Pueblo Academic Program Assessment Report for AY 2016-17

Program: Automotive Industry Management (AIM)

Date: May 25, 2018

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Please complete this form for each undergraduate, minor, certificate, and graduate program (e.g., B.A., B.S., and M.S.) in your department. Please copy any addenda (e.g., rubrics) and paste them in this document, and submit it to the dean of your college/school as per the deadline established. The dean will forward it to me as an email attachment before June 1, 2018. You'll also find the form at the assessment website at: http://www.colostate-pueblo.edu/Assessment/ResultsAndReports/Pages/default.aspx.

Please describe the 2017-18 assessment activities for the program in Part I. Use Column H to describe improvements planned for 2018-2019 based on the assessment process. In Part II, please describe activities engaged in during 2017-18 designed to close-the-loop (improve the program) based on assessment activities and the information gathered in 2016-17 Thank you.

I. Program student learning outcomes (SLOs) assessed in this cycle, processes, results, and recommendations.

A. Which of the program SLOs were assessed during this cycle? Please include the outcome(s) verbatim from the assessment plan.	B. When was this SLO last assessed?	C. What method was used for assessing the SLO? Please include a copy of any rubrics used in the assessment process.	D. Who was assessed? Please fully describe the student group.	E. What is the expected achievement level and how many students should be at it?	F. What were the results of the assessment?	G. What were the department's conclusions about student performance?	H. What changes/improvements to the program are planned based on this assessment?
SLO #4 Demonstrate critical thinking and problem solving skills in the diagnosis and service of automotive systems.	Spring 2014 2015 2016 2017 2018	Automotive Service Excellence (ASE) Student Certification online testing	AIM upper class students who have successfully completed all lower level AIM courses	Every AIM student should pass all 10 of the ASE student Certification Tests	Results of S18 ASE testing were below expectation. See attachment below for more details	Student performance in AIM 125 Brakes & Suspension and AIM 165 Auto powertrains were lower than expected. Course evaluation will be looked out to see student comments	AIM Program Review, National Advisory Committee and student evaluation comments are being acted upon currently. Faculty is review curriculum changes and course teaching out line to address areas of concern
SLO # 6 Employment seeking and Employer Survey	Spring 2013	Employer Survey see attached results	AIM 405 Personal Selling, mainly juniors and seniors consisting of ___ student in Fall 2017	Expected response rate of Employer Survey is 100%.	Employer Survey results of the 4 request only two replied (50%)	Student performance met employer expectations.	Response rate from Employers Survey conducted by Career Center was more effective than last results in 2013

Student Exit Survey	S2016	AIM graduates were notified of Exit Survey administered by the CEEPS Admins Assistant. This was voluntary and anonymous	2018 Spring graduates of AIM 335 Shop Practice seven students participated in Exit Survey	Expected response 100% received zero	Seven of the 12 graduating participated in Student Exit Survey	Faculty was very disappointed in student lack of action regarding assessment of the program	AIM faculty decided to preform Exit Survey again in 2018 by directing 2018 graduates to Admin Assistant to complete survey. Outcome was much great and is being evaluated for implementation in Fall 2018

Comments:

B. Follow-up (closing the loop) on results and activities from previous assessment cycles. In this section, please describe actions taken during this cycle that were based on, or implemented to address, the results of assessment from previous cycles.

A. What SLO(s) did you address? Please include the outcome(s) verbatim from the assessment plan.	B. When was this SLO last assessed?	C. What were the recommendations for change from the previous assessment?	D. Were the recommendations for change acted upon? If not, why?	E. What were the results of the changes? If the changes were not effective, what are the next steps or the new recommendations?
SLO #4 Demonstrate critical thinking and problem solving skills in the diagnosis and service of automotive systems.	2017	More lecture and experience for areas that were found to be lacking. Focus on the weaknesses to make them strong	AIM Program Review, National Advisory Committee and student evaluation comments are being acted upon currently. Faculty is reviewing curriculum changes and course teaching out line to address areas of concern	After curriculum revision results of implemented changes will be determined in the next ASE testing cycle S2019

