Advanced Technology Division

Fabrication/Welding Technology

Unit Plan

2004 - 2005

Lane Community College SM

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Lane Community College
Fabrication/Welding Technology Unit Plan 2004 - 2005

Part I. Alignment with the College

1) Core Values

The fabrication/welding technology program is a credit instructional program and has been offered at Lane Community College since 1976. The program is administered under the Office of Instruction and Student Services through the Advanced Technology Division. This program is centrally aligned with the College's strategic directions, core values, and learning centered principles.

Learning: Learning is both theoretical and applied. Student learning progresses from basic to advanced technical, academic and employability skills.

Diversity and Accessibility: The program faculty welcome students from diverse backgrounds. Students with special needs are accommodated with appropriate supplemental learning technologies and experiences.

Innovation: Faculty maintain their expertise in the field and incorporate advanced technologies in the curriculum. The faculty has made a commitment to maximize the use of innovative instructional technologies to transform the curriculum.

Collaboration and Partnership: The faculty work very closely with their program advisory committee. This committee is a representation of active community business partners who provide advice and program support. The fabrication/welding technology faculty also work very closely with other divisional programs, especially diesel, automotive technology, aviation maintenance and drafting.

Integrity: The program faculty has demonstrated a high degree of integrity. They are openly accountable to perform according to the policies, procedures and expectations of the College, the division, the advisory committee, and most importantly, the students.

2) Strategic Directions

Transforming Students' Lives Foster the personal, professional, and intellectual growth of learners by providing exemplary and innovative teaching and learning experiences and student support services. Commit to a culture of assessment of programs, services and learning. Position Lane as a vital community partner by empowering a learning workforce in a changing economy.	The fabrication/welding technology program is a professional technical education credit program that provides career learning and counseling. The program includes both classroom and industry equivalent laboratory instruction using current equipment and technologies. The curriculum provides instruction in employability, applied academic and technical skills. The program and course outcomes are assessed using multiple measures including: attainment of program outcomes, core abilities and learning college principles. Each course has identified specific assessment methods including: technical skill demonstration, group projects, research, portfolios, written tests, etc. The program has an active advisory committee, with representation from the employer community. The program works closely with other credit and non-credit programs to facilitate training a "learning workforce".

Transforming the Learning Environment Create a diverse and inclusive learning college: develop institutional capacity to respond effectively and respectfully to students, staff, and community members of all cultures, languages, classes, races, genders, ethnic backgrounds, religions, sexual orientations, and abilities. Create, enhance, and maintain inviting and welcoming facilities that are safe, accessible, functional, well-equipped, aesthetically appealing and environmentally sound.	This is an inclusive learning-centered program that actively seeks and responds to diversity in its students and staff. The faculty create and maintain the best learning environments possible, within their existing resource constraints, to support students in obtaining their educational goals. Instructors in this program must constantly renew and improve their curriculum and learning environments to align to the industry training standards.
Transforming the College Organization Achieve and sustain fiscal stability. Build organizational capacity and systems to support student success and effective operations. Promote professional growth and provide increased development opportunities for staff both within and outside the College	The fabrication/welding technology program is constantly assessing its operational efficiency and effectiveness. The program has been developing operating benchmarks (performance indicators) by which it can compare its actual to its planned operations. This methodology provides the basis for analyzing deviations and trends, identifying causes, and formulating solutions. The faculty in the fabrication/welding technology program have continuously developed their knowledge, skills and abilities as instructors and as industry experts.

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3) <u>Learning Centered Principles</u>

Lane provides opportunities for transformation through learning.	The primary learning outcome of the fabrication/welding technology program is to provide instruction and hands-on training to enable students to obtain career employment. The program prepares students by focusing on both technical and employability skill development. Qualifying for entry-level and advanced employment transforms the student's life.
Lane engages learners as active partners in the learning process.	Students must actively demonstrate their technical and employability skills. Students initiate and manage their progress through the learning process.
Lane creates a learning environment that motivates and inspires students to recognize their responsibility for their own learning.	Students recognize their active involvement may lead to high-paying career positions. The learning environment includes both classroom and laboratory experiences that emulate the workplace.
Lane offers multiple options for learning based on proven and innovative theories and methods that address the needs of diverse learners.	Learning methods include lectures, reading, writing, demonstrations, laboratories, problem solving, researching, building, diagnosing, repairing, modeling, computer-based, cooperative work experiences, group/team projects, formal and self-assessment. Students receive appropriate learning accommodations to ensure success in the program.
Lane commits to a culture of assessment of programs, services and learning, honoring the	The fabrication/welding technology program conducts both formative assessment of a student's

values of intellectual freedom, community responsibility and student need.	knowledge, employ-abilities, technical skills and academic skills; and, summative assessment based on industry or national standards. Faculty assess the stated achievement of the program learning and operational outcomes. Advisory committees provide additional assessment on the relevancy of the curriculum and the quality of the student completers.
Lane fosters knowledge and appreciation of diversity among staff and students and encourages pluralism and intercultural competence. Lane engages learners from diverse cultural and social contexts.	The mission of the fabrication/welding technology program is to transform student lives through learning. The "student" should be representative of the diversity of the community. The program faculty work closely with the college's cultural and diversity programs and initiatives.
Lane is committed to both individual and organizational learning.	Program students, faculty, staff, administrators and community members are committed to learning. Each organizational member gains knowledge and intrinsic reward for actively engaging in learning.
Lane students and staff are a community of learners, all of whom contribute to learning.	The fabrication/welding technology program faculty are continuously engaged in keeping current with the new advances in the industry. They are active learners engaged with students and other colleagues to promote a community of learners.
Lane promotes open communication among staff, students and the community within and across organizational and physical boundaries.	The students, faculty and staff have open access to many forms of operational and governance communications: e-mail, The Daily, the web, meetings, forums, governance councils, etc.

Part II. Unit Description

1) Unit Mission/Vision

The fabrication/welding technology program aligns with the College's mission. *Lane is a learning-centered community college that provides affordable, quality, lifelong educational opportunities that include: Professional technical and lower divisional college transfer programs.*

The fabrication/welding technology program's vision is the same as the College's vision: *Transforming lives through learning.*

2) Catalog Description

The fabrication/welding technology program is an occupational, preparatory, two-year Associate of Applied Science degree and/or a one-year certificate of completion program in fabrication/welding technology or welding processes.

The fabrication/welding technology program features state-of-the-art laboratories where students learn the basic principles and fundamentals in light or heavy metal fabrication and related work. The advanced equipment and expertise of the faculty make Lane's fabrication/welding technology program the best way to enter the field.

Faculty in the program bring considerable field experience to the classroom. Instructional staff remain current with industry through advisory committees and ongoing training.

The program provides classroom instruction and considerable shop training in the laboratories that prepare students for employment in the fabrication/welding technology field. Graduates of this program typically begin careers in metal fabrication and welding. Other career tracks include technical sales, supervision, estimating, quality control, inspection, specialty welding and teaching.

This training can lead to employment in entry-level occupations with a median salary of $40,000 annually. The growth in this industry is expected to be slower than average. Annual new openings are expected to be much higher than average. Outlook for this and related occupations is dependent on Fabrication/welding industry activity levels. During periods of industry growth, reasonable opportunities would exist for competitively trained workers. Those with an associate's degree would have a competitive advantage in this labor market.

New students can enter single skills classes at the beginning of fall, winter, or spring terms. Welding majors seeking a degree need to enter the program at the beginning of Fall term. For consent to enroll in major courses, students must attend a program orientation in fall terms (dates available in Counseling of the Student's First! Center) or contact the department advisor/counselor in winter and spring terms. All interested applicants should complete placement testing (Assessment & Testing Office, Building 1) in reading, writing and math. A minimum score of 68 in reading and 64 in Writing is required. Take testing results to the program orientation and/or advisor/counselor for assistance with course selections. Students are selected on a first-come, first-served basis by or date of application to this program.

