



**Cycle:** 2018-2021

**ASSOCIATES IN APPLIED SCIENCE WITH A MAJOR IN DIESEL TECHNOLOGY - CATERPILLAR**

**Program Mission Statement:**

The Caterpillar Dealer Academy, a partnership between local Caterpillar dealers and Florence-Darlington Technical College, builds the foundation for technicians to service Caterpillar equipment with excellence and professionalism.

**Division:** Technical and General Education

**AVP:** Dan Averette

**Department Chair:** Stephen Murphey

**Director:** Stephen Murphey

**SACSCOC Standard:** 8.2A

**Accrediting Agency:**  Yes  No

**Name:** N/A

**Certification Exam(s):**  Yes  No

**Agency Name:** N/A

**Credential:** N/A

Program Student Learning Outcome	Monitoring Year
Participate in safe work practices at a dealership.	2018-19
Practice professionalism in the workplace.	2018-19
Apply knowledge of engine systems to repair related problems.	2020-21
Demonstrate repair of electrical/electronic machine systems.	2019-20
Apply hydraulic fundamentals to repair machine systems.	2018-19
Service mobile air conditioning systems.	2020-21
Identify, breakdown, assess, repair powertrain and machine system faults at the root cause.	2020-21

## STUDENT LEARNING OUTCOMES FOR AAS.DHM – 2018-2019

A. Program Student Learning Outcomes	B. What courses are PSLOs Assessed	C. Methods for Outcomes Assessment	D. Expected Level of Program Performance	E. Data Collection	F. Results		G. Plan For Improvement																
What should the graduates of your program be able to do?	Where do you see evidence that the student can do these things?	How does your program evaluate student/graduate skills/abilities?	What is the expected level of student performance <u>for the program</u> ?	When will you collect the data needed to evaluate the performance of the program?	What are the results of the evaluation? <b>NOTE: include student ratio with all results.</b>		How will you use this information to improve the program																
Participate in safe work practices at a dealership.	CWE 214	Final Review	70% of students will pass the assessment at a 70% or higher.	Fall 2018	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">Benchmark</td> <td style="text-align: center;">70%&gt;70%</td> </tr> <tr> <td>Actual Percentage</td> <td style="text-align: center;">100</td> </tr> <tr> <td>Achieved?</td> <td style="text-align: center; background-color: #d4edda;">Exceed</td> </tr> <tr> <td>Number of attempts</td> <td style="text-align: center;">23</td> </tr> <tr> <td>Number Passing</td> <td style="text-align: center;">23</td> </tr> <tr> <td>High</td> <td style="text-align: center;">100</td> </tr> <tr> <td>Low</td> <td style="text-align: center;">89</td> </tr> <tr> <td>Average</td> <td style="text-align: center;">95.61</td> </tr> </table>		Benchmark	70%>70%	Actual Percentage	100	Achieved?	Exceed	Number of attempts	23	Number Passing	23	High	100	Low	89	Average	95.61	The expected level of learning was met at a very high level. Will continue monitoring this objective and keep in contact with mentors and supervisors at internship locations. Faculty will meet to discuss raising the benchmarks.
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Practice professionalism in the workplace.	CWE 224	Final Review	70% of students will pass the assessment at a 70% or higher.	Spring 2019	<table border="1"> <tr> <td>Benchmark</td> <td>70%&gt;70%</td> </tr> <tr> <td>Actual Percentage</td> <td>100</td> </tr> <tr> <td>Achieved?</td> <td>Exceed</td> </tr> <tr> <td>Number of attempts</td> <td>23</td> </tr> <tr> <td>Number Passing</td> <td>23</td> </tr> <tr> <td>High</td> <td>100</td> </tr> <tr> <td>Low</td> <td>95</td> </tr> <tr> <td>Average</td> <td>96.09</td> </tr> </table>	Benchmark	70%>70%	Actual Percentage	100	Achieved?	Exceed	Number of attempts	23	Number Passing	23	High	100	Low	95	Average	96.09	The expected level of learning was met at a very high level. Will continue monitoring this objective and keep in contact with mentors and supervisors at internship locations. Faculty will meet to discuss raising the benchmarks.
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Low	95																					
Average	96.09																					
Apply hydraulic fundamentals to repair machine systems.	DHM 265 – Hydraulic Systems	Final Exam	70% of students will pass the assessment at a 70% or higher.	Spring 2019	<table border="1"> <tr> <td>Benchmark</td> <td>70%&gt;70%</td> </tr> <tr> <td>Actual Percentage</td> <td>75</td> </tr> <tr> <td>Achieved?</td> <td>Exceed</td> </tr> <tr> <td>Number of attempts</td> <td>12</td> </tr> <tr> <td>Number Passing</td> <td>9</td> </tr> <tr> <td>High</td> <td>90.32</td> </tr> <tr> <td>Low</td> <td>0</td> </tr> <tr> <td>Average</td> <td>71.78</td> </tr> </table>	Benchmark	70%>70%	Actual Percentage	75	Achieved?	Exceed	Number of attempts	12	Number Passing	9	High	90.32	Low	0	Average	71.78	The expected level of learning was met. This data includes one student that dropped the class and never attempted the assessment. Actual results would be higher if this situation was factored out of the data. Will review the assessment for common areas that may be improved.
Benchmark	70%>70%																					
Actual Percentage	75																					
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Number of attempts	12																					
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## STUDENT LEARNING OUTCOMES FOR AAS.DHM – 2019-2020