SLO #6 Employment seeking and Employer Survey	S2016	Your goal was 100% on the employer survey, but you did not get that many responses. What is being done to increase survey participation? Reminders? Phone calls? Good idea to hand them out in person. Hopefully that helps!	Employer Survey results of the 4 request only two replied (50%)	Response rate from Employers Survey conducted by Career Center was more effective than last results. It is difficult to have Employer do survey if they are unwilling to participate. Not sure this will ever be 100%
Student Exit Survey	S2016	Problem of survey participation identified and review of marginal areas of student performance. Clarification on how dept. will address would be helpful.	Yes	Greater participation and helpful feedback for Student Exit Surveys. Comments reflect other information for the results of the AIM Program Review and National AIM Advisory Committee. This will take about two years to successfully complete curriculum changes.

Graduate Exit Survey

AIM- Automotive Industry Management

The Automotive Industry Management (AIM) Department is interested in your perception of the quality of the education you received from Colorado State University - Pueblo, specifically in the AIM program. The primary focus of this assessment is on the content and delivery of courses you completed in the AIM Department. Your response to the following items will have a direct impact on the AIM program and course offerings.

The results of the survey will be summarized (your individual response will NOT be identified) and will go directly to the AIM program chair and the AIM faculty for purposes of evaluation and possible modification of the program and curriculum. The survey is anonymous and does not require your name.

1. I feel that my education at CSU-Pueblo has successfully prepared me to enter the related professional field of my choice.

a. strongly agree b. agree c. no opinion d. disagree
5 2

2. I believe that my preparation in AIM compares favorably with that of graduates from similar programs at other institutions.

a. strongly agree b. agree c. no opinion d. disagree

2 4 1

3. I speak positively to others about the CSU-Pueblo AIM Department and my educational experiences

a. always b. most of the time c. about half the timed. d. occasionally

6 1

4. The academic advisement provided by the current AIM faculty was helpful and effective.

a. always b. most of the time c. about half the time d. occasionally e. never

6 1

5. As a whole, the AIM faculty at CSU-Pueblo showed interest in me as a person.

a. always b. most of the time c. about half the time d. occasionally e. never
6 1

Course Usability/Quality Ratings:

Rate each course that **you completed** at CSU-Pueblo in two areas: **Application** and **Quality**.

1 = Very Low application/quality **2 = Low application/quality**	**3 = Neutral**	**4 = High application/quality** **5 = Very High application/quality**

If you did not take a class that is included on the list below, lave the ratings blank and proceed to the next item

Course	Title	Application					Quality				
		#5	#4	#3	#2	#1	#5	#4	#3	#2	#1
AIM 105	Intros to Parts & Service Industry	2	4	1	0	0	2	2	1	0	
AIM 115	Engine Design and Operation	5	2	0	0	0	2	2	1	1	0
AIM 125-125L	Suspension and Brakes	5	0	2	0	0	2	0	3	2	0
AIM 155	Automotive Parts Operations	6	1	0	0	0	3	2	0	0	0
AIM 165	Power Trains & Drive Lines	6	1	0	0	0	2	3	0	0	0
AIM 235	Fuel Systems & Exhaust	6	1	0	0	0	4	1	2	0	0
AIM 245-245L	Electrical Systems I	5	1	1	0	0	3	1	1	0	0
AIM 255- 255L	Electrical Systems II	6	1	0	0	0	4	1	0	0	0
AIM 265-265L	Auto Parts Mgmt	3	5	0	0	0	1	3	1	0	0

AIM 305	Customer Service & Regulatory Issues	4	3	0	0	0	3	2	0	0	
AIM 325	Fuels & Lube Production	6	1	1	0	0	4	1	0	0	0
AIM 335	Shop Practices	7	0	0	0	0	4	1	0	0	0
AIM 345	Advanced Automotive Systems	7	0	0	0	0	4	1	0	0	0
AIM 405	Personal Selling & Techniques	3	3	1	0	0	3	2	2	0	0
AIM 425	Auto Financial Mgmt	4	3	0	0	0	3	3	0	0	0

Please list any topics/courses you feel should be included in the AIM program that are not currently taught:

- Diesel and hybrid vehicles
- Skype interviewing and phone interviews
-

How confident do you feel about your abilities in your chosen field at this time?