3) History/Significant Program Events

How did your instructional unit evolve at Lane?

If not one of the founding programs of the College, the fabrication/welding technology program originated within a very few years of that founding. Begun with a welding only curriculum it has evolved into its current form as a program offering both welding and metal fabrication training. In support of this curricular transition the program has over the span of the last two decades worked to obtain funding for machine tools to support its significant metal fabrication offerings. This transformation was accomplished with the direction and support of the program's advisory committee.

What significant events have marked your growth?

1) Development, in cooperation with the fabrication/welding technology advisory committee, of the program's sequential block curriculum.
2) Acquisition of various machine tools and material handling equipment.
3) Alignment of program equipment purchases with its core values (away from state-of-the-art esoteric equipment).
4) Moving the program from the basement of an office building to a designed-for-the-purpose facility.

Do you have a system for maintaining an archival history of your unit?
General historical information relies on oral transmission. Hard copy documentation is limited to instructors' record keeping of student class performance and classified personnel's recordation of budgetary information.

Do you have annual events that are representative of your unit's goals or teaching methods?
The program provides annual opportunity for students to take industry standard tests and usually to make products that demonstrate skill development.

4) Degrees and Certificates

One-Year Certificate of Completion	*Credits*
One-Year Certificate of Completion Totals	**55**
First Year	
Fall	
Shielded Metal Arc Welding 1 WLD 121	4
Wire Drive welding 1 WLD 143	4
Introduction to College Writing: Workplace Emphasis WR 115W or higher	3
Total Credits	**11**
Winter	
Shielded Metal Arc Welding 2 WLD 122	4
Wire Drive welding 2 WLD 154	4
Human Relations at Work CG 203	3
Total Credits	**11**
Spring	
Shielded Metal Arc Welding 3 WLD 148	4
Wire Drive welding 3 WLD 159	4
Applied Geometry for Technicians MTH 076 or higher	4
Total Credits	**12**
Fall	
Blueprint Rading 1 CST 110	3
Gas Tungsten Arc Welding 1 WLD 242	3
Total Credits	**6**
Winter	
Gas Tungsten Arc Welding 2 WLD 256	3
Industrial Welding Practices WLD 165	3
Total Credits	**6**

Two-Year Associate of Applied Science Degree	*Credits*
Two-Year Associate of Applied Science Degree Totals	**107-109**
First Year	
Fall	
Fabrication/Welding 1 WLD 112	12
Applied Geometry for Technicians MTH 076 or higher	4
Total Credits	**16**
Winter	

Fabrication/Welding 2 WLD 113	12
Human Relations at Work CG 203	3
Total Credits	**15**
Spring	
Fabrication/Welding 3 WLD 114	12
Workplace Safety HE 125 or First Aid HE 252 or PE/Health requirement	3
Total Credits	**15**
Second Year	
Fall	
Fabrication/Welding 4 WLD 215	12
Manufacturing Technology MFG 197	3
Arts & Letters requirement or Social Science Requirement	3
Total Credits	**18**
Winter	
Fabrication/Welding 5 WLD 216	12
Introduction to College Writing: Workplace Emphasis WR 115W or higher	3
Science Requirement	3
Total Credits	**18**
Spring	
Fabrication/Welding 6 WLD 217	12
Arts and Letters Requirement	3
Welding elective	3
Total Credits	**18**

Welding Elective Courses:

Cooperative Education: Welding WLD 280 .....3 Credits
Fabrication/Welding of Metal Art & Crafts WLD 123.....3 Credits
Welder Qualification (Cert): Wire Drive WLD 140 .....3 Credits
Welder Qualification (Cert): SMAE WLD 141 .....3 Credits
Welding Lab WLD 139.....1-3 credits

Welding Skill Courses

Shielded Metal Arc welding 1 WLD 121.....1-4 credits
Shielded Metal Arc welding 2 WLD 122.....1-4 credits
Shielded Metal Arc welding 3 WLD 148.....1-4 credits
Gas Tungsten Arc Welding 1 WLD 242 .....3 credits
Gas Tungsten Arc Welding 2 WLD 256 .....3 credits
Wire Drive welding 1 WLD 143 .....1-4 credits
Wire Drive welding 2 WLD 154 .....1-4 credits
Wire Drive welding 3 WLD 159 .....1-4 credits
Industrial Welding Practices WLD 165 .....3 credits
Metallurgy Fundamentals/Welding WLD 151 .....4 credits
Welding lab WLD 149.....1-6 credits
Cooperative Education: Welding WLD 280 .....3 credits

Cooperative Education (Co-op) offers students college credit and a grade for on-the-job work experience related to their educational and career goals. Through Co-op a student can integrate theory and practice, develop skills, expand career knowledge, and make contacts for the future. Work schedules and work sites vary. Under the supervision of the fabrication/welding technology Co-op Coordinator and with instructor consent, a maximum of 18 Co-op credits may be earned in lieu of required fabrication/technology course credits.

5) Organizational Structure

Board of Education
President
Vice President of Instruction
Associate Vice President of Instruction
Division Chair Advanced Technology
Faculty Fabrication/welding Technology Program

6) Staff/Faculty

Name	**Mark Huntington**
Classification	Full-Time Faculty
Year Hired	1981
Degrees/Credentials	Certificate in Welding Technology, MS Counseling Psych

Name	**Allen Laskey**
Classification	Full-Time Faculty
Year Hired	2001
Degrees/Credentials	AS Welding Technology AWS CWI

7) Student Profile

Please refer to the Program Learning Outcomes, Goals and Performance Indicators on page 9.

8) Facilities and Equipment

The program's facility is approximately 17,000 sq. ft. It was built five years ago with significant input from program staff. Its shop space was designed to replicate typical industrial work space in which students would ultimately find employment.

The facility is divided various use specific spaces including storage for not-currently-needed equipment, storage for metal and project/product materials, classrooms, welding/fabrication lab, heat treating lab and tool room.

What are its strengths?

The facility is designed to represent, and provide as many functions as possible as, an industrial metal fabrication business. It, therefore, can provide experience in most functions that are common to the trade for which students are being trained.

While facility space is limited it generally provides enough flexibility for various projects and processes required by program curriculum.

Its challenges?

1) Limited storage space (lockable, open and covered).
2) Limited electrical sources.
3) Gas manifold system that has worked only briefly after moving into the facility.
4) Difficult to access facility with raw materials, esp. east end of building.

What are your utilization ratios?

The facility currently houses classes mornings, afternoons, evenings and Saturdays. Interest in the program is adequate to support two full-time faculty and three part-time faculty. Student demographics include fabrication/welding technology majors; students from other programs requiring fabrication/welding technology courses for their major including Diesel Tech, Auto Manufacturing Tech.; and skill-up-graders work, or have been working in industry.

Provide a copy of your equipment inventory.

See equipment list under “Maintenance Initiatives”.

What are your equipment strengths?
1) The program has equipment adequate to teach its curriculum. That is, it can teach most processes utilized by industry.
2) It has been able over the last three years to replace most of its aging lower cost per unit equipment.
3) Equipment replacement has included a standardization process that has reduced equipment downtime, program costs and inefficiencies.

Challenges?
It is, perhaps, unrealistic to think that funding for keeping tight equipment replacement schedules or that the most current machine technology will always be available to the program. The challenge, then, is when developing replacement and enhancement schedules to make effective distinctions between that which supports program core values and that which might be classed as “nice-to-have”.

Do you have any plans in place for equipment replacement?
The program has been working from an equipment replacement list for the last several years. It could not rightly be considered a schedule because funding is an unknown variable from year to year.

