Diesel Technology Program
Santa Ana College

DEPARTMENT PLANNING PORTFOLIO ASSESSMENT/ PROGRAM REVIEW

2008-2012

1. What are the department’s annual goals?
How do they align with the college mission statement and the Santa Ana College Strategic Plan?

Following the mission of Santa Ana College, the Santa Ana College Diesel Program strives to meet the needs of our diverse students in preparation for employment. This program emphasizes problem solving and communication, information and technology competency, as well as ethical and environmental responsibility in career training. Safety and lifelong learning are also stressed as critical components of a career in an ever changing field.

Aligned with the college mission statement and the Santa Ana College Strategic Plan, emphasis is placed on student success and retention, access for all students including disabled and disadvantaged, technology resources and use, diversity and student satisfaction.

The primary objective during this cycle of the Diesel Program was the need to keep the total program evolving and improving. The technology in the Diesel/Transportation industry is constantly becoming more complex and computer driven. Numerous improvements must continually occur to try to keep up with these changes. Instructors must maintain required certifications and attend industry training. Vehicles and equipment must be maintained at an industry approved level. The equipment is updated through CARB/CCDET funds, also through donations. Updates are approved by advisory committee members. Strong relationships with industry must continue and further develop. The need for life-long learning and continual personal development are continually stressed.

A secondary objective is to maintain the Diesel programs relationship with CCDET (California Council on Diesel Education and Technology) and CARB (California Air Resources Board). During this cycle the Diesel Program has provided CCDET I Certification Training to the industry, allowing the transportation industry to meet California’s Clean Air Regulations. CCDET II course was developed during this cycle as per a request from CARB.
### PROGRAM GOALS