- Very confident

What were the most valuable learning experiences you received from your education at CSU-Pueblo?

(Please include comments on assignments, information sessions, guest speakers and field trips)

- Combination of auto business and business manager classes, I don't plan to be a technician
- Information sessions with companies and guest speakers

Discuss any improvements that you feel should be made to the AIM curriculum/program and provide a statement of its teaching/learning value

- Enjoy my automotive professors but (omitted professor name) is often distracted and unorganized
- Needs to have newer vehicles and teach diesel and hybrid vehicles
- Combine management classes—one class with all field trips would be better
- Allow students to work at business as part of business contacts instead of going on field trip

When did/will you graduate (check one): X (5) May 2018 0 December 2018 Summer X (2) 2018

The following information is required for tracking/reporting purposes as required by the State of Colorado. Remember, you will not be identified or individually associated with this data:

Have you accepted a career offer? 2 Yes 5 No

Is your position in an AIM or related field? 3 Yes 4 No

What is your starting salary: No student responses...?

Signing bonus (if any): No response

AIM ASE Testing Results:

AIM
ASE Student Certification
2018 Annual Assessment Report

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Introduction

2018 marks the 5th consecutive year AIM has used the ASE Student Certification Exams for assessment of SLO #4; ***Demonstrate critical thinking and problem solving skills in the diagnosis and service of automobiles.*** There examination series includes 10 tests;

1. Engine Repair
2. Automatic Transmission/Transaxle
3. Manual Transmission/Drive Train
4. Suspension & Steering
5. Brakes
6. Electrical/Electronics
7. HVAC.
8. Engine Performance
9. MLR
10. AST

Tests #1-8 evaluate the traditional eight technical areas of the automobile. MLR (Maintenance & Light Repair) includes basic content from these eight areas where as AST (Automobile Service Technician) exam evaluates all eight areas on an advanced level.

Data collection and calculations for AIM's annual assessment of SLO #4 include

1. **% scores**
   - Each Student; Tests 1-8 (per individual test), MLR, AST
2. **% Score Averages**
   - Each Student, Tests 1-8 (per individual & group), All Tests
   - Cohort average; Tests 1-8 (per individual & group), MLR, AST, All Tests
   - Running Annual average;
     - Tests 1-8 (per individual & group), MLR, AST, All Tests
3. **National Percentile Rank**
   - Each Student; Tests 1-8 (per individual test), MLR, AST
   - Cohort average; Tests 1-8 (per individual & group), MLR, AST, All Tests
4. **National Percentile Rank Averages**
   - Each Student; Tests 1-8 (group), All Tests
   - Cohort average; Tests 1-8 (individual & group), MLR, AST, All Tests
   - Running Annual average;
     - Tests 1-8 (per individual & group), MLR, AST, All Tests

Calculation Procedure

% Score

Enter #/correct answers into spread sheet that calculates percent score.

- Tests 1-8 are 40 questions,
- MLR is 60 questions,
- AST is 80 questions

National Percentile

- Cross reference #/correct answers in the National Percentile table provided by ASE (post June 15th
- Enter NP into spread sheet that calculates averages.

Summary

Analysis is based only on percent scores as National Percentile Chart is not available until June 15th 2018. Results indicate a slightly below average year, 61% All Test average compared to the 64% five year All Test Average.

All exam averages have leveled off varying only 1-2% annually.

Automatic Transmissions has improved over the last three test cycles to a 63% five-year. 2018 score at 63% is right on par with the average.

Brakes 58%, Steering & Suspension 57%, and Manual Drive Trains 58% continue to perform under the five year all test average of 64%. AIM is developing a curriculum proposal changes necessary to address these traditional bub-performing content areas. This proposal will be presented to the CAP board this Fall 2018

2018 Analysis

As of this writing analysis for 2018 is limited to % score as National Percentile Table will not be published until after June 15th 2018. Table 1 appearing below compares 2018 percent scores to the 5 year averages. Relative to the 5-year averages, slight decrease are indicated in all four areas. A 2% decrease is indicated in three areas; Tests 1-8, MLR and AST while a 1% decrease is indicated in the All Test average.