9) Budget Profile
Refer to the Program Operations charts on pages 12 and 13**.**

Program Learning Outcomes, Goals and Performance Indicators

Program Learning Outcomes/Goals	Performance 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 as "select students". 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 tool usage while performing operations in a shop environment.	95% of all students will pass a shop safety written and demonstration test.
3) Demonstrate advanced fabrication techniques and welding processes and applications including GTAW, programmable, plasma cutting, structural and pipe fitting, metallurgy, quality control procedures and business operations.	All students will be assessed for mastery of these skills. 80% of all first year students will complete the courses with a C- or better. 90% of the second year students will have obtained industry employment within one year of their completion of the program.
4) Develop manufacturing plans for commercially viable metal products.	All students will design and present to a peer committee a manufacturing plan prior to completing the program.
5) Use appropriate library and information resources to research professional issues and support lifelong learning.	All students will conduct research with citations in a written report in both the first and second year of the program.
6) Use blueprint reading skills, cost estimating, applied science of materials and mathematics necessary to the profession.	All second year students will prepare a blueprint project that includes cost estimating and materials management.
Enrollment Goals	**Performance Indicators**
Students will have access to the program.	The program will achieve the following student to faculty ratios: R-SFTE / FFTE = 22 : 1 CH-SFTE / FFTE = 16 :1 This means for every funded faculty position 22 reimbursable student full-time equivalents should be enrolled or 16 credit hour student full-time equivalents. The program exceeded the student access goal by achieving a 29.89 to 1 R-SFTE/FFTE ratio, and a 17.94 to 1 CH-SFTE to FFTE ratio.
Students who declare their major in this program will increase as a percentage of the total students enrolled.	FY2004 was the base year. 84 of the unduplicated headcount were declared majors.
Program graduates will increase as a percentage of the total students enrolled.	FY2000 was the base year. AAS graduates = 4 Certificates = 1.
The percentage of enrolled female students in the program will exceed the percentage of	12% of students enrolled in the advanced technology division were female.

females in the division programs.	14% of the fabrication/welding technology students were female.
The percentage of enrolled non-Caucasian program students will exceed the percentage of the non-Caucasian students in the college.	13% of the fabrication/welding technology students are non-Caucasian.
The percentage of program students who complete each term will exceed the college completion rate.	The college completion rate was 83.24%. The program completion rate was 89.01%.
The percentage of program term completers who receive a C- or greater will exceed the college "success" rate.	The college "success" rate is 79.08%. The program "success" rate is 80.94%.

Lane Community College
Fabrication/Welding Technology Unit Plan 2004 - 2005

Program Learning Outcomes Assessment Matrix

	PROGRAM COURSES							SUPPORT COURSES					GENERAL EDUCATION				
Fabrication and Welding	WLD 112 Fabrication/Welding 1	WLD 113 Fabrication/Welding 2	WLD 114 Fabrication/Welding 3	WLD 215 Fabrication/Welding 4	WLD 216 Fabrication/Welding 5	WLD 217 Fabrication/Welding 6		HE 125 Workplace Safety	MFG 197 Manufacturing Technology	Welding Elective	Cooperative Education		MTH 076 Applied Geometry for Techs	CG 203 Human Relations at Work	WR 115 W Intro to College Writing: Workplace	Arts and Letters and/or Social Science	Science/Math/Computer Science
Associate Degree Credit Hours (100 Total Credits)	12	12	12	12	12	12		3	3	3			4	3	3	6	3
One-Year Certificate Credit Hours (46 Total Credits)	12	12	12										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	P	P	P		S	P	P	P			P			
Demonstrate safe work practices and tool usage while performing operations in a shop environment.	P	P	P	P	P	P		P	P	P	P						
Demonstrate advanced fabrication techniques and welding processes and applications including GTAW, programmable, plasma cutting, structural and pipe fitting, metallurgy, quality control procedures and business operations.	P	P	P	P	P	P			S	S	S						
Develop manufacturing plans for commercially viable metal products.	P	P	P	P	P	P			S	S							
Use appropriate library and information resources to research professional issues and support lifelong learning.	S	S	S	S	S	S		S	S					S	P	P	
Use blueprint reading skills, cost estimating, applied science of materials and mathematics necessary to the profession.	P	P	P	P	P	P			S				S				
Core Abilities																	
Communicate effectively.	P	P	P	P	P	P		P	P	P	P			S	P	S	
Think critically and solve problems effectively.	P	P	P	P	P	P			S	S			P	S	P	P	
Increase understanding of the relationship between self and community, including self-awareness and personal responsibility.	S	S	S	S	S	S		S	S	S	P			P			
Explore academic disciplines of liberal arts, social sciences, and physical sciences.								S	P				P	P	P	P	
Learning College Principles																	
Learners are active partners in the learning process.	P	P	P	P	P	P											
Learners are self-directed.	P	P	P	P	P	P											
Multiple learning options for diverse learners.	P	P	P	P	P	P											
Learning is promoted across organizational boundaries.								P	P		S		S	S	S	S	
Learning is substantive and documented.	P	P	P	P	P	P			P	P	S		P	S	P	S	
Assessment Methods																	
Technical Skill Performance Observation/Evaluation	P	P	P	P	P	P			P	P	P						
Employability Skills Evaluation	P	P	P	P	P	P			P	P	P						
Group Project																	
Journaling																	
Library Research														P	P	P	
Oral Report/Presentation																	
Peer Assessment																	
Portfolio																	
Pre and Post Test																	
Project Evaluation	S	S	S	S	S	S			S	S							
Quizzes																	
Self Assessment											P						
Written Report																	
Written Tests/Examinations	P	P	P	P	P	P			P								

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.