<table>
<thead>
<tr>
<th>PROGRAM GOALS</th>
<th>PROGRESS</th>
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<tbody>
<tr>
<td><strong>Re-acquire additional hours for diesel tool room keeper.</strong></td>
<td><strong>Not yet achieved due to budget constraints</strong></td>
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<td>The Diesel department tool room/store keeper hours have been cut over the</td>
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<td>last several years due to budget cuts. The instructor must spend</td>
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<td>instructional time locating and checking out tools and supplies for</td>
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<td>students. This time would have been spent demonstrating procedures and</td>
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<td>double checking student progress. The replacement of these hours would</td>
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<td>allow the instructor to better meet the needs of the student during the</td>
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<td>lab phase of the class.</td>
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<td>**Continue to market the Diesel Program on campus, high schools/ROPs and in</td>
<td><strong>Goal Achieved, but will remain ongoing</strong></td>
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<td>the community.**</td>
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<td>The Diesel Program continues to build awareness of our services by</td>
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<td>numerous means. The Diesel instructor attends careers days and fairs and</td>
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<td>various local high schools and ROPs. Typically a movie is shown which</td>
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<td>explains the career opportunities in the transportation industry.</td>
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<td>Handouts are given to students and counselors that include course, degree,</td>
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<td>and certificate descriptions. Non-traditional students are targeted for</td>
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<td>possible interest and enrollment. While the program has an overflow of</td>
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<td>students at the present time, the staff strives to continue the building</td>
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<td>of community awareness.</td>
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<td>Local high schools, ROPs, business partners, and individual students are</td>
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<td>given tours of the Diesel Program as requested. These occur numerous</td>
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<td>times per year, with focus on individual needs and interest.</td>
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<td>A Diesel Program DVD is also available for distribution to local schools.</td>
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<td>The Diesel Program has built close ties with the local high schools and</td>
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<td>ROPs through site visits and donations. After Board approval, several</td>
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<td>engines have been donated to local schools. Supplies and components have</td>
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<td>also been donated as newer technology is obtained at SAC.</td>
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<td><strong>Maintain Faculty Certification in areas of instruction. USEPS 608 certification. Maintaining manufacture course content approval with Thermo King and Carrier Transicold, and Cummins Engine Company.</strong></td>
<td><strong>Goal Achieved, but will remain ongoing</strong></td>
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<tr>
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<td>Diesel facility maintained USEPA certification during this review cycle.</td>
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<td>This certification is required under the Clean Air Act.:</td>
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<td>Program approval by industry manufactures is a critical component for</td>
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<td>meeting students entry level skills and knowledge.</td>
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<td><strong>Provide CCDET I courses through community Services allowing the transportation industry to meet CARB certification requirements.</strong></td>
<td><strong>Goal Achieved, but will remain ongoing</strong></td>
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<td>The Diesel Technology Program is one of the five CCDET colleges in the</td>
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<td>state that provides specialized training on Clean Air requirements</td>
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<td>required by CARB, so that the transportation industry can be in</td>
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<td>compliance with the HDVIP and PSIP programs.</td>
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<tr>
<td>Goal</td>
<td>Achieved Status</td>
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<td>Develop and provide CCDETII course through community services allowing the transportation industry to comply with Diesel exhaust after-treatment clean air requirements.</td>
<td>Goal Achieved, but will remain ongoing</td>
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<td>Prepare students for ASE certification exams.</td>
<td>Goals Achieved, but will remain ongoing</td>
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<tr>
<td>Prepare students for EPA 609 Refrigerant Handling certification exam.</td>
<td>Goals Achieved, but will remain ongoing</td>
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<td>Maintain annual required Instructor update training in the Diesel field.</td>
<td>Goals Achieved, but will remain ongoing</td>
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<td>Deliver transit bus technician USEPA 608 certification courses for SCRTTC as requested.</td>
<td>Goal Achieved</td>
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<tr>
<td>Establish Heavy-Duty Engine Alternative Fuel course content.</td>
<td>Goal Achieved</td>
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</table>
| Update equipment, vehicles, and courses to meet the needs of the continually changing Diesel/Transportation industry technology. | **Goals Achieved, but will remain ongoing**
**Grand Funding:**
2008-2009 CCDET and CARB settlement funds.
2009-2010 CCDET and CARB settlement funds
2010-2011 CCDET and CARB settlement funds
2011-2012 CCDET and CARB settlement funds
**Instructional units purchased with CARB funds:**
2009 SB 210 trailer refrigeration unit
2009 X2100A Carrier trailer refrigeration unit
2010 USEPA certified Cummins ISX training module
2010 T 600 Thermo King truck refrigeration unit
2011 USEPA certified International MaxxForce 7 engine
2011 Carrier Vector Hybrid trailer refrigeration unit
Heavy-duty vehicle lifts
Purchased various special tools and test equipment for the above equipment

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<th>Purchase tools and equipment required to train and work on the new technology.</th>
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| Thermo King factory approved regional training site contract was terminated. | **Goal Lost/ Not achieved**
Thermo King requested to expand and extend the training agreement with the college. Administration decided to drop the training partnership with Thermo King Corporation. Local industry partners have asked if it will return. |

| Maintain Current and Develop New Industry Partnerships | **Goals Achieved, but will remain ongoing**
Refer to the Table in this document listing Industry Partners and their relationship with the Diesel Program. |

| Conduct Diesel advisory committee meetings | **Goal Achieved, but will remain ongoing**
Conduct Diesel Technology Advisory meetings. |

| Active participation in Workforce Council. | **Goal Achieved, but will remain ongoing** |

| Gain addition Space for Program Growth | **Not Achieved**
Because of budget cuts and the lack of available space, the Diesel Program will not be able to expand offerings in the near future. Lab space was lost, which required changes to be made to the course content of Diesel 009 and Diesel 050 courses, not approved by the advisory committee members. |
### Industry Partners with Relationship Described:

