Internal Program Review
Self-Study Report

Program Name
Diesel Technology

Credentials Offered
Certificate of Applied Science in Diesel Technology: 42 credits
Associate of Applied Science in Diesel Technology: 72 semester credits

Self-Study Completed by:
Rick Purcell, Faculty
Derrick Hauer, Faculty
Tammy Burke, Trades Division Chair

Date Completed:
2019-2020
A. Introduction –
The Diesel Technology program prepares students to enter various segments of the diesel repair industry as an entry-level technician. This includes, but is not limited to, the agricultural, the industrial equipment, and the heavy-duty diesel truck repair industry. This program provides comprehensive training in maintenance, diagnosis, and repair of related electrical/electronic systems, mobile hydraulic systems, manual and hydraulic drive trains, brakes, air systems, diesel engines, general maintenance, alignment and undercarriages, HVAC, and transport refrigeration systems as used in equipment common to the diesel repair industry.

Potential employers include agriculture and truck dealerships, truck fleets, mining companies, construction companies, oil companies, farms and ranches, and independent truck repair shops.

B. Alignment with Mission, Strategic Goals and Core Themes –
Helena College Mission Statement- Helena College, a comprehensive two-year college, provides access to and support of high quality lifelong educational opportunities for our diverse community.

Program Mission Alignment- The Diesel Technology program prepares students to enter various segments of the diesel repair industry as an entry-level technician. This includes, but is not limited to agricultural, industrial equipment and the heavy-duty diesel truck repair industry. This program provides comprehensive training in maintenance, diagnosis, and repair of related electrical/electronic systems, mobile hydraulic systems, manual and hydraulic drive trains, brakes, air systems, diesel engines, general maintenance, alignment and undercarriages, HVAC, and transport refrigeration systems as used in equipment common to the diesel repair industry. After graduating, you will be well prepared for a career as a diesel technician.

The strategic goals of Helena College are listed below:
Strategic goal #1 – promote student success and achievement
Strategic goal #2 – advance academic excellence and scholarship
Strategic goal #3 – build community engagement and partnerships
Strategic goal #4 – model and foster equity, inclusion, and cultural competency
Strategic goal #5 – ensure institutional integrity

The Goals of the Diesel Technology Program align with the above as follows:
1. Partner for Student Success Integrate Assessment/Planning
2. Attain Excellence
3. Support the Community
4. Advance the Institution
5. Develop Resources

By continually updating equipment and curriculum as advised by the Diesel Technology Advisory Board, it is the goal of the program to be relevant and provide students with the best
experience possible. The program is now being offered. This program has had consistent enrollment and completion and continues to be successful.

C. Alignment with Community Needs (Academic Programs Only) –
The Diesel technology program has an advisory board which meets twice a year. The board consists of local employers as well as general managers from major truck manufactures. These individuals are: Dave Broughton, Tri-State Truck & Equipment, Great Falls MT. Travis Sandau, I-State Truck Center, Missoula MT. Bob Moe, Titan Machinery, Inc, West Fargo ND. Dave Garner, Mergenthaler Transfer & Storage, Helena MT. Jim Dusenberry, J&D Truck Repair, Helena MT. This board helps guide curriculum in ways such as adding a new electronics class to better prepare students for current technology. This included advice on what would be taught as well as equipment requirements. Equipment was requested through the budget process and has been implemented. The addition of a safety class to include OSHA 10 was added. We also added a particular transmission type that would fit the needs of industry, which was also acquired through the budget process and with Perkins Grand funding. These are only some recent changes. In the effort to maintain continuous quality improvement we feel every year there should be changes made as needed to meet the ever-changing industry in which we are placing students.

D. Student Participation and Success-
This program has maintained consistent enrollment numbers with retention and completion above national standards. Students in this program have excellent placement in the workforce and there is very positive feedback from the advisory board that students leave the program prepared for industry. Please see data in appendix.

E. Student Learning Outcomes and/or Program Goals –
Upon successful completion of this program, a student will be able to:
1) Demonstrate the ability to safely work in a shop environment
2) Demonstrate their work ethic and professionalism
3) Demonstrate their understanding of diesel systems operation and function of components
4) Demonstrate the ability to properly diagnose the system and perform the proper repairs
5) Demonstrate their ability to work in a live shop environment by interacting with customers, diagnosing and repairing a multitude of failures, working well with other students and properly completing work orders.