Lane Community College
Fabrication/Welding Technology Unit Plan 2004 - 2005

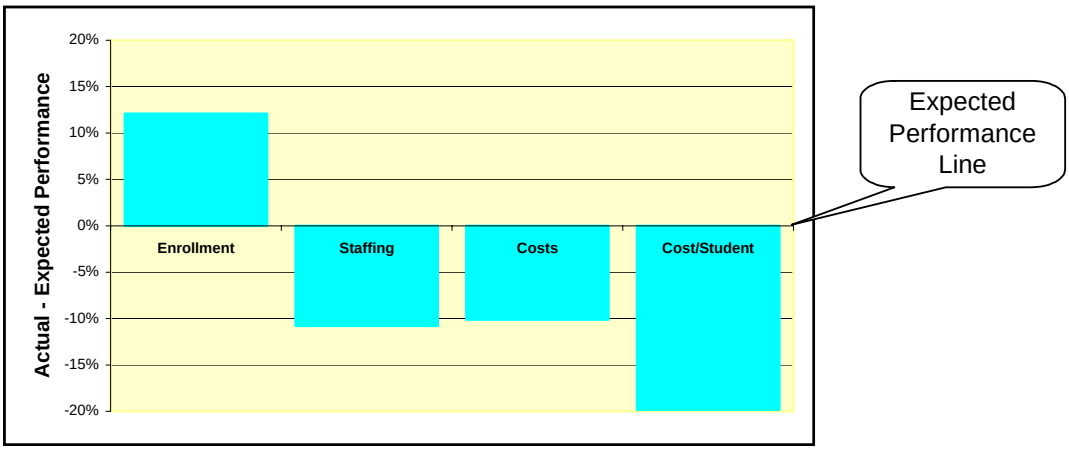
Unit Performance

Program Operations – Actual to Expected Analysis

Fabrication and Welding

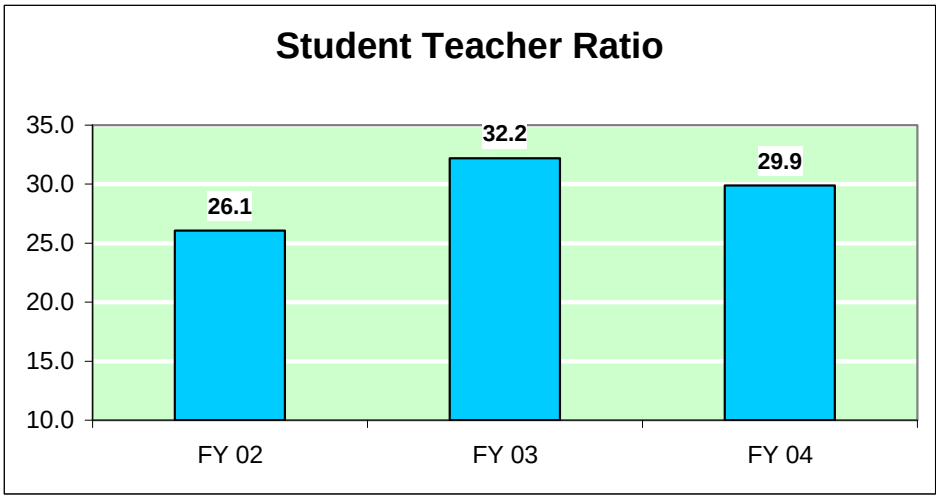
	2003 - 2004 Outcomes	Expected*	Actual	Difference	Analysis
1	**Enrollment**				
2	Reimbursable Student FTE	81.307	91.140	112%	Enrollment is higher than expected.
3	Credit Hour Student FTE	48.784	54.684	112%	Enrollment is higher than expected.
4	Student Head Count	366	450	123%	**Enrollment is higher than expected.**
5	**Staffing**				
6	Full-time Equivalent Faculty	2.734	2.000	73%	Staffing is lower than expected.
7	Part-time Equivalent Faculty	0.684	1.049	153%	Staffing is higher than expected.
8	**Total Faculty FTE**	**3.418**	**3.049**	**89%**	**Staffing is lower than expected.**
9	**Budget**				
10	FT Faculty Dollars	156,383	114,390	73%	Expenses are lower than expected.
11	PT Faculty Dollars	23,812	36,543	153%	Expenses are higher than expected.
12	Lab Assistant Dollars	12,196	33,330	273%	Expenses are higher than expected.
13	Other Payroll Expenses	89,115	85,350	96%	Expenses are lower than expected.
14	Materials and Supplies	23,924	4,850	20%	Expenses are lower than expected.
15	**Direct Instruction Costs**	**305,430**	**274,463**	**90%**	**Expenses are lower than expected.**
16	**Operating Ratios**				
17	R-SFTE/Faculty FTE	23.79	29.89	126%	Faculty are serving more students.
18	CH-SFTE/Faculty FTE	14.27	17.94	126%	**Faculty are serving more students.**
19	Cost / R-SFTE	3,756.52	3,011.44	80%	Cost per student is less then expected.
20	Cost / CH-SFTE	6,260.86	5,019.07	80%	**Cost per student is less then expected.**
21	**Non-tuition Revenues**				
22	Course Fees		3,300.00		
23	Differential Fees				
24	Program Fees				
25	Sales		4,427.58		
26	Donations				

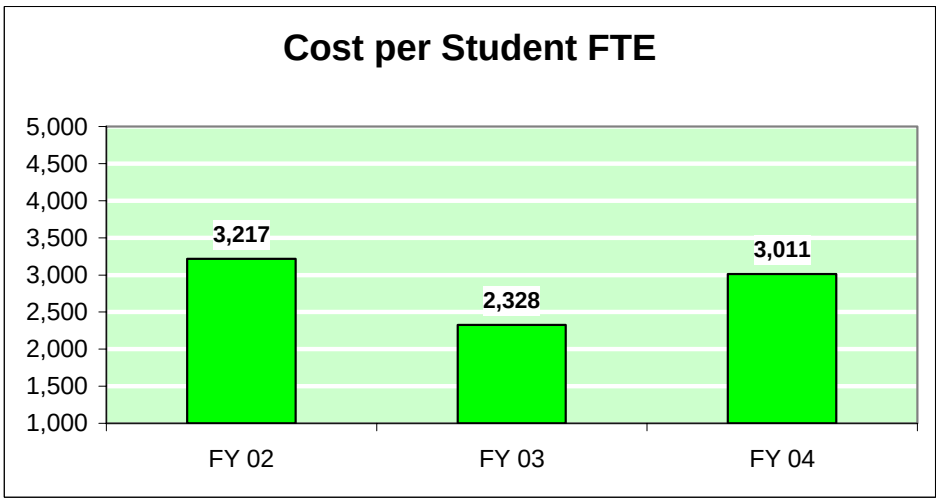
* Expected calculations are based on the instructional program benchmarks model.
* This program is a medium cost program in the benchmark model.



Program Operating Trends
Fabrication and Welding

	Operating Data	FY 02 Actual	FY 03 Actual	FY 04 Actual
1	Full-Time Faculty FTE	3.000	2.000	2.000
2	Part-Time Faculty FTE	1.235	1.235	1.049
3	Total Faculty FTE	4.235	3.235	3.049
4	Student FTE	110.390	104.188	91.140
5	SFTE / FFTE	26.066	32.206	29.892
6				
7	Full-Time Faculty	153,297	110,070	114,390
8	Part-Time Faculty	42,625	30,111	36,543
9	Lab Assistant	38,471	19,359	33,330
10	Other Payroll Expenses	93,199	68,043	85,350
11	Materials and Supplies	27,553	14,943	4,850
12	Total	355,145	242,526	274,464
13	Cost per Student FTE	3,217	2,328	3,011





Program Outcomes Analysis

1. How effectively did you fulfill your unit's mission?

Program outcomes for 2003-2004: All fabrication/welding technology degreed graduates can be expected to perform at the entry-level of industry in blueprint reading; basic cost estimating; understanding of materials science relevant to forming, fabricating, welding; mathematics associated with metal fabrication; developing manufacturing plans; skills associated with layout, forming, fitting and welding with several welding processes; programming of certain machine tools and operation of certain material handling equipment.

Students leaving the program before completing a certificate or degree will have developed entry-level knowledge/skills in some technologies/processes.

Students taking welding curriculum required by other programs are able to apply skills learned at a level equal to the requirements of their disciplines.

2. How well did students meet your learning outcomes?

Program learning outcomes are informed and monitored by the Fabrication/Welding Technology Advisory Committee, part-time instructional staff that continue to work in industry and professional journals.

3. How well did students meet the Core Abilities outcomes?

Refer to the Program Learning Outcomes Assessment Matrix on page 9.

4. How efficiently did you use the resources you were given?

Enrollment: more students were enrolled than expected
Staffing: less staffing was used than expected.
Budget: Expenses were less than expected.
Cost per Student: The cost per student was less than expected.

This program did more with less while maintaining its overall quality.

5. How well are you utilizing current technology?

In the fabrication/welding technology lab (shop), most current technologies used in this industry are represented and taught to our students. However, some of our equipment and machinery is old and aging. One of our biggest current needs (weaknesses) is to upgrade our computer lab (classroom), which is used to instruct students in blueprint reading and cost estimating. The lab is also used by all students in this program (not just welding majors). Students use this computer lab to access Lane program web pages, register for classes, access material purchase cards, do research papers, and complete assignments from other classes they are taking.

The lab consists of 31 computers and 1 laser printer. All equipment is early to mid 1990's vintage, its useful life was used by other programs on campus, and we received them several years ago as "hand-me-downs." Currently four of the computers are not working at all, and according to campus computer services staff are not repairable. The printer is "finicky" and jams often, has been repaired several times with limited success. The rest of the computers are slow and subject to numerous "error" messages, and are the source for much frustration on the part of our students.

Another current technology program weakness is the Fabrication/Welding Technology program staff's inability to access a viable printer/copier machine for the ongoing task of curriculum development and other tasks.

Much of what our students do is "hands on" fabrication and welding projects completed in the welding lab. Thousands of pounds of materials (structural steel, aluminum, and stainless steel) are utilized in the completion of these projects. Fortunately for our students the vast majority of these materials are donated to the welding program from local steel fabrication/welding technology shops. These donations help keep program costs lower for our students and without material donations, many students would be unable to attend do to financial reasons.

