Advanced Technology Division

Diesel Technology

Unit Plan

2004 - 2005

Lane Community College SM

Lane Community College
Diesel Technology Unit Plan 2004 - 2005

Table of Contents

Part I

Alignment with College 1
Core Values 1
Strategic Directions 1
Learning Centered Principles 2

Part II

Unit Description 4
Unit Mission/Vision 4
Catalog Description 4
History/Significant Program Events 5
Degrees and Certificates 6
Organizational Structure 9
Staff/Faculty 9
Student Profile 9
Facilities and Equipment 9
Budget Profile 9
Program Learning Outcomes, Goals and Performance Indicators 10
Program Learning Outcomes Assessment Matrix 12

Part III

Unit Performance 13
Program Operations – Actual to Expected Analysis 13
Program Operating Trends 14
Program Outcomes Analysis 15
Program Analysis Findings 17

Part IV

Projected Performance 18
Initiative 1 18
Initiative 2 20
Initiatives Spreadsheet 23
Equipment Inventory Spreadsheet 24
Projected FY06 Program Outcomes 25

Lane Community College
Diesel Technology Unit Plan 2004 - 2005

Part I. Alignment with the College

1) Core Values

The Diesel 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 Diesel Technology faculty also work very closely with other divisional programs, especially diesel, Diesel 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 Diesel 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 Diesel 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 Diesel Technology program have continuously developed their knowledge, skills and abilities as instructors and as industry experts.

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

Lane provides opportunities for transformation through learning.	The primary learning outcome of the Diesel 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 values of intellectual freedom, community	The Diesel Technology program conducts both formative assessment of a student's knowledge, employ-abilities, technical skills and academic

responsibility and student need.	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 Diesel 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 Diesel 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 Diesel 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 Diesel Technology program's vision is the same as the College's vision: *Transforming lives through learning.*

2) Catalog Description

Program Description

The Diesel Technology program is an occupational, preparatory, two-year Associate of Applied Science degree with a Lift Truck/Material Handling equipment Technician option and/or a two-year certificate of completion program.

The Diesel Technology program features state-of-the-art laboratories where students learn how to diagnose and repair on- and off-highway vehicles using advanced diagnostic tools and equipment. The advanced equipment and expertise of the faculty make Lane's Diesel Technology program the best way to enter the field.

Faculty in the program bring considerable field experience to the classroom and regularly attend workshops at manufacturer training centers to help them keep up with technological changes in the industry.

The program provides classroom instruction, considerable on-car training in the laboratories, and technical field experience that prepares you for employment in the diesel/heavy equipment service field. Program course work includes: Heavy Equipment Hydraulics; Heavy Duty Braking Systems; Heavy equipment Chassis & Power Trains; Diesel & Auxiliary Fuel Systems; Diesel Electrical Systems and Diesel Engines & Engine Overhaul.

Graduates of this program begin careers as heavy-duty equipment technicians; truck, tractor or fuel injection technicians; or diesel tune-up technicians.

This training can lead to employment in entry occupations with truck fleets, logging fleets, heavy construction companies, OEM dealerships road construction contractors, parts sales and service, general heavy equipments repair shops and automotive diesel service and repair. The median salary averages $36,600 annually. The growth in this industry is expected to be about as fast as average. Annual new openings are expected to be much higher than average. Those with an associate's degree would have a competitive advantage in this labor market.

New students can enter the program at the beginning of fall, winter, or spring terms. 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. Take testing results to the program orientation and/or advisor/counselor for assistance with course selections. Restricted facilities limit the number of students admitted to this program. Students are selected on a first-come, first-served basis by or date of application to this program.

Learning Outcomes

The graduate will:

- be able to explain and identify various technologies used in the repair of on- and off-highway vehicles.
- use lab station simulators to diagnose and troubleshoot system components.
- demonstrate checks and adjustments on heavy equipment chassis and power trains, including on highway automatic transmissions.
- demonstrate diesel engine overhaul procedures using industry standard tooling and equipment including disassembly, failure analysis, assembly, and operation of engine on a dynamometer.
- demonstrate industry troubleshooting procedures to diagnose electrical systems including starting, charging, air conditioning, electronic control systems and lighting.
- demonstrate industry troubleshooting procedures to diagnose hydraulic systems used on off- and on-highway vehicles including forklifts, crawlers, excavators, and hydraulic assist transmissions.
- demonstrate and use industry safety standards.
- access library, computing, and communications services and obtain information and data from regional and national networks.
- demonstrate basic math skills using formulas to find force, pressure, area, and volume.

The lift-truck material handling option graduate will also:

- demonstrate general maintenance, diagnosis, and testing of hydraulic systems on forklifts, loaders, and equipment with hydraulic assist transmissions.

Employment Trends
Employment in this industry is estimated to be much larger than average. Growth is projected to be about as fast as average. Annual new openings are expected to be much higher than average. Reasonable employment opportunities exist for competitively trained workers. Those with an associate degree would have a competitive advantage in this labor market.

Wages
Statewide $12 hourly, $18 median hourly, $15-21 middle range, and $36,688 average annually.

Costs in Addition to Tuition (estimates)
Books - $1,300
Tools - $400
Fees - $1,050
Total -$2,750
Fees are subject to change without notice.

