complete the program will have gained the necessary competencies to obtain entry level employment in a manufacturing related occupation.
4) Operate 3 Axis CNC milling machines and 2 Axis CNC lathes using G-code controllers.	90% of the students who complete the program will pass an industry standards examination.
5) Use basic mathematics skills, formulas and right angle trigonometry.	90% of the program completers will pass a final program computations examination with a 70% or better score.
6) Demonstrate technical abilities in researching, accessing and interpreting written, computer program or web-based reference materials.	All students will conduct research with citations in a written report in both the first and second year of the program.

Program Operating Analysis - FY 2006

Manufacturing

	Fiscal Year 2006	Expected Model	Actual	Difference	IRAP	Analysis
1	**Enrollment**	**M**				High, Medium or Low Cost Program
2	Reimbursable Student FTE	43.19	27.76		26.5	510 contact hours = 1 R-SFTE
3	Credit Hour Student FTE	23.62	15.18		17.2	45 Credit Hours = 1 CrdHr-SFTE
4	**Staffing**					
5	Full-time Equivalent Faculty	1.181	1.000	-15%		Actual = Enrollment Reports FY06
6	Part-time Equivalent Faculty	0.295	0.476	61%		Actual = Enrollment Reports FY06
7	**Total Faculty FTE**	**1.476**	**1.476**	**0%**		
8	**Budget**					
9	FT Faculty Dollars	72,325	54,103	-25%		Actual = Banner FY06, Period 14
10	PT Faculty Dollars	11,753	17,531	49%		Actual = Banner FY06, Period 14
11	Lab Assistant Dollars	5,904	3,305	-44%		Actual = Banner FY06, Period 14
12	OPE	45,324	37,484	-17%		Actual = Banner FY06, Period 14
13	Materials and Supplies	4,428	2,084	-53%		Actual = Banner FY06, Period 14
14	Equipment	5,904		-		Actual = Banner FY06, Period 14
15	**Direct Instruction Costs**	**145,638**	**114,507**	**-21%**	**121,573**	**Expenses are lower than expected.**
16	**Operating Ratios**					
17	R-SFTE/Total Faculty FTE	29.26	18.81	-36%		
18	**CrdHr-SFTE/Total Faculty FTE**	**16.00**	**10.28**	**-36%**		**Faculty are serving fewer students.**
19	Cost / R-SFTE	3,372	4,125	22%	4,590	
20	Cost / CrdHr-SFTE	6,167	7,543	22%		**Cost per student is higher than expected.**
21						
22	**Revenue**		**Revenue**	**Difference**	**IRAP**	
23	Tuition		44,060		51,298	FY06 Tuition Rate x CrdHr SFTE x 45
24	Program Fees (Differential)		19,072		16,576	Credit Hours x $27.92
25	Public Support / CrdHr SFTE	3,807	105,682		100,989	RFTE*$3,807
26	Other Instructional Revenue					
27	**Total Operating Revenue**		**168,814**		**168,863**	Contribution to Total College Revenue
28	Instructional Function Revenue	54.5%	92,004			Based on Model's Functional Cost Ratios
29	**Direct Instruction Revenue**	**83.3%**	**76,638**	**-33%**		**Expenses are Greater than Revenue**
30						Faculty, Lab Assts, M&S, Equip Costs
31	Indirect Instruction Revenue	16.7%	15,366			Portion of indirect instructional costs
32	Other Functions Revenue	45.5%	76,811			Student Svs, College Svs, etc.