Tests	5 year Average	2018 % Score
A1-8	63	61
MLR	70	68
AST	69	67
All Tests	64	63

Table 1

2018 % score averages compared to 5-Year average

2016 Anomaly

AIM experienced abnormally high test scores during the 2016 test cycle. 2016 percent average scores and National Percentile Rank in all tests averaged 10 -12 points above all other annual test cycles. Removing 2016 from the averages then results in a more realistic analysis indicating AIM 2018 performed better than average with the exception of AST. *The AST comparison is made based on the 2017 score only because AST testing did not begin until 2016. (See Table 2 & Chart 1)

2016 % Scores	Multi Year Average Excluding 2016 Scores
73	60
80	62
80	*71
74	60

Table 2

2018 % Score Compared to Multi-Year Average (excluding 2016 scores)

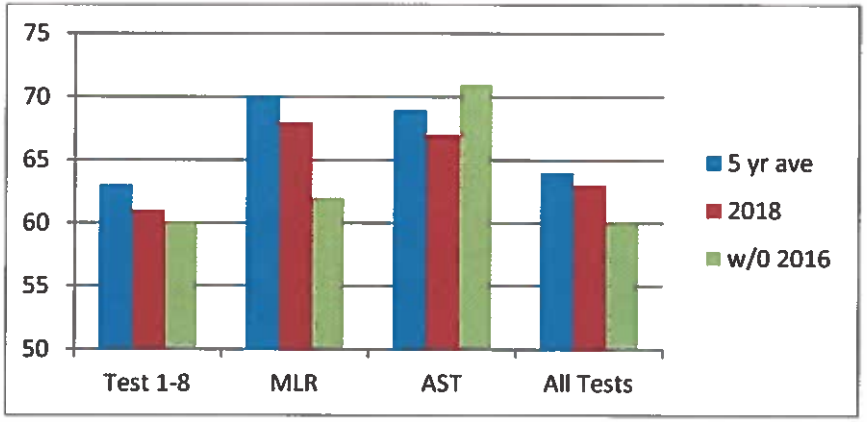


Chart 1

2018 % scores compared to 5 year average & average excluding 2016 scores

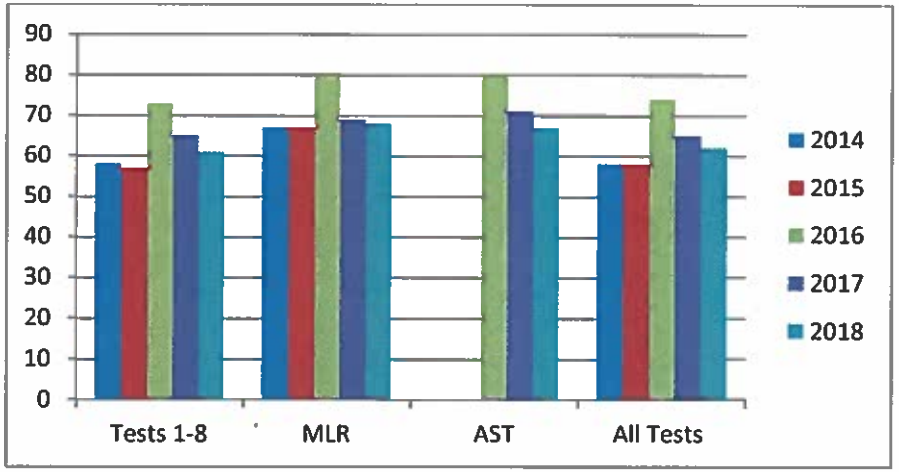


Chart 2

Chart illustrates 2014-2018 % test scores. Note the abnormally high 2016 results

2018 Failed Tests

AIM has reached 100% compliance with AIM 335 students participating in the exam initiative. During the 2018 test cycle AIM administered 130 ASE Student Certification Exams with an average % Test Score @ 61%. Eighteen (18) exams were failed in 2018 compared to the annual 5-year average of 19 failed tests. However, when compared in percentage of total tests taken 2018 average was (13.8% compared to the AIM 5-year average failure rate is 13.3%

- two students failed three exams each,
- one student failed four exams
- the fourth student failed eight of the ten exams.