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What should the graduates of your program be able to do?	Where do you see evidence that the student can do these things?	How does your program evaluate student/graduate skills/abilities?	What is the expected level of student performance <u>for the program</u> ?	When will you collect the data needed to evaluate the performance of the program?	What are the results of the evaluation? <b>NOTE: include student ratio with all results.</b>	How will you use this information to improve the program																
Demonstrate repair of electrical/electronic machine systems.	DHM 273 – Electrical Systems II	Final Exam	70% of students will pass the assessment at a 70% or higher.	Fall 2019	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%;">Benchmark</td> <td style="width: 30%;">70%&gt;70%</td> </tr> <tr> <td>Actual Percentage</td> <td style="text-align: center;">95</td> </tr> <tr> <td>Achieved?</td> <td style="text-align: center; background-color: #d4edda;">Exceed</td> </tr> <tr> <td>Number of attempts</td> <td style="text-align: center;">20</td> </tr> <tr> <td>Number Passing</td> <td style="text-align: center;">19</td> </tr> <tr> <td>High</td> <td style="text-align: center;">100</td> </tr> <tr> <td>Low</td> <td style="text-align: center;">69.02</td> </tr> <tr> <td>Average</td> <td style="text-align: center;">88.75</td> </tr> </table>	Benchmark	70%>70%	Actual Percentage	95	Achieved?	Exceed	Number of attempts	20	Number Passing	19	High	100	Low	69.02	Average	88.75	<p>The expected level of learning was met.</p> <p>A new machine to the school was purchased with the help of one of our dealer sponsors. The 322CL excavator will give us another machine trainer to use in the shop for Electrical as well as Engines and Undercarriage.</p>
Benchmark	70%>70%																					
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## STUDENT LEARNING OUTCOMES FOR AAS.DHM – 2020-2021