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<th>Company</th>
<th>Role</th>
<th>Donations</th>
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| **Cummins Cal Pacific**        | Advisory member                     | - Training materials.  
|                                | Donations                           | - Instructional units.                                                   |
| **Westrux International Trucks** | Advisory committee member.        | - Provides student access to factory training site.                      |
|                                | Donations                           | - Training materials.  
|                                |                                     | - Instructional units.                                                   |
| **Mack/Volvo Trucks**          | Advisory committee member.          | - Instructional materials.                                               |
|                                | Donations                           | - Instructional units.                                                   |
| **Thermo King of So. Cal.**    | Advisory committee member.          | - Instructional materials.                                               |
|                                | Donations                           | - Instructional units.                                                   |
| **Carrier Transicold of So. Cal.** | Advisory member                   | - Instructional materials.                                               |
|                                | Donations                           | - Instructional units.                                                   |
| **Rush Truck Center**          | Advisory member                     | - Instructional materials.                                               |
| (Peterbilt Trucks)             | Donations                           | - Instructional units.                                                   |
| **Ryder Truck Leasing**        | Advisory member                     | - Donations of instructional units and materials                         |
|                                | Donations                           |                                                                           |
| **Penske Truck Rental**        | Advisory committee member.          | - Instructional materials and instructional aides                         |
|                                | Donations                           |                                                                           |

### 3. Do goals need to be restructured, eliminated or pursued with different activities?

A majority of the goals of the Diesel Program have been achieved. Primarily due to budget constraints some goals will have to be eliminated, restricted, or postponed. A prime example is the need for additional space for program offering expansion. Do to budget cuts ALL classes taught by part-time instructors have been eliminated. This has made it difficult for the students to complete the required course work required for the certificate.

### 4. What are the proposed goals for next year?

**Proposed Goals for the 2012-2013 academic year include the following:**

A. Continue to purchase up-to-date technology with ARB settlement funds to keep the program current with industry needs.

B. Establish an apprenticeship program with Westrux International truck sales and service.
II. Student and Program Success

5. What are the strengths of the program?

Program Strengths:
The strengths of the program include the faculty dedication to grow and modify the Diesel Program to meet the needs for student success in industry. Students are prepared for a career in the Diesel/Transportation field, employed at dealerships, fleet shops and independent shops. The need for life-long learning, environmental concern, and safety awareness are continually stressed.

Close ties with industry partners and local instructors have increased the strength of the program. Donations of multiple vehicles, engines, components, and service information have helped the program stay current with the transportation industry. The SAC Diesel Program faculty are members of advisory committees at local High schools and ROPs. Strong ties with other diesel instructors help build program awareness and mutual improvement.

The Diesel Program has one full time faculty member, who is also a member of CCDET, and The Technology and Maintenance Council of the American Trucking Association. The diesel instructor is USEPA 608 certified and an USEPA 608 certified test proctor.

Student Success:
The success of the program can be judged by the success of the students.

The following are a few examples of student success in regard to the Diesel Technology Program:
The program has an 83% program completion rate, and 100% of the students that complete the program are employed in the industry.

Examples of former students’ success in the Diesel/Transportation industry are:
Manager of maintenance, Orange County Fire Authority
District Service Manager, Southern California Edison
Maintenance Manager, Fullerton School District
Service Manager, Carrier Transicold of southern California
Service Manager, Rush Peterbilt Pac Lease division Pico Rivera, CA
Maintenance Manager of Transportation, City of Santa Ana
Service Manager, Penske Truck Leasing Fontana and Montebello, CA
Service Manager, Ryder Truck Rental Los Angeles Branch, CA
Technicians, Southern California Edison
Technicians, Vons Grocery Company
Technicians, Albertsons Grocery Company
Technicians, Ryder Truck Rental
Technicians, Penske Truck Leasing
Technicians, Anaheim Union High School District
Technicians, Fullerton School District
Technicians, Garden Grove School District
Technicians, City of Santa Ana, Garden Grove, Fullerton, Anaheim, Irvine
What improvements does it need?

A. Ability to offer classes that have been put on hold because of budget cut backs.
B. More shop/lab space to improve student hands on learning.