F. Curriculum and Instruction (Academic Programs Only) –
Based on recommendations from our advisory board and due to suggested curriculum guidelines associated the Diesel program made changes in equipment, technology, and curriculum to update and improve the program. As indicated in the degree planning sheet the program is a comprehensive two-year Diesel program.
G. Faculty/Staff Profile –
Helena College UM employs two full-time diesel technology instructors.

Purcell, Rick
Diesel Technology
A.O.S., Universal Technical Institute
at Helena College since fall 2008

Hauer, Derrick
Diesel Technology
A.A.S., Helena College
at Helena College since Fall 2014

H. Fiscal and Physical Resources-
Helena College supports and provides adequate funding of the diesel technology program and this has been stable over the past five years. Perkins Grant funding is also utilized to update equipment and provide professional development for faculty. Infusions of budgetary support for Diesel Technology Program occurred when equipment maintenance and repair and purchase of new equipment was required.

I. Recommendations and Preliminary Implementation Plan -
1. Using industry standards and advisory committee input, Helena College will update curriculum, equipment, and skill development to include development of Commercial Driver’s License as part of, or prerequisite to the program.
2. Helena College will continue to integrate student acquisition of industry-recognized credentials into the curriculum.
3. Increase instructor professional development through attendance at national educators’ conferences and institutes.
4. Build career awareness by collaborating with industry partners, secondary schools and US Department of Labor Job Service.
5. Explore apprenticeship/internship opportunities for students to increased work-based learning experiences.

J. Program Review Data Summary –
Please see attached data summary

K. Appendix (Additional data or exhibits)

Appendix A- Data Summary Tables

Diesel Technology 2013-2018
Program Review Data Summary
Fiscal and Physical Resources
Data Definition: Instructional costs include program-personnel and operating expenses

<table>
<thead>
<tr>
<th></th>
<th>FY14</th>
<th>FY15</th>
<th>FY16</th>
<th>FY17</th>
<th>FY18</th>
<th>5 Year Ave</th>
<th>Program Notes</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Program Expenditure/FTE PI</td>
<td>$3,657</td>
<td>$4,419</td>
<td>$5,097</td>
<td>$6,133</td>
<td>$6,123</td>
<td>$5,173</td>
<td></td>
<td>Institutional Research/Finance</td>
</tr>
<tr>
<td>B. Average NC Program Expenditure/FTE</td>
<td>$5,032</td>
<td>$4,885</td>
<td>$5,254</td>
<td>$6,512</td>
<td>$6,252</td>
<td>$6,006</td>
<td></td>
<td>Institutional Research/Finance</td>
</tr>
<tr>
<td>C. Program Expenditure/Completion</td>
<td>$12,189</td>
<td>$15,634</td>
<td>$15,202</td>
<td>$14,516</td>
<td>$20,070</td>
<td>$15,518</td>
<td></td>
<td>Institutional Research/Finance</td>
</tr>
<tr>
<td>D. Average NC Program Expenditure/Completion</td>
<td>$13,012</td>
<td>$18,377</td>
<td>$12,712</td>
<td>$16,006</td>
<td>$23,599</td>
<td>$14,101</td>
<td></td>
<td>Institutional Research/Finance</td>
</tr>
<tr>
<td>F. Student Program Fees-Fund Expenditures</td>
<td>$8,910</td>
<td>$0</td>
<td>$183</td>
<td>$0</td>
<td>$7,176</td>
<td>$3,054</td>
<td>H60280</td>
<td>Institutional Research/Finance</td>
</tr>
<tr>
<td>G. Total Program Expense</td>
<td>$182,841</td>
<td>$234,208</td>
<td>$197,630</td>
<td>$217,733</td>
<td>$180,634</td>
<td>$202,609</td>
<td></td>
<td>Personnel+Operating</td>
</tr>
<tr>
<td>H. Total Program Revenue</td>
<td>$394,110</td>
<td>$440,324</td>
<td>$544,025</td>
<td>$299,943</td>
<td>$391,600</td>
<td>$396,000</td>
<td></td>
<td>State Appropriation</td>
</tr>
<tr>
<td>I. Program Revenue/FTE</td>
<td>$7,882</td>
<td>$8,308</td>
<td>$10,967</td>
<td>$9,229</td>
<td>$9,280</td>
<td>$8,798</td>
<td></td>
<td>Total Revenue/FTE</td>
</tr>
</tbody>
</table>