Prerequisites
Minimum placement scores - Reading 68, Writing 64. A high school diploma or equivalent is recommended for all applicants to this program.
Note: See counselor or advisor to learn what entry-level skills are suggested for successful completion of this program.

Criteria Used for Admission
Students may enter this program fall, winter, or spring term. For consent to enroll in major courses, students must attend a program orientation for fall terms (dates available in Counseling or the Students First! Center) or contact advisor/counselor in winter and spring terms.

3) History/Significant Program Events

How did your instructional unit evolve at Lane?
This program has been offered at the college since 1976.

What significant events have marked your growth?

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 students in the program usually work on a community project such as habitat for humanity.

4) Degrees and Certificates

Two-Year Associate of Applied Science Degree	*Credits*
AAS Program Total	**107-109**
First Year	
Fall	
Heavy Equipment Hydraulics DS 155	12
Workplace Safety HE 125 or First Aid HE 252 or PE/Health requirement	3
Total Credits	**15**
Winter	
Heavy Duty Braking Systems DS 154	12
Wire Drive Welding WLD 143	4
Applied Geometry for Technicians MTH 076 or higher	4
Total Credits	**20**
Spring	
Heavy Equipment Chassis & Power Trains DS 158	12
Shielded Metal Arc Welding 1 WLD 121	4
Introduction to College Writing: Workplace Emphasis WR115W	3
Total Credits	**19**
Second Year	
Fall	
Diesel & Auxiliary Fuel Systems DS 256	12
Manufacturing technology MFG 197 or Shielded Metal Arc Welding 2 WLD 122	3-4
Concepts of Computing: Information Processing CS 120	4
Total Credits	**19-20**
Winter	
Diesel Electrical Systems DS 257	12
Human Relations requirement	3
Arts & Letters requirement	3
Total Credits	**18**
Spring	
Diesel Engines & Engine Overhaul DS 259	12
Applied Algebra for Technicians MTH 086 or higher	4
Cooperative Education: Diesel DS 280 (optional)	3
Total Credits	**16-19**

Two-Year Certificate of Completion	*Credits*
Two-year Certificate of Completion total	**82-85**
First Year	
Fall	
Heavy Equipment Hydraulics DS 155	12
Workplace Safety HE 125 or First Aid HE 252 or PE/Health requirement	3
Total Credits	**15**
Winter	
Heavy Duty Braking Systems DS 154	12
Wire Drive Welding WLD 143	4
Applied Geometry for Technicians MTH 076 or higher	4
Total Credits	**20**
Spring	
Heavy Equipment Chassis & Power Trains DS 158	12
Shielded Metal Arc Welding 1 WLD 121	4
Introduction to College Writing: Workplace Emphasis WR115W	3
Total Credits	**19**
Second Year	
Fall	
Diesel & Auxiliary Fuel Systems DS 256	12
Manufacturing technology MFG 197 or Shielded Metal Arc Welding 2 WLD 122	3-4
Total Credits	**15-16**
Winter	
Diesel Electrical Systems DS 257	12
Human Relations requirement	3
Total Credits	**15**
Spring	
Diesel Engines & Engine Overhaul DS 259	12
Cooperative Education: Diesel DS 280 (optional)	3
Total Credits	**12-15**

Two-Year Lift Truck / Material Handling Equipment Technician Option	*Credits*
Two-Year Lift Truck/Material Handling Equipment Technician Option totals	**107-111**
First Year	
Fall	
Heavy Equipment Hydraulics DS 155	12
Workplace Safety HE 125 or First Aid HE 252 or PE/Health requirement	3
Total Credits	**15**
Winter	
Diesel Electrical Systems DS 257	12
Wire Drive Welding WLD 143	4
Applied Geometry for Technicians MTH 076 or higher	4
Total Credits	**20**
Spring	
Diesel Engines & Engine Overhaul DS 259	8
Engine Performance AM 244	4
Shielded Metal Arc Welding 1 WLD 121	4
Introduction to College Writing: Workplace Emphasis WR115W	3
Total Credits	**19**
Second Year	
Fall	
Lift Truck/Material Handling Equipment (Mast/Upright) DS 260	6
Diesel & Auxiliary Fuel Systems DS 256	6
Manufacturing technology MFG 197 or Shielded Metal Arc Welding 2 WLD 122	3-4
Concepts of Computing: Information Processing CS 120	4
Total Credits	**19-20**
Winter	
Lift Truck/Material Handling Equipment (Electric) DS 260	9
Heavy Duty Braking Systems DS 154	3
Arts & Letters requirement	3
Human Relations requirement	3
Total Credits	**18**
Spring	
Lift Truck/Material Handling Equipment (Electric/Maintenance/Schematics) DS 260	9
Heavy Equipment Chassis & Power Trains DS 158	3
Applied Algebra for Technicians MTH 086 or higher	4
Cooperative Education: Diesel DS 280 (optional)	3
Total Credits	**16-19**

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 Diesel 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 Diesel Technology Program

6) Staff/Faculty

Name	Al Clark
Classification	Full-Time Faculty
Year Hired	1989
Degrees/Credentials	A.S. Diesel; A.S.E. Certification Master Technician

Name	Steven Webb
Classification	Full-Time Faculty
Year Hired	2001
Degrees/Credentials	A.A.S. Diesel; A.S.E. Certification Master Technician

7) Student Profile

Please refer to the Program Learning Outcomes, Goals and Performance Indicators on page 10.