6. What are faculty’s perceptions of the success of the program?

Overall, the Diesel Program faculty and Advisory Committee members feel that the program is successful, however, faculty and committee members are in agreement that:
A. Courses need to be continually reviewed and modified to meet the needs of industry.
B. Equipment and information must be kept current for the student to succeed in industry.
C. Maintaining certifications are critical for program success.
D. Student and business surveys help develop a better view into student needs.
E. Advisory committee members and industry partners are a critical segment of program success.
F. Faculty and students alike are building a greater sense of pride and satisfaction with the program.

Student Demographics
Based on data from RSCCD Research 2006-2011 report, during the fall 2011 semester, of ??? students registered in coursework, the following demographics were indicated:

<table>
<thead>
<tr>
<th>Ethnicity of Students</th>
<th>Age of Students</th>
<th>Gender of Students</th>
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<tbody>
<tr>
<td>Latino</td>
<td>59%</td>
<td>40+</td>
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<tr>
<td>White</td>
<td>21%</td>
<td>30-39</td>
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<tr>
<td>Decline to state</td>
<td>9%</td>
<td>26-29</td>
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<tr>
<td>Asian</td>
<td>3%</td>
<td>22-25</td>
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<tr>
<td>African American</td>
<td>3%</td>
<td>Under 20</td>
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<tr>
<td>Other</td>
<td>3%</td>
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7. What are opinions of students regarding the program’s quality?
   Upon what variables is based?

   Student opinions are that the quality of the program is excellent and the career opportunities are many.

8. What, if appropriate, are employer attitudes towards the program?

   The students have been very well received by numerous employers. Typically these employers continue to hire SAC Diesel Program students. Examples include Ryder Truck Rental who has hired a number of students over the years. Another example is Fullerton School District. All of the technicians in that shop including the shop manager were SAC students. They have continued to support the program by being advisor committee members.
9. What successes may be identified?

Program successes:
A. CCDET School
   The Diesel Program is one of five community colleges in the state authorize to train technicians in California Air Resources Board Clean Air Requirements for the Transportation Industry.

B. TMC (Technology and Maintenance Council of the American Trucking Association) Membership
   As a TMC member the Diesel Program has input on maintenance practices used by the transportation industry

C. Course curriculum approved by:
   Cummins Engine Company
   Navistar/International Truck Company
   Thermo King Corporation
   Carrier Transicold Corporation

D. While budget cuts have drastically altered course rotation and schedules, FTES has stayed steady over the past two years. FTES was about 48 to 52.

E. Strong and consistent enrollment. Diesel classes typically fully enrolled with most having waiting lists.

F. ARB/CCDET settlement funds for program improvements. Over $300,000. Has been distributed to the Diesel Technology Program in the last 4 years. These monies have purchased many state-of-the-art instructional units, keeping the Diesel Program current with industry changes in technology.

III. Curriculum, Pedagogy and Innovation

10. Describe the curriculum offerings, their relationship to the discipline, and substantive curriculum changes, e.g., new courses, deletions. How has the program kept up with changing needs of the students and community?

Curriculum continues to be modified to meet the needs of students and industry. The need for changes is monitored through several means. Possible needs are discussed within the Diesel Department and then presented to the Advisory Committee for review.

Diesel Program Course Offerings

Diesel 008
Oxyacetylene-Arc Welding
Unit(s): 3
Class Hours: 16 Lecture, 96 Laboratory total.
Technical knowledge and basic skills needed for occupational oxyacetylene and arc welding processes and applications. Students must furnish safety equipment. (Same as Automotive Technology 008 and Welding 008.)

Diesel 009
Chassis Overhaul
Unit(s): 8
Class Hours: 64 Lecture, 192 Laboratory total.
Inspection, service and overhaul procedures used on medium and heavy duty axles, steering and suspension components, clutches, transmissions, drivelines, differentials and air brake systems.
Diesel 010
Bendix Air Brake System Service
Unit(s): 1.5
Class Hours: 24 Lecture total.
Theory of operation of Bendix Medium and Heavy-Duty On-Highway Vehicle Air Brake Systems. Service, repair, and troubleshooting procedures used by the industry will be covered.