Key Performance Indicator or Performance Indicator for Program Effectiveness under Strategic Enrollment Planning/Management
## Diesel Technology 2013-2018

### Program Review Data Summary

#### Student Participation and Success

**Data Definition:**

|          | AY1314 | AY1415 | AY1516 | AY1617 | AY1718 | 5 Year Ave | Program Notes | Source          |
|----------|--------|--------|--------|--------|--------|------------|---------------|----------------|----------------|
| A. Transfer rates to 4-year colleges (AA/AS) | N/A    | N/A    | N/A    | N/A    | N/A    | N/A        | N/A            | Institutional Research |
| B. Program Capacity (Headcount)              | 40     | 40     | 40     | 40     | 40     | 40         | N/A            | Institutional Research |
| C. Annual Headcount Enrollment (Unduplicated)| 50     | 56     | 41     | 34     | 32     | 33         | 41             | Institutional Research |
| D. Annual FTE Enrollment PI                  | 50     | 53     | 39     | 33     | 30     | 34         | 41             | Institutional Research |
| E. Annual Program Capacity                   | 125%   | 140%   | 103%   | 85%    | 80%    | 107%       | N/A            | Institutional Research |
| F. Fall to Fall Retention Rates (Full-time students) PI | 67%    | 70%    | 92%    | 64%    | 82%    | 75%        | Fall 2013-2017 Cohorts | Institutional Research |
| G. Fall to Fall Retention Rates (Part-time students) PI | N/A    | N/A    | 0%     | N/A    | 0%     | 0%         | Fall 2013-2017 Cohorts | Institutional Research |
| H. Program Course Completion Rate (C- or better) | 100%   | 93%    | 90%    | 91%    | 97%    | 94%        | Fall-Spring Semester/2 | Institutional Research |
| I. 150% Time Graduation Rate (Full-time students) | 70%    | 92%    | 53%    | 50%    | 77%    | 68%        | Fall 2011-2015 Cohorts | Institutional Research |
| J. 150% Time Graduation Rate (Part-time students) | 0      | 67%    | N/A    | N/A    | 0      | 22%        | Fall 2011-2015 Cohorts | Institutional Research |
| K. Annual Degree & Certificate Completions   | 15     | 15     | 13     | 13     | 9      | 13         | N/A            | Institutional Research |
| L. Degree Production Rates – proportion of degrees/certificates granted per 100 FTE PI | 30     | 28     | 33     | 46     | 31     | 34         | N/A            | Institutional Research |
| M. Pass Rates on Occupation/industry Specific Licensing or Certification Exams (as applicable) PI | Denotes Items that are Core Theme Indicators for Helena College |

**Key Performance Indicator or Performance Indicator for Program Quality and/or Effectiveness under Strategic Enrollment Planning/Management**

### Student Participation and Success 2013-2018

![Graph showing student participation and success metrics](image-url)
## Diesel Technology 2013-2018

**Program Review Data Summary**

### Alignment with Community Needs (CTE Only)

<table>
<thead>
<tr>
<th>Data Definition</th>
<th>Current MT</th>
<th>Projected MT</th>
<th>Current U.S.</th>
<th>Projected U.S.</th>
<th>Program Notes</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>D. Provide 5 years of job placement rates for all program graduates</td>
<td>73%</td>
<td>93%</td>
<td>100%</td>
<td>77%</td>
<td>93%</td>
<td>87%</td>
</tr>
<tr>
<td>E. For applied programs with program admission provide five years of students accepted totals</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Note:** Items that are Core Theme Indicators for Helena College

KPI or PI: Key Performance Indicator or Performance Indicator for Program Effectiveness under Strategic Enrollment Planning/Management