8) Facilities and Equipment

The Diesel Technology program is housed in building 9.

What are its strengths?
The program has very good facilities and training equipment.

Its challenges?
The program has $476,000 in existing equipment. It is very difficult to maintain, replace and upgrade this equipment. Additionally, the program must keep current with new advances in the industry and in instructional technologies. The program is reliant upon Carl Perkins and the local business for support.

What are your utilization ratios?
This program is exceeding the expected student to faculty ratio (expected is 26 : 1, actual is 28.1 : 1)

Provide a copy of your equipment inventory.
Please refer to the Equipment Inventory Spreadsheet on page 24.

What are your equipment strengths?
The equipment is portable (it can be easily moved to construction sites).

Challenges?
There is very little shop instruction occurring on the campus because of the limitation of space and equipment.

Do you have any plans in place for equipment replacement?
Refer to the Existing Equipment Inventory Spreadsheet on page 24.

9) Budget Profile

Refer to the Program Operations charts on pages 13 and 14**.**

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.	90% of all students will pass a safety written and demonstration test.
3) Demonstrate technical skills and knowledge to pass the certification exams in nine areas of Automotive Service Excellence Standards: Diesel Engines; Drive Trains; Brakes; Suspension and Steering; Electrical/Electronic Systems; Heating, Ventilation and Air Conditioning; Preventative Maintenance Inspection; Auxiliary Power System; and, Truck Equipment.	90% of the students who complete the program will have gained the necessary competencies to pass the ASE certification examinations.
4) Demonstrate industry troubleshooting procedures to diagnose and repair heavy duty equipment hydraulic systems.	90% of the students who complete the program will pass an industry certification examination.
4) Perform computations for gear ratios, engine displacement, electrical circuits, hydraulic circuits, power output, vehicle alignment angles, conversion between metric and standard measures, and use of precision measuring instruments and tools.	90% of the program completers will pass a final program computations examination with a 70% or better score.
5) Demonstrate technical abilities in researching, accessing and interpreting written, computer program or web-based reference materials for construction and carpentry.	All students will conduct research with citations in a written report in both the first and second year of the program.
Student Success Goals	**Performance Indicators**
Students will have access to the program.	The program will achieve the following student to faculty ratios: R-SFTE / FFTE = 26 : 1 CH-SFTE / FFTE = 16 :1 This means for every funded faculty position 26 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 28.1 to 1 R-SFTE/FFTE ratio, and a 16.9 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. 50 of the unduplicated headcount were declared majors.
Program graduates will increase as a percentage of the total students enrolled.	No data available
The percentage of enrolled female students in the program will exceed the percentage of females in the division programs.	12% of students enrolled in the advanced technology division were female. 10% of the Diesel Technology students were female.
The percentage of enrolled non-Caucasian program students will exceed the percentage of the non-Caucasian students in the college.	12% of the Diesel 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 98.47%.
The percentage of program term completers who receive a C- or greater will exceed the college "success" rate.	The college "success" rate was 79.08%. The program "success" rate was 96.18%.
Students will complete the program within three years.	90% of the students who complete the two-year automotive program will have completed within nine terms.
Student completers will be asked to evaluate their overall satisfaction with the program training.	95% of the students who complete the diesel technology program will express satisfaction with the level of training provided.
Employers will be satisfied with the job performance of the prior year's program completers.	90% of employers will express job performance satisfaction with the program's student completers. On a five point Likert scale, satisfaction is greater than the midpoint.