The challenge for program staff becomes integrating this donated scrap and remnant materials into our core curriculum. In other words we never really know what kinds of materials are going to be donated and in what amounts. Sometimes we receive plate material, or flat bar. Sometimes we receive structural shapes such as wide flange or standard beams, channel, or angle iron. Sometimes pipe, etc. This creates for program staff the task of continual and ongoing curriculum development. Designing and drawing blueprints for the creation of meaningful, learning centered fabrication and welding projects for our students. Students work from these blueprints to complete these projects.

Program staff design and draw these documents in AutoCad 2004, but do not have a networked printer/copier machine to handle document volume, or document size. This lack of, or inefficiency in "current technology" multiplies staff time needed for this task. This "extra" time needed to accomplish curriculum development simply creates inefficiencies in other areas that need staff attention.

6. How effective was your relationship with your advisory committee in achieving unit goals?

The Fabrication/Welding Technology program has a very active and effective advisory committee. The committee has had input to every program aspect. From the layout of the welding facility, to machine tool acquisition, to curriculum development., to co-op placement of our students. One recent curriculum change brought about with committee input has been the addition of a new introductory fabrication/welding technology course that will be offered at night beginning in winter term, 2005. Other recent curriculum changes include the addition of and deletion of various SMAW electrodes and FCAW filler wires used in student welding projects. Committee input brought about these changes in electrodes and filler wires used.

Our committee consists of local employers, one current program student, and both full time and part time program staff. Two of our current part time staff are also employed in local industry and provide valuable input to our curriculum development and program activities.
In 2003-2004 the committee met 3 times (once per term) on the following dates: December 2, 2003; number attending 8. March 4, 2004; number attending 8. June 3, 2004; number attending 7.

The following is a list of current advisory committee members:

- Sarah Bickford – Peterson Pacific Corporation, a local heavy equipment manufacturer in the re-cycle market with world wide sales.
- Tony Bloom – Ecklund Industries, a local steel fabrication "job shop."
- Richard Braatz – Lake Company, a local manufacturer of irrigation systems with national and overseas sales.
- Chris Rolfe – Knights Fabrication and Welding, a local job shop and manufacturer of sub-components for the aggregate processing industry.
- David Schmidt – Johnson Crushers International, a local manufacturer of heavy equipment for the aggregate processing industry with national and world wide sales.
- Brian Berntzen – Farwest Steel Corporation, a local steel supplier.
- Mark Huntington – Lane Community College FT fabrication/welding technology instructor.
- Al Laskey - Lane Community College FT fabrication/welding technology instructor.
- Greg Wilton – Lane Community College Instructional Specialist.
- Ed Bromley - Lane Community College PT welding instructor.

7. How well did you meet faculty and staff goals?

8. Did last year's funded initiatives meet your goals?

Initiative: Program initiative for 2003-'04 was a HD shear/Ironworker. Carl Perkins funded this initiative. The equipment was purchased, installed, its functions taught and is currently being used by students. All objectives have been met.

Benefits:

- a. Old equipment that was partially dysfunctional and potentially unsafe has been removed from program facilities.
- b. Students are learning to use current technology.
- c. Appropriate technology is being used for appropriate functions.

Challenges:
Compliance with electrical code requirements at the point of installation was unexpected but resolved.

Effectiveness:
All resources made available were successfully applied in fulfilling the initiative. The requested funding was adequate to fund equipment and accessories necessary to accomplish goals (see above) set forth in the CP application.

9. What are the overall unit's strengths?

The program in large measure accomplishes what it intends. Those students entering the program with average to above average preparatory skills, e.g. especially academic and work ethic, will succeed given the current curriculum, facilities, instructional and support staff. Those who are successful, not to be confused with only those graduating, typically are able to perform targeted skills at entry-level or, in fact, obtain employment in the field for which they were trained.

The program was able to present its broad based curriculum covering many aspects of welding, metal fabrication and applied metallurgical science to several different populations of students including fabrication/welding technology majors, majors from other disciplines, employed skill-upgraders and those with vocational interests. The program's limited staff was able to make its curriculum available days, evenings and Saturdays.

The program continued to evaluate its curricular offerings. It wrote and received approval to offer a new fabrication course that will be offered in the evenings for those holding day jobs. This will be the first time that evening metal fabrication will be offered.

The program was been able to upgrade some of its core instructional equipment. This has reduced student and equipment down-time making the program more efficient and, therefore, responsive to student needs.

10. What are the overall unit's challenges?

Even though current instructional staffing levels are adequate to accomplish most program goals it is believed that additional faculty would be of significant value in improving retention and success rates. It is unrealistic to think that typical student/teacher ratios, 30:1, for the first year of the program provide a opportunity for optimal instructor access for each student given the type of learning required.

Approximately one-half fabrication/welding technology students beginning the program continue on into the second year of the program. Students do not continue for several reasons including finances, employment (with skills learned in the program), choosing another career direction or, in some cases, perhaps, needing more instructional support than is possible given current staffing levels.

To improve success rates the program and the College need to develop the ability to identify early-on those students who are at risk of failure especially due to learning deficits, disabilities. A learning specialist capable of diagnosing these and recommending to instructional staff appropriate pedagogical approaches could be of significant help. It may well be that program's such as fabrication/welding technology. attract a disproportionate number of individuals who have always experienced learning difficulties and yet have not known why this is so or what, if anything can be done to improve their situation. It is very much hoped that the College will consider at some point providing more than study skills courses to help learning disabled students who may need more than those programs can provide and that are not necessarily designed to interface effectively with core instructional

programs.

Funding of realistic equipment replacement schedules remains a challenge.

Classroom computer lab maintenance and upgrade was and continues to be a challenge.

Program staffs ability to efficiently and effectively produce documents in the ongoing task of curriculum development.

A greater number of students were less well prepared for the college experience. What motivated students in recent history did not seem to do so last year. Tied to this perception is what seems to be a notable lack of initiative on the part of these students. Not knowing the cause of this phenomenon limits the effectiveness of instructional intervention to trial and error approaches at remediation. This seems so far to represent a short term trend.

11. Program Analysis Findings

Finding 1: The program needs to continue to prioritize its equipment replacement to maintain efficient, effective learning laboratories.
Finding 2: The program desperately needs an upgraded computer lab to effectively teach core curriculum to all program students.
Finding 3: The program would like to support a College initiative to hire a learning specialist who would be capable of evaluating learning deficits and disabilities and providing to instructional staff recommended pedagogical approaches appropriate in specific instances.
Finding 4: The program needs to continue to evaluate and enhance its curriculum. This current year will see the initial offering of a course that may be the beginning, if successful, of a sequential series of courses of the same type.
Finding 5: Program staff need a more efficient means of producing needed documents to teach core curriculum principles.

Part IV: Projected Performance

Program Initiatives

1. 1. Initiative Title and Identifier (Unit Abbreviation, Fiscal Year, Type, Sequence Number)
Division Priority: 10

Initiative 1: Replace Existing Forklift to Teach Students Material Handling Practices Used in Industry Fabrication Welding, FY 2005, Maintenance, 01 = **FW05M01**

2. Linkage to Program Analysis Findings

Finding 1: The program needs to continue to prioritize its equipment replacement to maintain efficient, effective learning laboratories.

The program has the ongoing challenge of replacing aging, inefficient, unreliable instructional equipment in order to maintain and improve its delivery of services to its students, to continue to train them to industry entry-level standards.

This initiative will replace aging, inefficient, unreliable instructional equipment that will improve the ability of the program to provide training to entry-level standards.

3. Describe the Initiative

This initiative is for the purpose of replacing the program's current forklift with a new forklift. The new forklift would be propane powered, 8000 lb. lifting capacity with enough mast height to reach for servicing of other educational equipment including overhead and jib cranes.

What is the need or intended use?
The program uses its forklift for instructional, material handling and equipment maintenance purposes.