Diesel 013
Allison Transmission Service
Unit(s): 5
Class Hours: 64 Lecture, 64 Laboratory total.
A course of study designed to familiarize the student with the operation, service, overhaul, and troubleshooting procedures of Allison transmissions. Students must furnish hand tools and safety equipment. May be repeated.

Diesel 015
Introduction to Heavy Duty Mobile Hydraulics
Unit(s): 4
Class Hours: 64 Lecture, 64 Laboratory total.
This course presents operation and service procedures for hydraulic devices found on heavy duty diesel equipment and trucks. Students must furnish tools and own safety equipment.

Diesel 021
Mid-Range Diesel Engine Service
Unit(s): 4.5
Class Hours: 48 Lecture, 80 Laboratory total.
Troubleshooting and service and repair techniques for medium-duty diesel and CNG fuel engines and fuel systems. Students must furnish own safety equipment.

Diesel 022
Electronics Fundamentals
Unit(s): 5
Class Hours: 64 Lecture, 64 Laboratory total.
Introduction to the basic operating principles of electrical and electronic devices used in motor vehicles. Suggested preparation: Automotive Technology 002 or 006. (Same as Automotive Technology 022.)

Diesel 024
Electrical Systems
Unit(s): 4
Class Hours: 32 Lecture, 96 Laboratory total.

Diesel 025
Diesel and Heavy Duty Vehicle Engine Overhaul
Unit(s): 8
Class Hours: 64 Lecture, 192 Laboratory total.
Overhaul and repair of heavy duty diesel engines. Designed to acquaint the student with the theory of operation, trouble diagnosis, service and repair of two and four-cycle heavy duty diesel engines.
Diesel 032
Diesel Fuel Injection Systems Service
Unit(s): 5
Class Hours: 48 Lecture, 96 Laboratory total.
Theory, testing, and service of mechanical and electronic diesel fuel injection systems. Engine tune-up and troubleshooting techniques on current production heavy duty diesel engines. Students must furnish safety equipment and protective clothing.

Diesel 040
Diesel Electrical Systems
Unit(s): 5
Class Hours: 48 Lecture, 96 Laboratory total.
Diagnosis, service, and repair procedures for starting, charging, lighting, and instrument systems. Students furnish safety equipment and protective clothing.

Diesel 050
Transport Refrigeration
Unit(s): 8
Class Hours: 96 Lecture, 96 Laboratory total.
Theory and operation of truck, trailer, and container single and multi-temperature refrigeration, electrical and microprocessor control systems used on current production Carrier and Thermo King units. Service, repair, and troubleshooting procedures used by the industry will be covered.

Diesel 055
Marine Container Refrigeration
Unit(s): 4
Class Hours: 64 Lecture, 64 Laboratory total.
Theory of operation of refrigeration, electrical, electronic and microprocessor controller systems used by Thermo King and Carrier on current production marine container refrigeration units. Service, repair, and troubleshooting procedures used by the industry will be covered. May be repeated.

Diesel 062
Air Conditioning and Heating
Unit(s): 3
Class Hours: 36 Lecture, 60 Laboratory total.
Operation, testing, and servicing of air conditioning and heating systems. Students must furnish hand tools and safety equipment. Suggested preparation: Automotive Technology 002 or 006. (Same as Automotive Technology 062.)

Diesel 095
Diesel Lab Experience
Unit(s): 0.5 - 4
Class Hours: 192 Laboratory total.
Prerequisite: Completion of corresponding Diesel course with a grade of C or better. This diesel lab course is designed to give the diesel student lab experience in a diesel course previously completed with a grade of C or better. The student must be enrolled by the instructor. Students must furnish hand tools and safety equipment. May be repeated to a maximum of 4 units. (Same as Automotive Technology 095.) Grade: Pass/No Pass Only. Open Entry/Open Exit.
Examples of modifications include:
   A. The addition of LNG and CNG Safety training. This need was requested by advisory members.