Lane Community College
Diesel Technology Unit Plan 2004 - 2005

Program Learning Outcomes Assessment Matrix

Diesel Technology	DS 155 Heavy Equipment Hydraulics	DS 154 Heavy Duty Braking Systems	DS 158 Chassis & Power Trains	DS 256 Diesel & Auxiliary Fuel Systems	DS 257 Diesel Electrical Systems	DS 259 Diesel Engines and Overhauls	DS 280 Cooperative Education (suggested)	WLD 121 Shielded Metal Arc Welding	WLD 143 Wire Drive Welding 1	WLD 122 SMAW 2 or MFG 197 Manufacturing	Arts and Letters	CS 120 Concepts of Computing	HE 125 Workplace Safety *	Human Relations	MTH 076 Applied Geometry for Technicians	MTH 086 Applied Algebra for Technicians	WR 115W Introduction to College Writing
Associate Degree Credit Hours (108 Total Credits)	12	12	12	12	12	12		4	4	4	3	4	3	3	4	4	3
Two-year Certificate Credit Hours (97 Total Credits)	12	12	12	12	12	12		4	4	4	3		3		4		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	P	P	P	P		S	P	S			
Demonstrate safe work practices and tool usage while performing operations in a shop environment.	P	P	P	P	P	P	P	P	P	P			P				
Demonstrate technical skills and knowledge to pass the certification exams in nine areas of Automotive Service Excellence Standards: Diesel Engines; Drive Trains; Brakes; Suspension and Steering; Electrical/Electronic Systems; Heating, Ventiltion and Air Conditioning; Preventative Maintenance Inspection; Auxiliary Power System; and, Truck Equipment.	P	P	P	P	P	P	P	P	P	P		S	S		S	S	
Demonstrate industry troubleshooting procedures to diagnose and repair heavy duty equipment hydraulic systems.	P	P	P	P	P	P	P	P	P	P		S	S		S	S	
Perform computations for gear ratios, engine displacement, electrical circuits, hydraulic circuits, power output, vehicle alignment angles, conversion between metric and standard measures, and use of precision measuring instruments and tools.	P	P	P	P	P	P	P	P	P	P		S			P	P	
Demonstrate technical abilities in researching, accessing and interpreting written, computer program or web-based reference materials for diesel technology.	S	S	S	S	S	S	S	S	S	S	P	S		S			P
Core Abilities																	
Communicate effectively.	P	P	P	P	P	P	P	P	P	P							
Think critically and solve problems effectively.	P	P	P	P	P	P	P	P	P	P		P	P	P		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	S			S	P			
Explore academic disciplines of liberal arts, social sciences, and physical sciences.											P	P	P	P	P	P	P
Learning College Principles																	
Learners are active partners in the learning process.	P	P	P	P	P	P	P	P	P								
Learners are self-directed.	P	P	P	P	P	P	P	P	P								
Multiple learning options for diverse learners.	P	P	P	P	P	P	P	P	P								
Learning is promoted across organizational boundaries.																	
Learning is substantive and documented.	P	P	P	P	P	P	P	P	P								
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	P	P	P	P	P	P											
Journaling	S	S	S	S	S	S											
Library Research	S	S	S	S	S	S											
Oral Report/Presentation	P	P	P	P	P	P											
Peer Assessment	S	S	S	S	S	S											
Portfolio	S	S	S	S	S	S											

Lane Community College
Diesel Technology Unit Plan 2004 - 2005

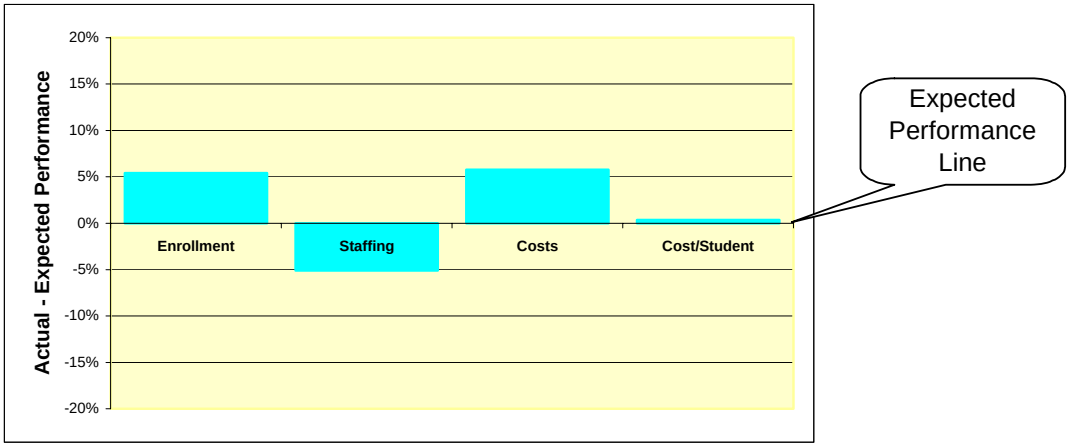
Unit Performance

Program Operations – Actual to Expected Analysis

Diesel Technology

	2003 - 2004 Outcomes	Expected*	Actual	Difference	Analysis
1	**Enrollment**				
2	Reimbursable Student FTE	53.333	56.210	105%	
3	Credit Hour Student FTE	32.000	33.726	105%	**Enrollment is higher than expected.**
4	Student Head Count	80	50	63%	
5	**Staffing**				
6	Full-time Equivalent Faculty	1.686	2.000	119%	
7	Part-time Equivalent Faculty	0.422	0.000	0%	
8	**Total Faculty FTE**	**2.108**	**2.000**	**95%**	**Faculty Staffing is lower than expected.**
9	**Budget**				
10	FT Faculty Dollars	91,381	108,381	119%	
11	PT Faculty Dollars	13,707	208	2%	
12	Lab Assistant Dollars	8,000	15,469	193%	50% of Ed's costs
13	Other Payroll Expenses	53,833	59,055	110%	
14	Materials and Supplies	14,755	9,046	61%	
15	**Direct Instruction Costs**	**181,677**	**192,159**	**106%**	**Expenses are higher than expected.**
16	**Operating Ratios**				
17	R-SFTE/Faculty FTE	25.30	28.11	111%	
18	CH-SFTE/Faculty FTE	15.18	16.86	111%	**Faculty are serving more students.**
19	Cost / R-SFTE	3,406.45	3,418.59	100%	
20	Cost / CH-SFTE	5,677.41	5,697.65	100%	**Cost per student is equal to expected.**
21	**Non-tuition Revenues**				
22	Course Fees				
23	Differential Fees				
24	Program Fees				
25	Sales				
26	Donations				