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Apply knowledge of engine systems to repair related problems.	DHM-268 – Engine Performance	Final Exam	70% of students will pass the assessment at a 70% or higher.	Spring 2021	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">Benchmark</td> <td style="text-align: center;">70%&gt;70%</td> </tr> <tr> <td>Actual Percentage</td> <td style="text-align: center;">87.5</td> </tr> <tr> <td>Achieved?</td> <td style="text-align: center; background-color: #d4edda;">Exceed</td> </tr> <tr> <td>Number of attempts</td> <td style="text-align: center;">16</td> </tr> <tr> <td>Number Passing</td> <td style="text-align: center;">14</td> </tr> <tr> <td>High</td> <td style="text-align: center;">95.45</td> </tr> <tr> <td>Low</td> <td style="text-align: center;">65.91</td> </tr> <tr> <td>Average</td> <td style="text-align: center;">80.54</td> </tr> </table>	Benchmark	70%>70%	Actual Percentage	87.5	Achieved?	Exceed	Number of attempts	16	Number Passing	14	High	95.45	Low	65.91	Average	80.54	<p>The expected level of learning was met.</p> <p>The 322CL mentioned above will also improve the engine performance class as it is equipped with a 3126 HEUI engine.</p>
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Service mobile air conditioning systems.	DHM 231 – Air Conditioning	Final Exam	70% of students will pass the assessment at a 70% or higher.	Summer 2021	<table border="1"> <tr> <td>Benchmark</td> <td>70%&gt;70%</td> </tr> <tr> <td>Actual Percentage</td> <td>100.00</td> </tr> <tr> <td>Achieved?</td> <td>Exceed</td> </tr> <tr> <td>Number of attempts</td> <td>15.00</td> </tr> <tr> <td>Number Passing</td> <td>15.00</td> </tr> <tr> <td>High</td> <td>93.57</td> </tr> <tr> <td>Low</td> <td>70.71</td> </tr> <tr> <td>Average</td> <td>85.83</td> </tr> </table>		Benchmark	70%>70%	Actual Percentage	100.00	Achieved?	Exceed	Number of attempts	15.00	Number Passing	15.00	High	93.57	Low	70.71	Average	85.83	The expected level of learning was met. A new TXV A/C trainer was purchased for this program to help improve overall retention of A/C system operation by our students. This trainer has yielded many successes and demonstrates, in a visual way, the change of states in the A/C system.
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Identify, breakdown, assess, repair powertrain and machine system faults at the root cause.	DHM 267 – Undercarriage/Final Drive	Final Exam	70% of students will pass the assessment at a 70% or higher.	Fall 2020	<table border="1"> <tr> <td>Benchmark</td> <td>70%&gt;70%</td> </tr> <tr> <td>Actual Percentage</td> <td>93.75</td> </tr> <tr> <td>Achieved?</td> <td>Exceed</td> </tr> <tr> <td>Number of attempts</td> <td>16</td> </tr> <tr> <td>Number Passing</td> <td>15</td> </tr> <tr> <td>High</td> <td>100</td> </tr> <tr> <td>Low</td> <td>68.57</td> </tr> <tr> <td>Average</td> <td>89.55</td> </tr> </table>		Benchmark	70%>70%	Actual Percentage	93.75	Achieved?	Exceed	Number of attempts	16	Number Passing	15	High	100	Low	68.57	Average	89.55	The expected level of learning was met.  The addition of the 322CL will also improve our lab capability for this course as it is a good fit for the undercarriage portion of this course.
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## **CONTINUOUS STUDENT IMPROVEMENT**

### **This Cycle's Results and Comparison to Last Cycle's and Recommended Actions:**

**As far as a comparison, that is next to impossible to do. Every aspect of collecting, assembling and reporting learning outcomes have changed multiple times over the last cycle. If actual comparisons are to be made in the future, some aspect of the assessment process need stabilized for a period of time to establish base lines. Institutional data collection also needs to be accurate as it is creating errors throughout the entire process and does not reflect departmental numbers that can be validated for accuracy.**

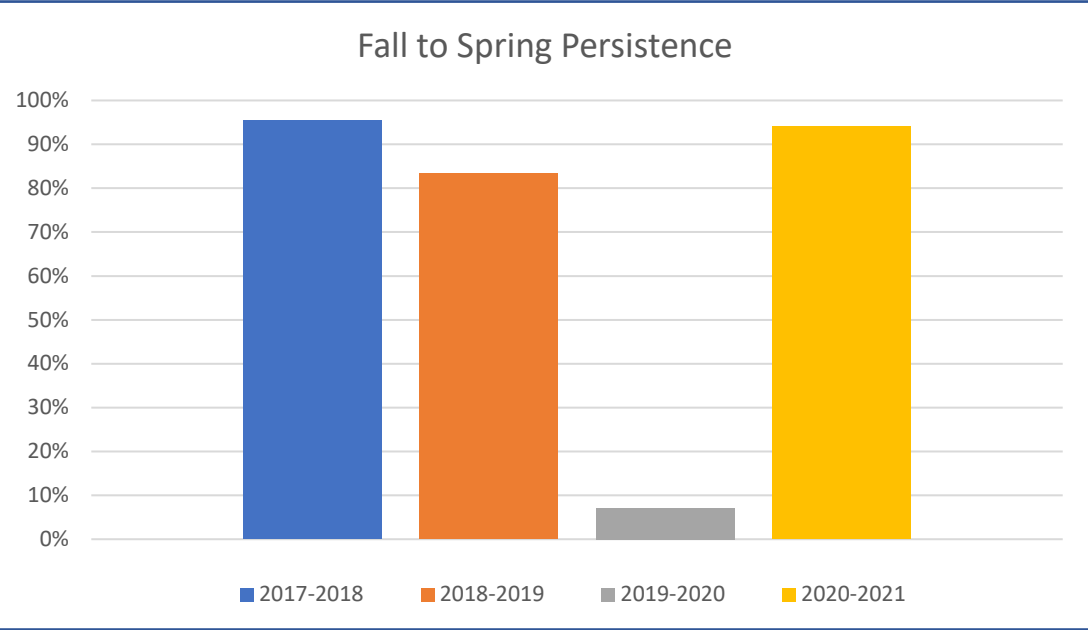
**With respect to program and student outcomes, COVID-19 was had a short-term impact on our long-term program numbers and goals. The growth trajectory and plan in place since 2017 was reduced by administration and the program was shrunk in an attempt to keep the school financially viable. Many of the decisions are beyond anyone's control and are not reflective of program planning or historical data. Student outcomes during this time took a hit with the loss of hands-on time, particularly in courses held over the summer when no one was allowed on campus. However, our students were allowed to work at their internship location and many of the hands-on items we were not able to do at the school was reinforced at the sponsoring dealership.**