Requirements for:
**Diesel and Heavy Equipment Technology**
**Degree (sac.dsl.as) and Certificate (sac.dsl.ca)**
The associate degree and certificate curriculum in diesel and heavy equipment is designed to successfully prepare students to enter the medium and heavy duty transportation industry as an apprentice or helper diesel mechanic or provide supplementary knowledge for equipment operators and truck drivers. The program provides lecture and lab activities related towards heavy-duty diesel engines, power train units, steering and suspension components, brakes, electrical and fuel systems, as well as developing oxyacetylene and arc welding skills. Those working in the industry will be able to improve their competencies in each subject area. Employment opportunities exist for trained men and women in a rapidly expanding field. Major requirements for the associate degree and certificate:

**Course Units**
- Diesel 008, Oxyacetylene-Arc Welding 3
- Diesel 009, Chassis Overhaul 8
- Diesel 021, Mid-Range Diesel Engine Service 4.5
- Diesel 025, Diesel & Heavy Duty Diesel Engine Overhaul 8
- Diesel 032, Diesel Fuel Injection Systems Service 5
- Diesel 040, Diesel Electrical Systems 5
- Electives 3
**Total 36.5**
Electives: Business 170; Diesel 003, 010, 013, 015, 022, 024, 050, 055, 062, 068, 069, 070, 071, 072, 073, 075, 076, 077, 078, 079, 080, 095; English *N60; Manufacturing Technology 188; Mathematics *N05, 053; Reading *N90AB; Speech Communication 101 or 101H. *Courses which have an "N" preceding the number may be required for the major, but are not applicable to the 60 units required for the degree.

**Mid-Range Engine Service Option Degree**
(sac.dslmr.as) and Certificate (sac.dslmr.ca)
The associate degree and certificate curriculum in mid-range diesel engine service is designed to prepare students with knowledge and skills applicable to light to medium-duty diesel engines mass-produced in the trucking industry. Experience will be acquired in domestic and foreign versions of these engines. Students currently in the trade working on medium-duty gasoline engines or new students entering in the trade will benefit from this training. Major requirements for the associate degree and certificate:

**Course Units**
- Automotive Technology 072, General Automotive Engine Service
  — OR —
- Diesel 025, Diesel & Heavy Duty Diesel Engine Overhaul 8
- Diesel 008, Oxyacetylene-Arc Welding 3
- Diesel 021, Mid-Range Diesel Engine Service 4.5
- Diesel 040, Diesel Electrical Systems 5
- Electives 3
**Total 23.5**
Electives: Business 170; Diesel 022, 024, 076, 095; English *N60; Mathematics *N05, 053; Manufacturing Technology 188; Reading *N90AB;
Transport Refrigeration/Temperature Control
Option Certificate (sac.dsltr.cert)
The certificate curriculum in transport refrigeration is designed to prepare students to enter the field as an apprentice or helper service technician. The factory approved course work provides training in the service, repair and troubleshooting techniques of Carrier Transicold and Thermo King truck and trailer refrigeration units. The course work is made up of lecture and lab performances on current production units, covering the refrigeration and electrical systems used to control the units operation to maintain desired product temperature to protect the consumer’s health. Employment opportunities for men and women exist in this rapidly expanding field.

Major requirements for the certificate:

**Course Units**
- Diesel 021, Mid-Range Diesel Engine Service 4.5
- Diesel 032, Diesel Fuel Injection Systems Service 5
- Diesel 040, Diesel Electrical Systems 5
- Diesel 050, Transport Refrigeration 8
**Total** 22.5

Recommended electives: 051, 052, 055.

11. **Describe the program’s relationship to student services and its offerings to the students served.**

The SAC Diesel Program strives to help student where ever possible. Many students can be helped by making use of the many student services available. Examples include:

- **EOPS:** Help for students with low or no income.
- **Disabled Student Services:** Assistance and evaluation is made available for special needs students. Also have supplied advice of equipment such as computer work stations that would have easier handicap access.
- **Library:** Maintains copies of automotive text for student checkout. Maintains current automotive magazines. Supplies automotive repair data base for student use.
- **Career Center:** Conducts seminars on interview skills and resume writing. Forwards employment requests.
- **Community Services:** Enrolls students and technicians for smog update courses. Oversees transit bus update courses.
- **Counseling:** Helps students develop educational plans. Assists students in planning for a degree or certificate. Helps student become aware of other options and student services. A CTE counselor is now available to assist students in our area.