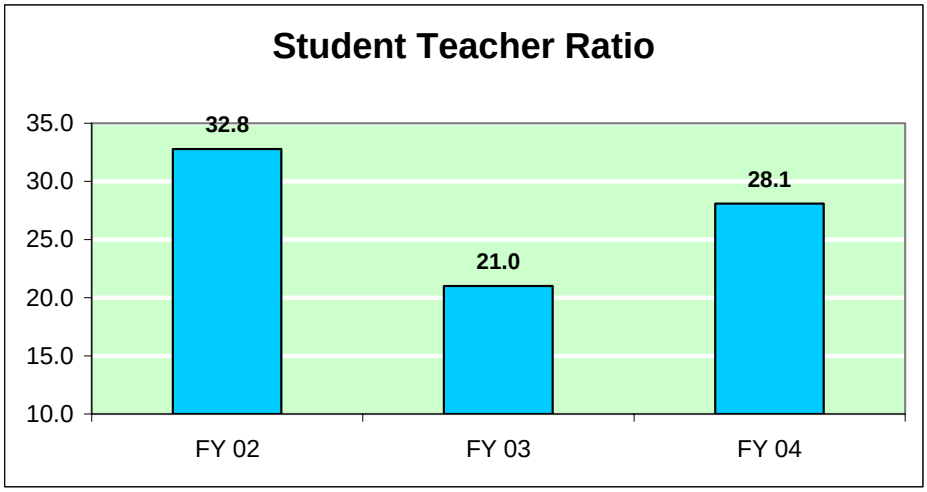
* Expected calculations are based on the instructional program benchmarks model.
* This program is a medium cost program in the benchmark model.

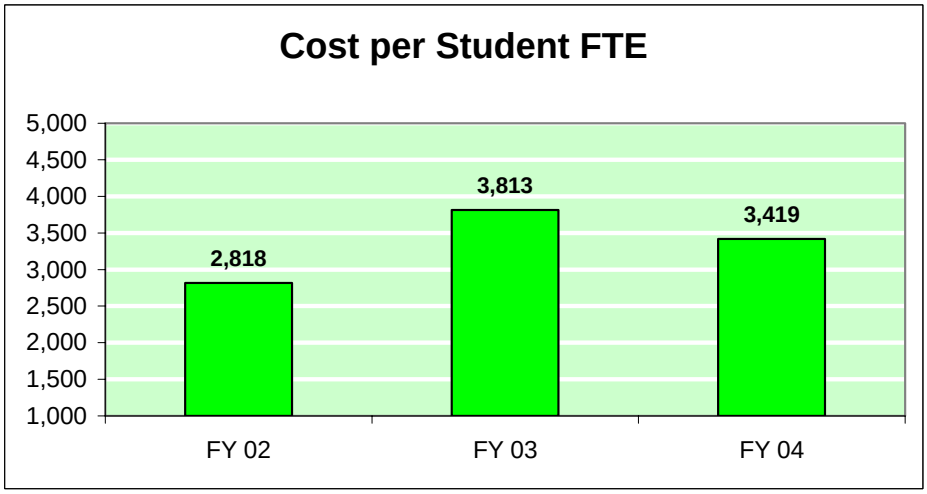


Program Operating Trends

Diesel Technology

	Operating Data	FY 02 Actual	FY 03 Actual	FY 04 Actual
1	Full-Time Faculty FTE	2.000	2.000	2.000
2	Part-Time Faculty FTE	0.000	0.000	0.000
3	Total Faculty FTE	2.000	2.000	2.000
4	Student FTE	65.560	42.000	56.210
5	SFTE / FFTE	32.780	21.000	28.105
6				
7	Full-Time Faculty	100,803	104,928	108,381
8	Part-Time Faculty	0	0	208
9	Lab Assistant	18,871	14,330	15,469
10	Other Payroll Expenses	55,888	31,774	59,055
11	Materials and Supplies	9,200	9,129	9,046
12	Total	184,762	160,161	192,158
13	Cost per Student FTE	2,818	3,813	3,419





Program Outcomes Analysis

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

The program served 50 students (56.21 reimbursable student FTE). Our unit's mission was fulfilled by the fact Students were hired by advisory committee members and the local industry. We consulted with our committee members for feedback on the student's performance. We used a Qualitative assessment based on diesel industry standards to determine how the students perform in the workplace. These standards are determined by our advisory committee and rely heavily on their input.

The evidence shows strengths in the ability of the student to perform in the workplace.

2. How well did students meet your learning outcomes?

Refer to the Program Learning Outcomes (pages 10 and 11) for the performance indicators. We Identified the performance indicators this year. It is our intent to measure these goals in next year's unit plan.
The Diesel Programs learning outcomes are in alignment with current industry standards provided by the Diesel advisory committee. The student's performance was measured using standards established by the Diesel advisory committee members. We used the Qualitative assessment based on diesel industry standards to determine how the students perform in the workplace. These standards are determined by our advisory committee and rely heavily on their input.

The evidence shows strengths in the ability of the student to meet the program's learning outcomes.