How was that need assessed?
The program has since its inception taught forklift skills to its students. The program's Advisory Committee reiterated its support of forklift training for students at its 11/18/04 meeting. The program daily needs to handle many tons of materials. A forklift is used to access other program educational equipment for maintenance servicing.

What is your evidence of the need?
Evidence of need is based on the deteriorated condition of it current forklift as described below:

- At, perhaps, 30 years old the program's forklift has exceeded it life-expectancy.
- It has a hole in its fuel tank so that when filled it leaks quantities of fuel sometimes in the welding shop creating a safety issue.
- It cannot be relied on to start. During winter, or colder days, it must be housed inside to provide a better opportunity for starting. If recently refueled this means puddles of diesel fuel in the welding shop.
- It is estimated that significant (read "expensive") work will need be done to its hydraulic systems in the near future to assure safety and more reliable functioning.
- The program's current 6000 lb. lifting capacity forklift is often incapable of lifting boxes of donated steel from trucks that bring it to the program necessitating a physically taxing process of unloading by hand individual pieces of material from boxes to reduce weight.
- The program's diesel forklift produces copious fumes that significantly pollute air in the facility's educational laboratories.
- The program needs to access for maintenance purposes its overhead crane and jib crane. The program's forklift cannot reach this equipment.

Given college resources, is it feasible?
Based on requested funding compared to funding awarded other initiatives the program believes this initiative to be feasible.

Is it an efficient use of college resources?
If efficient can be equated with how effectively programs deliver services then this initiative can be considered an efficient use of college resources. Having reliable and safe equipment that is used almost daily in conducting the program's educational functions is necessary to its efficiency and effectiveness. Having equipment that cannot be relied on to deliver on its educational mission and/or may not always be as safe as possible is creates inefficiencies in the program.

What would be the campus location of this request/project?
The Fabrication/welding technology program is located on the main campus building 8.

How many students (per year) will benefit?
The program serves approximately 450 students (head count) per year.

How will students benefit?
Students will benefit by learning to industry entry-level how to operate equipment that they will be expected to operate as they obtain employment in the field for which they are being trained. They will benefit by having access to dependable, safe and current technology. They will benefit by learning to work efficiently with efficient equipment.

4. Requested Resources

Forklift with 8,000 pound lifting capacity, propane powered = $35,000

5. Funding Sources

Carl Perkins
General Funds

5.1 Alignment to Carl Perkins Act goals?

Student Skills Goal
This initiative (Forklift) will improve technical skills of students by providing opportunity for those students to learn how to operate safe and reliable equipment of a type that they will be expected to operate by their future employers. (See Part IV, section 3 above for additional discussion of how this initiative specifically meets this CP goal.

Work-based Learning Goal
The program contracts with employers of its students to do work that would utilize this initiative. That is, the program contracts with potential employers of its students to manufacture certain products. This initiative would be employed in this manufacturing process for the purpose of teaching safe and effective material handling as practiced in industry. Additionally students would be trained utilizing this initiative to a level that in many instances exceeds industry standards and practices.

Effect on Profession Technical Education student success?
Students will gain industry specified skills which lead to higher paying employment.

Brief Carl Perkins funding history
The Fabrication/welding technology. program has utilized CP funding over the last 20 years to enhance its capability to offer effective, efficient training through purchase of equipment. In that time CP money has allowed the program to align its capabilities with the needs of the industry for which it trains students. The result is better qualified students, a better and broader relationship with industry and more efficient use of educational time.

5.2 Alignment to Student Technology Fees.

This initiative is not seeking TACT funds.

5.3 Curriculum Development

This initiative is not seeking curriculum development funds.

6. Fund, Organization, Account, Program Codes

622205 112000

7. Alignment to the College's goals

This initiative aligns with the following college goals:

- Transforming Students' Lives
- Transforming the Learning Environment

Program Initiatives

2. 1. Initiative Title and Identifier (Unit Abbreviation, Fiscal Year, Type, Sequence Number)
Division Priority: 16

Initiative 2: Replace the Vertical Bandsaw to Teach Students Metal Preparation Processes Used in Industry Fabrication Welding, FY 2005, Maintenance, 02 = **FW05M02**

2. Linkage to Program Analysis Findings

Finding 1: The program needs to continue to prioritize its equipment replacement to maintain efficient, effective learning laboratories.

The challenge is for the program to provide a safe, educationally relevant experience for students. Relevant experience means replicating industrial activities in the educational environment. If program equipment functions are dated and been transcended by industry the educational mission is compromised.

This initiative is intending to replace aging instructional equipment with limited capabilities and safety concerns with equipment having the same, as well as increased functions and that will be safer to use. The program needs to upgrade its sawing technology to remain current with industry. The program's current saw cannot provide training for its students in the various uses of saw technology as employed in industry and, therefore, cannot train to industry level in this technology.

This initiative will replace old limited function instructional equipment with current technology enabling the program to provide broader and safer training for its students to a standard that is expected by industry.

3. Describe the Initiative

What is the need or intended use?
The initiative proposes purchase of a current technology vertical band saw with compound angle cutting and power feed functions. This initiative would be installed as an educational tool in the program's learning lab. for the purpose of student training. Training in the use of this tool would be incorporated into current curriculum.

How was that need assessed?
The program uses its existing band saw to process materials for further instructional purposes. This function would be continued in addition to training in other functions associated with new technology band saws. These saws are common place equipment found in industry. Students are expected to be able to operate all functions of current technology band saws when employed. In addition, the program's Advisory committee has indicated that a need to know this technology.

What is your evidence of the need?
Evidence of need is based on:
The program's advisory committee has indicated that vertical band saws are utilized by industry and that employees are expected to know how to operate this equipment.
The Committee indicated that operations performed by industry using vertical band saws exceed that capability of the program's band saw.
Safety concerns (having to do with hand feeding vs., current technology, machine feeding of parts) have also been associated with the program's vertical band saw.
Within a week of the writing this initiative a program student was hired to run their band saw by a local business. Historically other program students have been hired as sawyers as a first job.

Given college resources, is it feasible?
Based on requested funding compared to funding awarded other initiatives the program believes this initiative to be feasible.

Is it an efficient use of college resources?
If funded this initiative will make for not only a more efficient (less time spent teaching inefficient metal preparation

processes) as well as more effective teaching (teaching of current metal preparation processes).

What would be the campus location of this request/project?
The Fabrication/welding technology program is located on the main campus building 8.

How many students (per year) will benefit?
The program serves approximately 450 students (head count) per year.

How will students benefit?
Students will benefit by learning to industry entry-level how to operate equipment that they will be expected to operate as they obtain employment in the field for which they are being trained. They will benefit by having access to dependable, safe and current technology. They will benefit by learning to work efficiently with efficient equipment.

4. Requested Resources

Industrial vertical bandsaw = $22,000

5. Funding Sources

Carl Perkins
General Funds

5.1 Alignment to Carl Perkins Act goals?

Student Skills Goal
This initiative will improve technical skills of students by providing opportunity for those students to learn how to operate safe and reliable equipment of a type that they will be expected to operate by their future employers

Work-based Learning Goal
The program contracts with employers of its students to do work that would utilize this initiative. That is, the program contracts with potential employers of its students to manufacture certain products. This initiative would be employed in this manufacturing process for the purpose of teaching safe and effective material handling as practiced in industry. Additionally students would be trained utilizing this initiative to a level that in many instances exceeds industry standards and practices.

Effect on Profession Technical Education student success?
Students will gain industry specified skills which lead to higher paying employment.

Brief Carl Perkins funding history
The Fabrication/welding technology. program has utilized CP funding over the last 20 years to enhance its capability to offer effective, efficient training through purchase of equipment. In that time CP money has allowed the program to align its capabilities with the needs of the industry for which it trains students. The result is better qualified students, a better and broader relationship with industry and more efficient use of educational time.