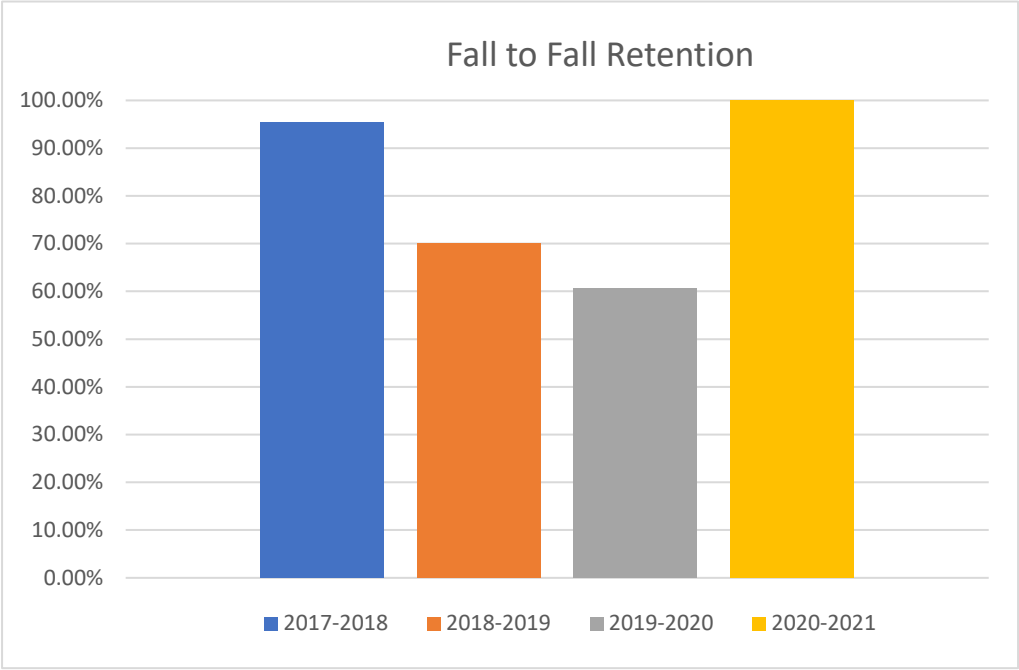
**Current plans for the program are to continue a high-quality program with fewer faculty and student numbers. Caterpillar Inc. is the provider of our curriculum. They are currently in the process of rolling out new text book revisions. The last major update was in 2010. The 2020-2022 versions of the book reflect a significant improvement in the quality of our curriculum and overall experience for our students.**