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

Refer to the Program Learning Outcomes Assessment Matrix on page 12.
The students demonstrated their ability to communicate effectively, think critically and solve problems, plus show a mastery of knowledge in the diesel field. The students were given pre and post tests to provide the evidence of their performance in both the lab and classroom. Scores from the pre and posttests, lab tasks and written exams were used for the Quantitative assessment.

The evidence shows the students are meeting the core ability outcomes.

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

Please refer to the Program Operations: Actual to Expected Analysis on page 13.
In summary:

Enrollment: 5% greater than expected.
Staffing: 5% less than expected.
Budget: 6% more than expected (this is due to the tool room classified position)
Cost per Student: equal to what was expected.

The Diesel program used all of the Carl Perkins resources this year to purchase Lab training stations and support equipment as recommended by the advisory committee members. Resources were also used to repair existing equipment in the lab. Evident of performance was determined by our response to the recommendations of equipment purchases and repairs by the Diesel Advisory committee members. The Qualitative assessment was used to show the before and after condition of the equipment.

5. How well are you utilizing current technology?

The Diesel program has always been driven to provide students with the newest diesel technologies and by utilizing the direction of the diesel advisory committee for information and resources. Performance was measured by Advisory committee review of program. We used the Qualitative assessment based on diesel industry standards to determine how the students perform in the workplace. These standards are determined by our advisory committee and rely heavily on their input. The Diesel program is utilizing current technology in accordance with the advisory committee recommendations.

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

The Diesel program works very closely with our Advisory committee. With over thirty active members they provide

the support needed to keep the Diesel program on the leading edge of technology. We submitted a five-year outlook survey to the Diesel advisory committee and responded to their recommendations. We used the Qualitative assessment based on diesel industry standards to determine how the students perform in the workplace. These standards are determined by our advisory committee and rely heavily on their input. The evidence demonstrates the Diesel program has very strong local industry support .

Date of meetings and number of attendees.
October 17,2003 attendees-12, January 30,2004 attendees-13, & April 16, 2004, attendees-12

Advisory committee members review the Diesel program curriculum at least three times per year, or as new equipment is added to ensure the training will meet industry standards. An example would be the freight truck training station, members recommended specific tests to be performed on it. Changes were made within the curriculum to reflect these test procedures. New members are added to ensure diversity and innovation within our local industry.

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

The Diesel program instructors meet their basic goals of updating course textbooks, creating new classroom presentations and adding new lab stations. They also meet other program goal of increasing student enrollment, funding for new lab equipment, and training aids. In addition they are continuing to update the curriculum in response to advisory committee recommendations. Evidence was gathered from class evaluations, Advisory committee comments, and the recent success enjoyed by the program in searching for funding. We used the Qualitative assessment based on diesel industry standards to determine how the students perform in the workplace. These standards are determined by our advisory committee and rely heavily on their input.

The faculty is very responsive to the recommendations of the advisory committee and are keeping the program in stride with current and changing technologies.

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

Lab Station #1 Eaton Autoshift /ABS brake Station
Lab Station # 2 Hydraulic/Electrical station

For each initiative: How well did you meet your goals?
With funding provided the equipment was purchased and implemented into the curriculum

What benefits did your program accrue from the initiative?
The students now have access to new technology

What challenges arose?
No challenges were encountered

How effectively were you able to utilize resources?
The resources were easy to access and easy to keep track of. The P/card system is very flexible and work well with industry suppliers

9. What are the overall unit's strengths?

Student placement and consistent involvement from the Diesel advisory committee.

10. What are the overall unit's challenges?

Funding, high student enrollment and limited space available, equipment limitations.

11. Program Analysis Findings

Finding 1: The Diesel Technology program is meeting both its learning and operating goals. Students are completing the program, passing the ASE certification exams, and finding employment in the industry. The program is efficient in the use of resources to accomplish its goals.
Finding 2: The Diesel Technology program needs to maintain its laboratory equipment.
Finding 3: The Diesel Technology program needs to continuously improve its curriculum and operations. The program should acquire new technologies to keep current with advances in diesel and instructional technologies.

Part IV: Projected Performance

Program Initiatives

1. 1. Initiative Title and Identifier (Unit Abbreviation, Fiscal Year, Type, Sequence Number)
Division Priority: 8

Initiative 1: Replace or Upgrade Existing Program Equipment and Software
Diesel Technology, FY 2005, Maintenance, 01 = **DT05M01**

2. Linkage to Program Analysis Findings

Finding 2: The Diesel Technology program needs to maintain its laboratory equipment. The total equipment inventory value is $476,000. The average annual replacement and upgrade cost should average $51,200.

3. Describe the Initiative

What is the need or intended use?
The program has an existing inventory of equipment and software that needs to be replaced or upgraded. Students should have current and operational equipment to ensure they are appropriately trained.

How was that need assessed?
There is a life cycle cost for all equipment and software. Equipment and software required for instructional program must eventually be replaced or upgraded (refer to the Existing Equipment Inventory on page 26).

What is your evidence of the need?
The program has an equipment inventory.

Given college resources, is it feasible?
Yes. The College should strive to maintain or improve its level of quality in the instructional programs.