In fact this fourth student's poor performance skewed the entire cohort results by 2%! This student's results included one test @ 28%, two exams @ 30% and another @ 35%. An ASE Student Certification Exams are a four selection, 0.62 degree of difficulty, multiple choice exam. This student barely beat the 1 in 4 odds on these tests. AIM needs to address the correlation between ASE test performance and the letter grade received in courses relative to the failed tests. In other words; how did this student pass, with a C or better, the course/s which include the same content as the failed ASE tests? Discussion has ensued in AIM of perhaps integrating SE testing as a portion of course evaluation.

Year	Total # Tests/Test Failed	Failure Rate %
2018	130/18	14%
2017	163/19	12%
2016	129/7	5%
2015	1/3051	20%
2014	137/22	16%

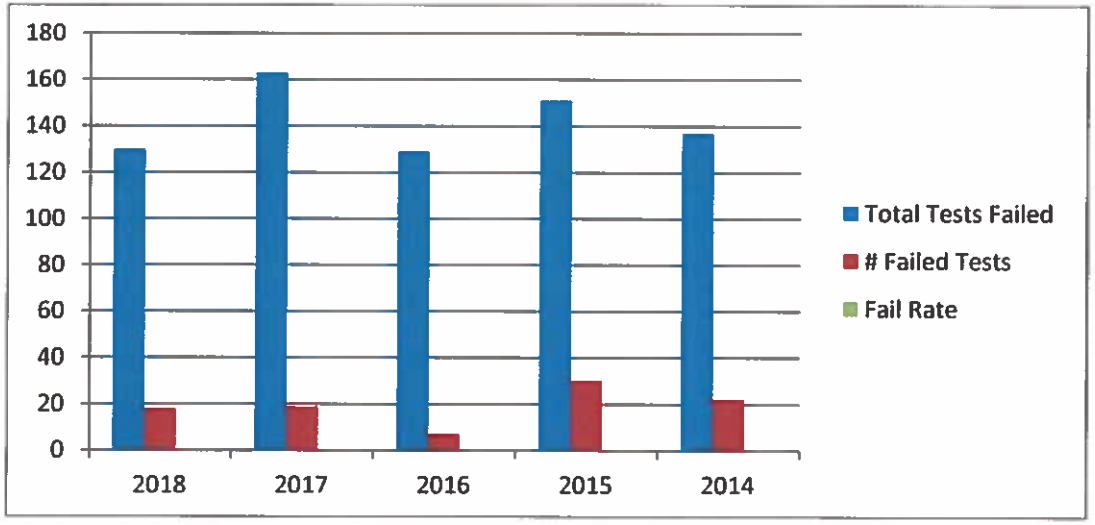


Chart 3

Chart compares total # tests taken vs # failed tests

Consistent Low Test Performance

Cohort averages for three tests continue to consistently perform significantly under the Tests 1-8 average score of 63%. These tests include;

- Manual Drive Trains (58% for 2018),
- Steering & Suspension (57% for 2018) and
- Brakes (58%for 2018).

The above three areas account for 56 of the 96 failed tests (58%) for the 5 year period.

Previously Automatic Transmission/Transaxles was also included in this group but scores in this test have maintained a 63% average for the past three test cycles. Perhaps this is due in part to increased automatic transmission emphasis in AIM 165. Including Automatic Transmission/transaxle is this group (BR, SS, ATMT, AT); 67/96 = 70%.

The consistent low performing areas have leveled off in the last three test cycles;

- Manual Drive Trains @ 58% for 2018, has leveled off and right on par with the 57-58% average score for the last three test cycles.
- Steering & Suspension @ 57% for 2018, is slightly above the 55-56% average score for the last three test cycles.
- Brakes @ 58% for 2018 is slightly down compared to the60% average test score for the last three test cycles.