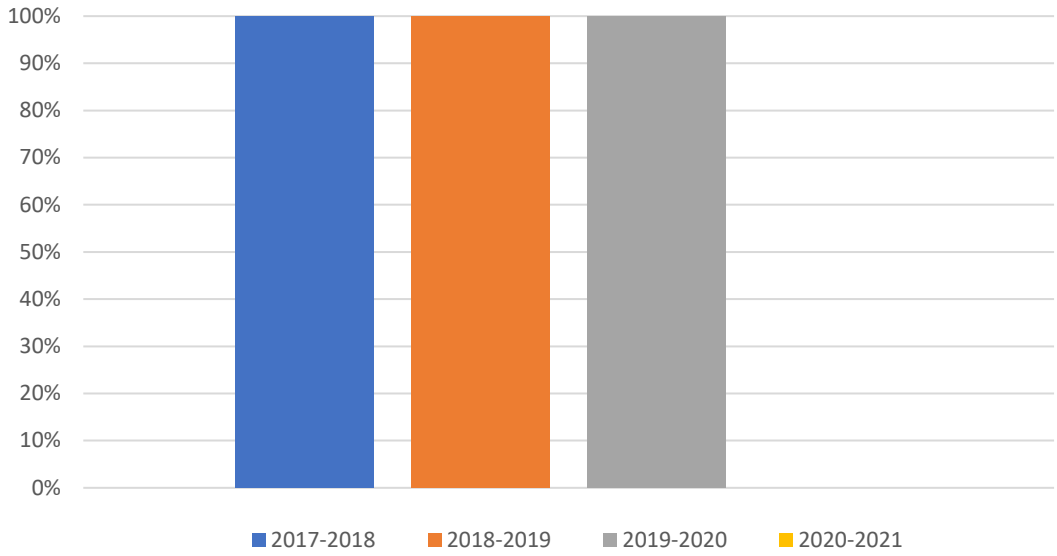
## PROGRAM VITAL STATISTICS

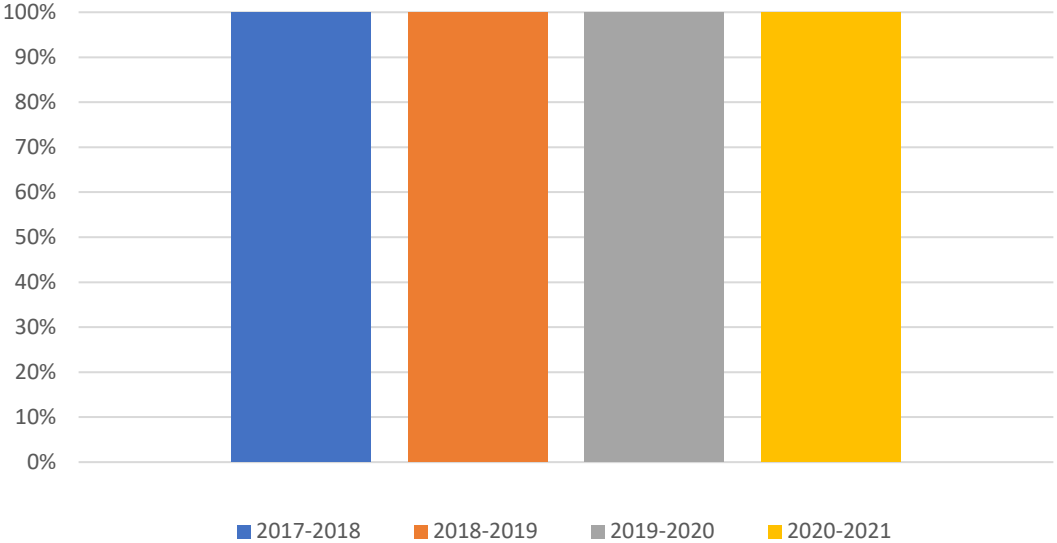
Indicator	Trend Analysis	Action Plans										
<div style="text-align: center;"> <p>Program Enrollment</p> <table border="1" style="margin: 10px auto; border-collapse: collapse;"> <caption>Program Enrollment Data</caption> <thead> <tr> <th>Year</th> <th>Enrollment</th> </tr> </thead> <tbody> <tr> <td>2017-2018</td> <td>45</td> </tr> <tr> <td>2018-2019</td> <td>53</td> </tr> <tr> <td>2019-2020</td> <td>48</td> </tr> <tr> <td>2020-2021</td> <td>34</td> </tr> </tbody> </table> </div>	Year	Enrollment	2017-2018	45	2018-2019	53	2019-2020	48	2020-2021	34	<p>Enrollment trends for this program were on an increase and slightly behind target goals based on the enrollment plan put in place by the department, partnering dealers and school leadership dating back to 2017.</p>	<p>The long-term growth plan was reduced by the school's leadership. This prompted a new MOU with our sponsoring dealers and will allow the program to continue operating at a smaller scale.</p>
Year	Enrollment											
2017-2018	45											
2018-2019	53											
2019-2020	48											
2020-2021	34											