Is it an efficient use of college resources?
Yes. Funding the life-cycle costs of equipment will minimize the cost of funding critical failures.

What would be the campus location of this request/project?
The Diesel Technology program is located on the main campus building 9.

How many students (per year) will benefit?
The program serves approximately 50 students (head count) per year. (56.21 R-SFTE).

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

1) Power Train Lab Station = $20,000
   This is an Allison automatic transmission training module, mounted on a stand, with full authority diagnostic control systems.

2) Diesel Engine Repair Lab Station = $20,000
   This is a 16 liter highway truck engine, mounted on an engine stand, with full authority diagnostic emission control system.

3) Fuel System Lab Station = $20,000
   This is part of an engine, mounted on an engine stand, and would simulate a full authority electronic fuel system.

4) Electronic Diagnostics Lab = $20,000
This is a mobile truck chassis with electronic circuit systems that represent multiplexing and full authority diagnostic access.

5) Brake System Lab Station = $20,000
This is an airbrake system that will represent current industry highway trucks. It will include electronic diagnostics, ABS and is mounted on a mobile stand.

6) Hydraulic System Lab Station = $20,000
This is an electronically controlled hydraulic system which represents the off-highway industry standards. It will be mounted on a mobile training station and will include full authority diagnostic access.

7) Building Exhaust System = $30,000
This will upgrade the existing building exhaust system to conform to industry safety standards.

5. Funding Sources

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
Students should be trained on equipment similar to what they will work with when employed. Employers are seeking employees with knowledge and training on the equipment they have.

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 Diesel Technology program is reliant upon Carl Perkins funding to maintain and enhance its equipment and other instructional resources. This funding 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 student technology fees (TACT).

5.3 Curriculum Development

6. Organization and Program Codes

611600 112000

7. Alignment to the College's goals

This initiative aligns with the following college goals:

- Transforming Students' Lives
- Transforming the Learning Environment
- Transforming the College Organization
    - o implementing a "life-cycle" approach for funding equipment

Program Initiatives

2. 1. Initiative Title and Identifier (Unit Abbreviation, Fiscal Year, Type, Sequence Number)
Division Priority: 20

Initiative 2: New Equipment, Software and Curriculum to Improve the Program
Diesel Technology, FY 2005, Enhancement, 01 = **DT05E01**

2. Linkage to Program Analysis Findings

Finding 3: The Diesel Technology program needs to continuously improve its curriculum and operations. The program should acquire new technologies to keep current with advances in diesel and instructional technologies.

3. Describe the Initiative

What is the need or intended use?
The dieseltechnology program needs to continuously improve its instruction to keep current with advances in the industry.

How was that need assessed?
Faculty assess the need to adapt and or create new instructional opportunities. This assessment involves investigating the emerging technology needs of local industries. Additionally, the faculty research national and regional trends through reviewing the literature and talking with other professional colleagues.

What is your evidence of the need?
There is a discrepancy between what the program can teach and what an entry level graduate will be required to know. Industrial training modules, mobile shop computers, a vertical mill and a parts cleaning oven are examples of new technology needs.

Given college resources, is it feasible?
Yes. The College should strive to improve its level of quality in the instructional programs.

Is it an efficient use of college resources?
Yes. A current and relevant program will attract and retain more students. Students who complete a current and relevant program are much more employable.

What would be the campus location of this request/project?
The diesel technology program is located on the main campus building 9.

How many students (per year) will benefit?
The program serves approximately 50 students (head count) per year. (56.21 R-SFTE).

How will students benefit?
A current and relevant program will attract and retain more students. Students who complete a current and relevant program are much more employable.

4. Requested Resources

1) Bio-Diesel Lab Station = $35,000
This is a complete engine dedicated to running experiments on effects of bio-diesel fuels. This station will be mounted and have full diagnostics access. The station will be used by both the diesel and science faculty and students.

2) Recruiting Materials = $15,000
This is a complete transportable set of high school recruitment display and demonstration materials to include: LCD projectors, computer, industry diagnostic software, etc.

3) Full Authority Vehicle Electronic Control Diagnostic Lab Station = $50,000

This station will incorporate all of the vehicle's computers electronic control systems into a master control system. The net effect is to connect all of the computers and associated diagnostics into one master control system.

4) Engine Exhaust System Analyzer = $30,000
This will provide measuring vehicle exhaust emissions to compare them to EPA's standards.

5) Vehicle Lift System = $60,000
This is a heavy duty, portable, and above ground portable lift.

6) Backhoe Lab Station = $50,000
This is a Caterpillar backhoe full authority, electronic control diagnostics system for hydraulics, electronics, engines, brakes, fuel systems, air conditioning and power trains.

7) Road Grader Lab Station = $ 75,000
This is a Caterpillar road grader full authority, electronic control diagnostics system for hydraulics, electronics, engines, brakes, fuel systems, air conditioning and power trains.

5. Funding Sources

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
Students should be trained on equipment similar to what they will work with when employed. Employers are seeking employees with knowledge and training on the equipment they have.

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 automotive technology program has utilized Perkins funding over the last 20 years to enhance its capability to offer effective, efficient training through purchase of equipment. In that time, Perkins 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 Student Technology Fees.