AIM is considering restructuring the courses which include drive train and brakes/suspension content. AIM 125 4(3, 1) includes content in brakes and steering/suspension. AIM 165 includes content both in automatic and manual transmissions. Consensus within the program indicates additional time on task is needed to cover the vast amount of content contained in these two courses. Currently the credit structure of these courses are 4(3, 1) but the strategy is to double the lab experience by restructuring the courses to 4(2, 2). The students will then have two lab sessions per week instead of one. This change increases weekly attendance by ½ hour.

Year/ Total # Failed	Brakes + Steer/Susp	MT + AT
2018, 18	2 + 3 = 5	3 + 2 = 5
2017, 19	4 + 2 = 6	6 + 1 = 7
2016, 7	1 + 2 = 3	2 + 1 =3
2015, 30	4 + 8 = 12	6 + 5 = 11
2014, 22	2 + 6 = 8	5 + 2 = 7

Table 3

Failed Tests

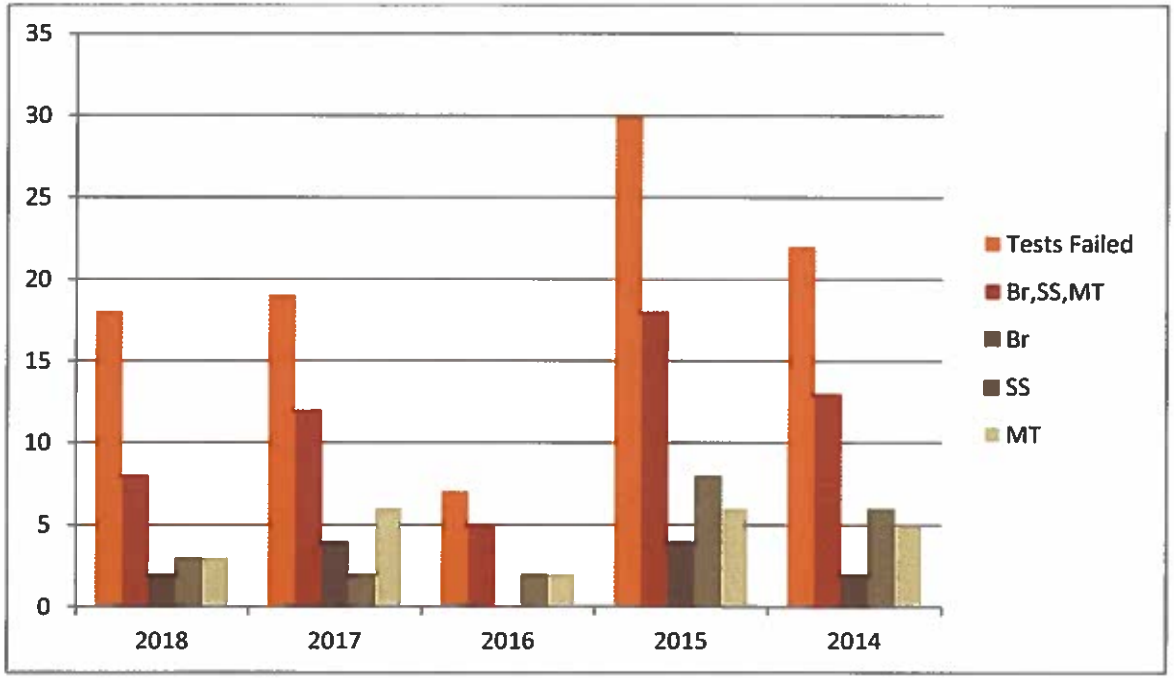


Chart 4

Blue column on left is the number of failed tests for that year. Next to it is the red/Crimson column indicating the sum of Brakes + Steering/Suspension + Manual Drive Trains. The next three columns (l-R) are Brakes, Suspension Steering, and Manual Drive Trains. It's easy to determine the majority of tests failed are in three content areas; Brakes, Suspension/Steering, Manual Drive trains. This trend has held fast in all five annual test cycles.

Program Expectations & Goals

When AIM first began ASE Student Certification Exam initiative goals were not clearly defined. In fact, an arbitrary goal of an 80% pass rate was the only established goal. AIM has surpassed this goal each of the annual test cycle and therefore is not a significant goal for future achievement and improvement.