Indicator	Trend Analysis	Action Plans										
<p style="text-align: center;"><b>Fall to Spring Persistence</b></p>  <table border="1" data-bbox="113 185 1194 810"> <caption>Fall to Spring Persistence Data</caption> <thead> <tr> <th>Year</th> <th>Persistence Rate</th> </tr> </thead> <tbody> <tr> <td>2017-2018</td> <td>95%</td> </tr> <tr> <td>2018-2019</td> <td>83%</td> </tr> <tr> <td>2019-2020</td> <td>8%</td> </tr> <tr> <td>2020-2021</td> <td>93%</td> </tr> </tbody> </table>	Year	Persistence Rate	2017-2018	95%	2018-2019	83%	2019-2020	8%	2020-2021	93%	<p>This data is not representative of the persistence of the program. As an example, department data shows the fall to spring persistence to actually be 89% in 2019-2020.</p>	<p>Our actions plan related to the program is formulated around accurate numbers coming directly from student headcounts in this program.</p> <p>If a newly recruited student washes out, it will typically show up in our fall to spring numbers. A leading reason given by exiting students was higher wages in competing work places during the 2018-2020 years.</p> <p>Our sponsoring dealers that employ our students keep tabs on the economy and make wage adjustments as they deem necessary.</p>
Year	Persistence Rate											
2017-2018	95%											
2018-2019	83%											
2019-2020	8%											
2020-2021	93%											

Indicator	Trend Analysis	Action Plans										
<p style="text-align: center;"><b>Fall to Fall Retention</b></p>  <table border="1" data-bbox="149 159 1161 824"> <caption>Fall to Fall Retention Data</caption> <thead> <tr> <th>Academic Year</th> <th>Retention Percentage</th> </tr> </thead> <tbody> <tr> <td>2017-2018</td> <td>95.00%</td> </tr> <tr> <td>2018-2019</td> <td>70.00%</td> </tr> <tr> <td>2019-2020</td> <td>60.00%</td> </tr> <tr> <td>2020-2021</td> <td>100.00%</td> </tr> </tbody> </table>	Academic Year	Retention Percentage	2017-2018	95.00%	2018-2019	70.00%	2019-2020	60.00%	2020-2021	100.00%	<p>Again, bad data for this section. It is not possible to have 211% retention in 2021. Real retention numbers are in the mid 90's for 2021.</p>	<p>Our actions plan related to the program is formulated around accurate numbers coming directly from student numbers in this program.</p> <p>Fall to fall retention is one of our best metrics and is more of a long-term indicator for us. If a student persists into fall, they will typically graduate the following May.</p>
Academic Year	Retention Percentage											
2017-2018	95.00%											
2018-2019	70.00%											
2019-2020	60.00%											
2020-2021	100.00%											

Indicator	Trend Analysis	Action Plans										
<p style="text-align: center;"><b>Graduation Rates</b></p>  <table border="1" data-bbox="121 227 1171 779"> <caption>Graduation Rates Data</caption> <thead> <tr> <th>Academic Year</th> <th>Graduation Rate (%)</th> </tr> </thead> <tbody> <tr> <td>2017-2018</td> <td>~98%</td> </tr> <tr> <td>2018-2019</td> <td>~98%</td> </tr> <tr> <td>2019-2020</td> <td>~98%</td> </tr> <tr> <td>2020-2021</td> <td>~98%</td> </tr> </tbody> </table>	Academic Year	Graduation Rate (%)	2017-2018	~98%	2018-2019	~98%	2019-2020	~98%	2020-2021	~98%	<p>Graduations rates in excess of 100% indicate bad data. Realistic numbers for this program for this time period ranges from 59% - 96%</p>	<p>Our actions plan related to the program is formulated around accurate numbers coming directly from student numbers in this program.</p> <p>Graduation rates in the program have been directly linked to the initial selection process and economic factors already listed above.</p>
Academic Year	Graduation Rate (%)											
2017-2018	~98%											
2018-2019	~98%											
2019-2020	~98%											
2020-2021	~98%											

Indicator	Trend Analysis	Action Plans										
<p style="text-align: center;"><b>Job Placement Rates</b></p>  <table border="1" data-bbox="134 253 1184 792"> <caption>Job Placement Rates Data</caption> <thead> <tr> <th>Year</th> <th>Rate (%)</th> </tr> </thead> <tbody> <tr> <td>2017-2018</td> <td>100</td> </tr> <tr> <td>2018-2019</td> <td>100</td> </tr> <tr> <td>2019-2020</td> <td>100</td> </tr> <tr> <td>2020-2021</td> <td>100</td> </tr> </tbody> </table>	Year	Rate (%)	2017-2018	100	2018-2019	100	2019-2020	100	2020-2021	100	<p>Trending 100% placement of graduates in the industry. On some state reports this may be lower as it does not accurately account for the out of state placement of students.</p>	<p>Note: This program is offered in cooperation with sponsoring dealer partners that employ our graduates before they send them to the college.</p>
Year	Rate (%)											
2017-2018	100											
2018-2019	100											
2019-2020	100											
2020-2021	100											