5.3 Curriculum Development

How will this initiative improve learning?
By incorporating new technologies and training materials into the curriculum.

What specific curricular materials will be produced?
New course laboratory training materials, projects and tests.

Why is this curriculum development and not just curriculum maintenance?
These items are new to the curriculum. The faculty must become proficient with the equipment/software and prepare new learning materials.

6. Organization and Program Codes

611600 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
Diesel Technology Unit Plan 2004 - 2005

Initiatives Spreadsheet

Division/Unit	Priority	Initiative ID	Expected completion date	Initiative Title	Resource Description	$$	Recurring / Nonrecurring	Resource Type (mark with an "X")				Funding Sources (mark with an "X")					
								Payroll (w/OPE)	Equipment	Space	Other	Existing	New GF	Carl Perkins	Stud Tech	Curr Dev	Other
Diesel Technology	1	DT05M01	12/7/2005	Replace/Upgrade Existing Equipment	Power Train Lab Station	$20,000.00	NR		x					x			
Diesel Technology	2	DT05M01	12/7/2005	Replace/Upgrade Existing Equipment	Diesel Engine Repair Lab Station	$20,000.00	NR		x					x			
Diesel Technology	3	DT05E01	12/7/2005	New Equipment to Improve the Program	Bio- Diesel Lab Station	$35,000.00	NR		x					x			
Diesel Technology	4	DT05E01	12/7/2005	New Equipment to Improve the Program	Recruiting Materials	$15,000.00	NR		x					x			
Diesel Technology	5	DT05M01	12/7/2005	Replace/Upgrade Existing Equipment	Fuel System Lab Station	$20,000.00	NR		x					x			
Diesel Technology	6	DT05M01	12/7/2005	Replace/Upgrade Existing Equipment	Electronic Diagnostics Lab Station	$20,000.00	NR		x					x			
Diesel Technology	7	DT05E01	12/7/2005	New Equipment to Improve the Program	Control Diagnostic Lab Station	$50,000.00	NR		x					x			
Diesel Technology	8	DT05E01	12/7/2005	New Equipment to Improve the Program	Engine Exhaust System Analyzer	$30,000.00	NR		x					x			
Diesel Technology	9	DT05M01	12/7/2005	Replace/Upgrade Existing Equipment	Brake System Lab Station	$20,000.00	NR		x					x			
Diesel Technology	10	DT05M01	12/7/2005	Replace/Upgrade Existing Equipment	Hydraulic System Lab Station	$20,000.00	NR		x					x			
Diesel Technology	11	DT05M01	12/7/2005	Replace/Upgrade Existing Equipment	Building Exhaust System	$30,000.00	NR		x					x			
Diesel Technology	12	DT05E01	12/7/2005	Replace/Upgrade Existing Equipment	Vehicle Lift System	$60,000.00	NR		x					x			
Diesel Technology	13	DT05E01	12/7/2005	New Equipment to Improve the Program	Backhoe Lab Station	$50,000.00	NR		x					x			
Diesel Technology	14	DT05E01	12/7/2005	New Equipment to Improve the Program	Road Grader Lab Station	$75,000.00	NR		x					x			

Equipment Inventory Spreadsheet

Existing Equipment Inventory

Program	Description	#	Unit Cost	Total Cost	Years of Life	Annual Cost
DL	Power Train Lab Station	1	20,000	20,000	10	2,000
DL	Diesel Engine Repair Lab Station	1	20,000	20,000	10	2,000
DL	Fuel System Lab Station	1	20,000	20,000	10	2,000
DL	Electronic Diagnostics Lab Station	1	20,000	20,000	10	2,000
DL	Brake System Lab Station	1	20,000	20,000	10	2,000
DL	Hydraulic System	1	20,000	20,000	10	2,000
DL	Building Exhaust System	1	30,000	30,000	20	1,500
DL	Special training components	50	20	1,000	5	200
DL	Tool sets	25	2,000	50,000	5	10,000
DL	Vehicles	6	25,000	150,000	10	15,000
DL	Engines	25	5,000	125,000	10	12,500
	Existing Equipment Total			**476,000**		
	Annual Replacement Costs					**51,200**

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 10.

On July 28th 2004, the Diesel program was officially accredited by the AED Foundation (Association Of Equipment Distributors).

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

The program has developed a 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 12.

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 courses will remain the same.

How will your instructional methods change or adapt?
If the initiatives are funded, the students will have better access to the instructors in a better shop environment.

What goals do you have for your instructional environment (classrooms and/or technologies and equipment)?
We are seeking to maintain and enhance our instructional equipment.

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

The program is requesting upgraded instructional lab stations, tools and equipment. Refer to initiative 1.
The program is request new instructional lab stations, tools and equipment. Refer to initiative 2.

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. If we are successful in reaching this goal we will have a broader based, more effective committee, representing more Diesel 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 has sufficient facility but requires the continuous upgrading and acquisition of new equipment to conform to the advances in the industry and in instructional technologies.

10. Budget Projections

Carl Perkins and Technology Fee dollars will be required to maintain and enhance the equipment.

_____ _____
Advisory Committee Chair Date

_____ _____
Division Chair Date