12. **Describe the use of technology, e.g., computer labs, increased use of Blackboard, hybrid or online courses, etc. How does the use of these tools enhance learning?**

The Diesel Program is very technology intensive. All segments of the program have integrated high levels of technology into daily instructor and student use. Most courses are comprised of lecture and lab components, or at least lecture and lab demonstration components.

The Lecture segment of automotive instruction includes:
- Mediated classrooms with full multi-media capability including overhead computer projectors.
- Lectures are typically based upon textbook chapters which have image intense PowerPoint presentations. Students can also access these presentations through a textbook CD or online.
- The Diesel on-line information systems can be access in the classroom for use during training of diagnostic procedures or component testing.
- Interactive close captioned factory level videos are used also as another segment of lecture.
- Blackboard is used in the Automotive Program for enhanced student contact. These technology tools enhance learning by making the lecture segment of the course more interactive and vibrant. Modern students seem to thrive on technology and computer based presentations. Images and procedures can be bought into the lecture that would be impossible with chalk and an obsolete green board.

The Lab segment of Diesel instruction includes:
A. Daily use by students of PC based on-line diesel information systems.
B. Frequent use of PC based Diesel training software and simulation, SAC diesel students can login to Navistar factory dealership training, at no cost.
C. Daily use of current engine training modules and live trucks.
D. Students are required to complete various lab sheets during the lab phase of the course.

13. **What changes have been made in pedagogy?**

During this review cycle many changes have been made in the Diesel Program.
A. After discussions and review with the advisory committee, many program instructional training aides were updated to current technology. Purchased 2010 emission certified diesel engines, CNG fuel mid-range engine module and the latest truck and trailer refrigeration units.

B. SAC Diesel students now have the ability to login on the Navistar Educational Portal and have full access to all the training programs.

14. **What grants has the program been involved with? How has this changed the program?**

No grants have been applied for during this term, CCDET and ARB settlement monies have allowed the program to stay current with industry needs.

IV. **Assessment of Conclusions and Recommendations**

15. **What research has the department conducted?**

Research on the typical items such as demographics, completion rates and number of certificates have been conducted.

16. **What resources has the department explored to ascertain the status of the discipline/program in other arenas?**

A. The Diesel Programs participation with CCDET and CARB has required many visits to schools, industry partners. These visits are used to compare and contrast their respective programs with SAC’s program.
C. The program instructor attends update training and conferences at other colleges or factory training sites. Status of the SAC Diesel program can typically be determined.
D. The Diesel Advisory Committee is comprised of members from high schools, ROPs, dealerships, other colleges, etc. Their experiences and expertise is used to advise on modifications for the improvement of the SAC Diesel program.

17. **Please summarize findings of direct SLO assessment. How has this informed future plans for the program?**

Upon review of SLO assessment, the following findings were made:
SLO’s could be modified to better represent the desired outcome.
SLO’s should continue to be assessed and reviewed.
Objectives of assignments should be stated more clearly.
Revise certain activities that leading up to and/or support assignments/activities.
Increase discussion and activities to promote better understanding of subject matter.
Increase the use of teams to enhance student learning.
18. **What changes are recommended for the program?**

The primarily changes and modifications for the Diesel Program. These changes include:

A. Additional lab space is required to meet the training needs of the students.
B. Offer the courses taught by part-time instructors so the students can complete their education.

19. **What issues have emerged that require interdisciplinary dialogue and possible inclusion in overall college planning?**

The expansion of the Diesel Program would require additional space. Long range college plans indicate a larger Diesel/Transportation instruction area will be constructed beneath a new parking structure. These plans have been included in the future oval college planning.