It is difficult to establish concrete goals in the absence of performance stats from other equivalent program. AIM has attempted to convince other NADA universities to administer the tests in their programs. At this juncture no one is interested in using ASE student Certification exams as their internal assessment instrument.

However, after five years of AIM testing trends are becoming clear. One is the consistent, significantly below average performance in Brakes, Steer/Suspension and Manual Drive Trains. AIM is developing a curriculum proposal changes necessary to address these traditional sub-performing content areas. Of course improving these scores at least into the low 60's % will constitute a great improvement. However the overall question remains, what performance level is within AIM capabilities?

To answer that question we must examine the results from a group of 15 AIM students who performed significantly above the averages. Overall this group averaged 80% for all tests with a National percentile Rank of 88th (80%/88th). However, this group can be further divided into three distinct divisions, one of which is most typical of the "average" high performing AIM student.

The 1st group was the highest performing group consisting of three individuals who, during their AIM education worked all four years at a dealership. This group averaged 87%/96th. This level is performance is not realistic for AIM because the program does not have the clock hours available to sponsor the extensive experience these students gleaned at the dealership.

The 2nd group performed at an 84%/90th level. This group had a great deal of relative industrial experience at part retailers and other related automotive service facilities. But their level of experience was short of the ultimate level of experience gleaned by the 1st group.

The 3rd and final group is the most likely example for the AIM achievement goal. This group of nine students scored 70%/83rd. These were serious, very capable, studious individuals who took the program seriously. Again, they did not have the practical experience of even the 2nd group but they applied themselves to the content.

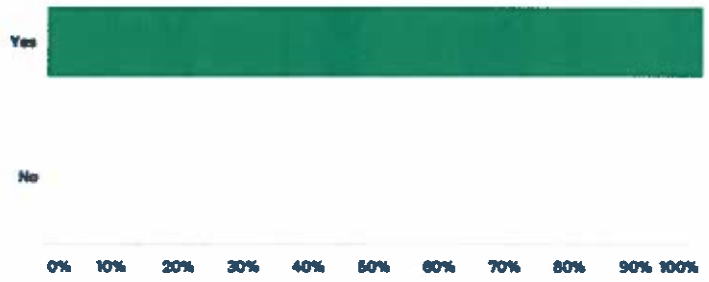
Is 3rd group achievement level possible for AIM? An important point to make here is that in 2016 AIM achieved this level of performance @ 74%/81st. Perhaps this is a long term goal achievable with slow, steady growth of perhaps 2% per year.

Simply improving just the traditional low performing content areas to par will provide a significant boost to the cohort scores. It also must be noted that every test cycle features a few very low perfuming students, of which one or two can skew the overall average scores. It is reasonable every AIM student should pass all 10 of the ASE student Certification Tests. Please understand The ASE tests are multiple choice, 0.62 level of difficulty, 50 % score to pass. This 50% score places a student right at the apex of the bell curve. Should not a college, rather a university level program, expect this as the MINIMUM level of performance from their students?

CSU-Pueblo Employer Survey 2017-2018

Q1 Did you hire any CSU-Pueblo students or graduates this past year in part-time, full-time or internship positions?

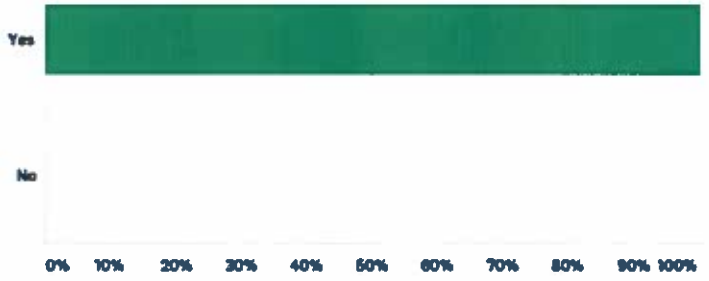
Answered: 3 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	100.00%	3
No	0.00%	0
TOTAL		3

Q2 Did you interview any CSU-Pueblo students or graduates this year?

Answered: 3 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	100.00%	3
No	0.00%	0
TOTAL		3