5.2 Alignment to Student Technology Fees.

This initiative is not seeking TACT funds.

5.3 Curriculum Development

This initiative is not seeking curriculum development funds.

6. Organization and Program Codes

612205 112000

7. Alignment to the College's goals

This initiative aligns with the following college goals:

- Transforming Students' Lives
- Transforming the Learning Environment

Program Initiatives

3. 1. Initiative Title and Identifier (Unit Abbreviation, Fiscal Year, Type, Sequence Number)
Division Priority: 25

Initiative 3: Upgrade the Existing Computer Lab to improve the use of computer technology to teach blueprint reading and cost estimating.
Fabrication Welding, FY 2005, Maintenance, 03 = **FW05M03**

2. Linkage to Program Analysis Findings

Finding 2: The program desperately needs an upgraded computer lab to effectively teach core curriculum to all program students.

This initiative is intending to replace aging instructional equipment with limited capabilities and safety concerns with equipment having the same, as well as increased functions and that will be safer to use. The program needs to upgrade its sawing technology to remain current with industry. The program's current saw cannot provide training for its students in the various uses of saw technology as employed in industry and, therefore, cannot train to industry level in this technology.

This initiative will replace old limited function instructional equipment with current technology enabling the program to provide broader and safer training for its students to a standard that is expected by industry.

3. Describe the Initiative

Purchase 31 new computers and 1 new laser printer to upgrade existing computer lab.

What is the need or intended use?
Program students utilize computer lab to learn blueprint reading and cost estimating principles and practices. Program students utilize computer lab to access Lane department web pages, register for classes, add/drop credits from existing classes, access material purchase cards, research papers, etc.

How was that need assessed?
The program has since its inception taught blueprint reading and cost estimating to its students. With the advent of the Banner System and online class registration the need for computer use by program students has increased. Not only has this need become apparent to program staff and students, but current campus professionals are telling us that due to the age of existing computers they cannot and will not work on them.

What is your evidence of the need?
Evidence of need is based on the age and deteriorated condition of it current computers and printer as described below:

- Early to mid 1990's vintage computers and printer were "handed down" to welding program.
- Four of existing computers do not work and cannot be used.
- The remaining computers are slow, unresponsive, subject to numerous "error" messages.
- Current campus professionals have pronounced them "extinct", and will not work on them.

Given college resources, is it feasible?
Based on requested funding compared to funding awarded other initiatives the program believes this initiative to be feasible.

Is it an efficient use of college resources?
If efficient can be equated with how effectively programs deliver services then this initiative can be considered an efficient use of college resources. Having reliable and safe equipment that is used almost daily in conducting the program's educational functions is necessary to its efficiency and effectiveness. Having equipment that cannot be relied on to deliver on its educational mission and/or may not always be as safe as possible is creates inefficiencies in the program.

What would be the campus location of this request/project?
The Fabrication/welding technology program is located on the main campus building 8.

How many students (per year) will benefit?
The program serves approximately 450 students (head count) per year.

How will students benefit?
Students will benefit by learning to industry entry-level how to operate equipment that they will be expected to operate as they obtain employment in the field for which they are being trained. They will benefit by having access to dependable, safe and current technology. They will benefit by learning to work efficiently with efficient equipment.

4. Requested Resources

Computer laboratory upgrade
31 computers = $31,000
1 networked laser printer = $2,000

5. Funding Sources

Student Technology Fees (TACT)
Carl Perkins

5.1 Alignment to Carl Perkins Act goals?

Student Skills Goal
This initiative will improve technical skills of students by providing opportunity for those students to learn how to operate safe and reliable equipment of a type that they will be expected to operate by their future employers

Work-based Learning Goal
The program contracts with employers of its students to do work that would utilize this initiative. That is, the program contracts with potential employers of its students to manufacture certain products. This initiative would be employed in this manufacturing process for the purpose of teaching safe and effective material handling as practiced in industry. Additionally students would be trained utilizing this initiative to a level that in many instances exceeds industry standards and practices.

Effect on Profession Technical Education student success?
Students will gain industry specified skills which lead to higher paying employment.

Brief Carl Perkins funding history
The Fabrication/welding technology. program has utilized CP funding over the last 20 years to enhance its capability to offer effective, efficient training through purchase of equipment. In that time CP money has allowed the program to align its capabilities with the needs of the industry for which it trains students. The result is better qualified students, a better and broader relationship with industry and more efficient use of educational time.

5.2 Alignment to Student Technology Fees.

This initiative is seeking Student Technology Fees. This initiative request to upgrade an existing student computer laboratory.

5.3 Curriculum Development

6. Organization and Program Codes

612205 112000

7. Alignment to the College's goals

This initiative aligns with the following college goals:

- Transforming Students' Lives
- Transforming the Learning Environment

Program Initiatives

4. 1. Initiative Title and Identifier (Unit Abbreviation, Fiscal Year, Type, Sequence Number)
Division Priority: 26

Initiative 4: Purchase a networked printer/copier/scanner to produce instructional documents of various sizes Fabrication Welding, FY 2005, Enhancement, 04 = **FW05E01**

2. Linkage to Program Analysis Findings

Finding 4: The program needs to continue to evaluate and enhance its curriculum. This current year will see the initial offering of a course that may be the beginning, if successful, of a sequential series of courses of the same type.
Finding 5: Program staff need a more efficient means of producing needed documents to teach core curriculum principles.

3. Describe the Initiative

Purchase a printer/copier with networking capabilities, and the capability to produce documents of various sizes.

What is the need or intended use?
This machine would be used by program staff to accomplish the task of ongoing curriculum development. As well as the generation of other needed program documents.

How was that need assessed?
Refer to the program analysis in chapter 3.

What is your evidence of the need?
Refer to the program analysis in chapter 3.

Given college resources, is it feasible?
Based on requested funding compared to funding awarded other initiatives the program believes this initiative to be feasible.

Is it an efficient use of college resources?
If efficient can be equated with how effectively programs deliver services then this initiative can be considered an efficient use of college resources. Having reliable and safe equipment that is used almost daily in conducting the program's educational functions is necessary to its efficiency and effectiveness. Having equipment that cannot be relied on to deliver on its educational mission and/or may not always be as safe as possible is creates inefficiencies in the program.

What would be the campus location of this request/project?
The Fabrication/welding technology program is located on the main campus building 8.

How many students (per year) will benefit?
The program serves approximately 450 students (head count) per year.

How will students benefit?
Students will benefit by having industry standard blueprints for use in the completion of their assigned projects. These blueprints must accurately depict the structural shapes currently available for use. Students will benefit by learning to industry entry-level how to operate equipment that they will be expected to operate as they obtain employment in the field for which they are being trained. They will benefit by having access to dependable, safe and current technology. They will benefit by learning to work efficiently with efficient equipment.

4. Requested Resources

Networked printer/copier/scanner = $8,500

5. Funding Sources

Carl Perkins
General Funds

5.1 Alignment to Carl Perkins Act goals?

Student Skills Goal
This initiative will improve technical skills of students by providing opportunity for those students to learn how to operate safe and reliable equipment of a type that they will be expected to operate by their future employers

Work-based Learning Goal
The program contracts with employers of its students to do work that would utilize this initiative. That is, the program contracts with potential employers of its students to manufacture certain products. This initiative would be employed in this manufacturing process for the purpose of teaching safe and effective material handling as practiced in industry. Additionally students would be trained utilizing this initiative to a level that in many instances exceeds industry standards and practices.

Effect on Profession Technical Education student success?
Students will gain industry specified skills which lead to higher paying employment.

Brief Carl Perkins funding history
The Fabrication/welding technology. program has utilized CP funding over the last 20 years to enhance its capability to offer effective, efficient training through purchase of equipment. In that time CP money has allowed the program to align its capabilities with the needs of the industry for which it trains students. The result is better qualified students, a better and broader relationship with industry and more efficient use of educational time.

5.2 Alignment to Student Technology Fees.

This initiative is seeking TACT funds. The networked printer/copier will be used by students in the blueprinting and cost-estimating courses.

5.3 Curriculum Development

6. Organization and Program Codes

612205 112000

7. Alignment to the College's goals

This initiative aligns with the following college goals:

- Transforming Students' Lives
- Transforming the Learning Environment

Lane Community College
Fabrication/Welding Technology Unit Plan 2004 - 2005

Initiatives Spreadsheet

Division Priority	Initiative ID	Expected completion date	Initiative Title	Resource Description	$$	Recurring	Resource Type (mark with an "X")				Funding Sources (mark with an "X")					
							Payroll (w/OPE)	Equipment	Space	Other	Existing	New Gen Fund	Carl Perkins	Stud Tech Fee	Curr Dev	Other
1	FW05M01	9/1/2005	Replace Forklift	Propane powered, 8,000 pound lifting capacity forklift	$35,000.00	No		X					X			
2	FW05M02	9/1/2005	Replace Vertical Bandsaw	Industrial Vertical Bandsaw	$22,000.00	No		X					X			
3	FW05M03	9/1/2005	Upgrade computer laboratory	31 student computer stations	$31,000.00	No		X						X		
3	FW05M03	9/1/2005	Upgrade computer laboratory	1 networked laser printer	$2,000.00	No		X						X		
4	FW05E01	9/1/2005	Networked printer/copier/scanner	Networked printer/copier/scanner	$8,500.00	No		X					X			

Lane Community College
Fabrication/Welding Technology Unit Plan 2004 - 2005

Equipment Inventory Spreadsheet

Program	Description	#	Unit Cost	Total Cost	Years of Life	Annual Cost
FW	Accur Press Pressbrake	1	200,000	200,000	25	8,000
FW	Tinius Olsen Tensile Machine	1	200,000	200,000	20	10,000
FW	Wire drive machines	22	4,200	92,400	5	18,480
FW	Angle toll	1	60,000	60,000	20	3,000
FW	Forklift	2	30,000	60,000	20	3,000
FW	Bandsaw	3	20,000	60,000	10	6,000
FW	Plasma Table, computerized	1	50,000	50,000	20	2,500
FW	Computers, lab	31	1,500	46,500	5	9,300
FW	Ironworker	2	20,000	40,000	20	2,000
FW	GTAW machines	11	2,955	32,500	5	6,500
FW	Equipment tooling(blades, dies)	1	25,000	25,000	5	5,000
FW	O/H Crane	1	25,000	25,000	20	1,250
FW	Bench measurement tools	1	20,000	20,000	10	2,000
FW	Metallurgical microscope (w/cam)	1	20,000	20,000	20	1,000
FW	Plate shear	1	20,000	20,000	20	1,000
FW	Gas cylinders- O2, CO3, Argon	88	180	15,840	20	792
FW	Arc welding machines	28	500	14,000	5	2,800
FW	Multi-function welding machine	1	11,000	11,000	5	2,200
FW	Plate roll, motorized	1	10,000	10,000	20	500
FW	Drill press, radial arm	1	10,000	10,000	20	500
FW	Rockwell hardness tester	1	10,000	10,000	20	500
FW	Mig guns	42	190	7,980	5	1,596
FW	Heat treating furnace	2	2,750	5,500	10	550
FW	Track torch	3	1,800	5,400	10	540
FW	Press brake, mechanical	1	5,000	5,000	20	250
FW	Computer software	1	5,000	5,000	5	1,000
FW	Plasma machine	1	3,300	3,300	5	660
FW	Gas cylinders, acet	14	220	3,080	20	154
FW	Gas regulators	35	85	2,975	5	595
FW	Hydraulic press	1	2,200	2,200	10	220
FW	Sheet metal brakes	2	1,000	2,000	20	100
FW	Laser printer	1	2,000	2,000	5	400
FW	Cutting regulators	12	140	1,680	5	336
FW	Cutting torches	11	150	1,650	5	330
FW	Sheet metal shear	1	1,440	1,440	15	96
FW	Hoods	34	35	1,190	5	238
FW	Grinders, 9"	5	229	1,145	5	229
FW	Plate roll, hand crank	1	1,000	1,000	20	50
FW	Drill press, large	1	1,000	1,000	20	50
FW	Rod oven	1	1,000	1,000	20	50
FW	Mag drill	1	1,000	1,000	5	200
FW	Pedestal grinder, large	2	500	1,000	20	50
FW	Items less than $1,000			8,201		1,573
	Existing Equipment Total			**1,086,981**		
	Annual Replacement Costs					**95,589**

Projected FY06 Program Outcomes

1. What program level outcomes do you expect to achieve?

The program has developed a set of learning outcomes and operational goals. Assessment of these program outcomes will be based on the measurement of the actual performance to the performance indicators. Please refer to the Program Learning Outcomes, Goals and Performance Indicators chart on page 9.

2. How will your program enhance your students' abilities to meet Core Abilities outcomes?

The program has developed an Learning Outcomes Assessment Matrix that maps all of the program and general education courses required to compete an associates degree against the program's learning outcomes, core abilities and learning college principles. The primary and secondary assessment methods are also identified. Please see this chart on page 11.

3. What course level outcomes do you expect to achieve?

What goals do you wish to set for 2004-2005?
Program goals remain as indicated for 2003-2004. That is that students would receive competent instruction in an effective and efficient learning environment that will lead to the acquisition of industrial entry-level skills. To accomplish this on-going goal the program will continue to prioritize equipment replacement needs and review its curriculum.

How will your courses grow, change or adapt?
The program will offer a new fabrication course winter '05 and again spring '05. Evaluation of results of these offerings will determine whether an expansion of this course concept (in the form or more advanced related courses) is warranted. Another new course intended to orient prospective fabrication/welding technology majors to the discipline will be made available summer '05.

How will your instructional methods change or adapt?
Both full-time instructors of the program up-graded their skills to include the use of AutoCad software. As a result an increasing amount of instructional communication will be accomplished through use of blueprints as per industrial standards.

What goals do you have for your instructional environment (classrooms and/or technologies and equipment)?
The program will continue to prioritize is laboratory equipment replacement needs. Equipment initiatives have already be identified for 2005-2006.
As indicated in Part IV of this document an initiative has been identified involving replacement of computer lab equipment and integration of the program's computer lab. into the College's TACT system.

4. What plans do you have for enhancing your use of current technologies?

Almost by definition equipment that is new, even though replacing an existing function, typically brings new efficiencies not available in the older equipment and, therefore, is, in effect, an enhancement. (See above for planned equipment replacement.

5. What plans do you have for working more effectively with your Advisory Committee?

A goal of program staff is to recruit additional members to its advisory committee. We would like to have members from welding sales/supplies, as well as welding inspection. If we are successful in reaching this goal we will have a broader based, more effective committee, representing more fabrication/welding technology disciplines.

6. How will you set faculty and staff goals?

The faculty and staff in this program will use this unit plan to help set goals. The inclusion of learning outcomes and operating goals provide the basis for assessment. The faculty and staff must continuously maintain and improve the program.

7. Enrollment Projections

The student enrollment is constrained by the number of faculty. If more faculty are hired, then the student enrollment will increase.

8. Student Success Projections
The student success projections are part of the Program Learning Outcomes, Goals and Performance Indicators (page 9). Additional measures of student success will be developed during the year and added to the chart.
9. Facilities and Equipment Need Projection
This program operates in an outstanding facility. Equipment needs include the costs of acquiring new technologies, and, maintaining, repairing, upgrading and replacing existing equipment.
10. Budget Projections
The general fund budget is not expected to increase. Carl Perkins and Technology Fee dollars will be required to maintain and enhance the equipment.

_____ _____
Advisory Committee Chair Date

_____ _____
Division Chair Date