



 **SUNY CANTON**

# Automotive Technology Fall 2015 Assessment Report



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# Automotive Program

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# What was assessed?

## Student learning outcomes list for Automotive:

### ALO1: **Diagnose and repair** all automotive systems

- Diagnose and repair all types of automotive systems to include but not exclusive to drive train and axles, automotive transmissions and transaxle, engine repair, suspension and steering, brakes, electrical/ electronic systems, heating and air conditioning, engine performance.



# Student learning outcomes list for Automotive:

**ALO2: Demonstrate the ability to find all related system diagnostic/repair information within auto service publications**

- Demonstrate the ability to find all related system diagnostic/repair information within auto service publications; electronic database, web based search engines, etc.



# Student learning outcomes list for Automotive:

**ALO3: Utilize the 8 point **service procedures** to diagnose and solve problems**

- Utilize the 8 point service procedures to diagnose and solve problems.



# Student learning outcomes list for Automotive:

**ALO4: Demonstrate **safety procedures** while conducting automotive service activities.**

- Demonstrate safety procedures while conducting automotive service activities.



# Where were outcomes assessed?

**ALO1: Diagnose and repair** all automotive systems

Auto 101 – SLO A101.3

Auto 102 – SLO A102.1, .2, .3, .4, .5

Auto 111 – SLO A111.2, .4

Auto 112 – SLO A112.1, .2, .3, .4

Auto 213 – SLO A213.1, .2, .3, .4, .5

Auto 141 – SLO A141.1, .2, .3, .4, .5

Auto 144 – SLO A144.1, .2, .3, .4, .5,  
.6, .7

Auto 213 – SLO A213.1, .2, .3, .4, .5

Auto 214 – SLO A 214.1, .2, .3, .4, .5,  
.6, .7, .8, .9

Auto 220 – SLO A220.1, .2, .3, .4, .5

Auto 221 – SLO A221.3

Auto 241 – SLO A241.1, .2, .3, .4, .5,  
.6

Auto 282 – SLO A282.2, .3, .4, .5





# Where were outcomes assessed?

**ALO2: Demonstrate the ability to find all related system diagnostic/repair information within auto service publications**

Auto 101 – SLO A101.2, .3, .4

Auto 102 – SLO A102.1, .2, .3, .4, .5

Auto 111 – SLO A111.2, .3, .4

Auto 112 – SLO A112.3, .4

Auto 122 – SLO A122.2, .3

Auto 141 – SLO A141.1, .2, .3, .4, .5

Auto 144 – SLO A144.1, .2, .3, .4, .5, .6, .7

Auto 220 – SLO A220.1, .4, .5

Auto 225 – SLO A225.3, .4, .5

Auto 230 – SLO A230.1, .4

Auto 221 – SLO A221.3

Auto 241 – SLO A241.1, .2, .3, .4, .5, .6

Auto 282 – SLO A282.2, .3, .4, .5



# Where were outcomes assessed?

**ALO3: Utilize the 8 point **service procedures** to diagnose and solve problems**

Auto 101 – SLO A101.2

Auto 102 – SLO A102.1, .2, .3, .4,  
.5

Auto 122 – SLO A122.3

Auto 141 – SLO A141.2, .3, .4, .5

Auto 144 – SLO A144.1, .2, .3, .4, .5,  
.6, .7

Auto 220 – SLO A220.4, .5

Auto 230 – SLO A230.2, .3

Auto 241 – SLO A241.2, .4, .6

Auto 282 – SLO A282.2, .3,



# Where were outcomes assessed?

**ALO4: Demonstrate safety procedures while conducting automotive service activities.**

Auto 101 – SLO A101.1, .3

Auto 111 – SLO A111.1, .3

Auto 102 – SLO A102.1, .2, .3, .4,  
.5

Auto 141 – SLO A141.1, .2, .3, .4,  
.5

Auto 104 – SLO A104.1, .2, .3, .4,  
.5

Auto 144 – SLO A144.2, .3, .4

Auto 282 – SLO A282.1



# How was the assessment accomplished?

## Student assessment methods

- **11 Direct Student Artifact** (copy of training certificate)
- **30 Direct Exam** (quiz, hour test, midterm, final)
- **2 Indirect – other** (observe students for safe work practices)
- **6 Direct – other** (NATEF task job sheets)



# How was the assessment accomplished?

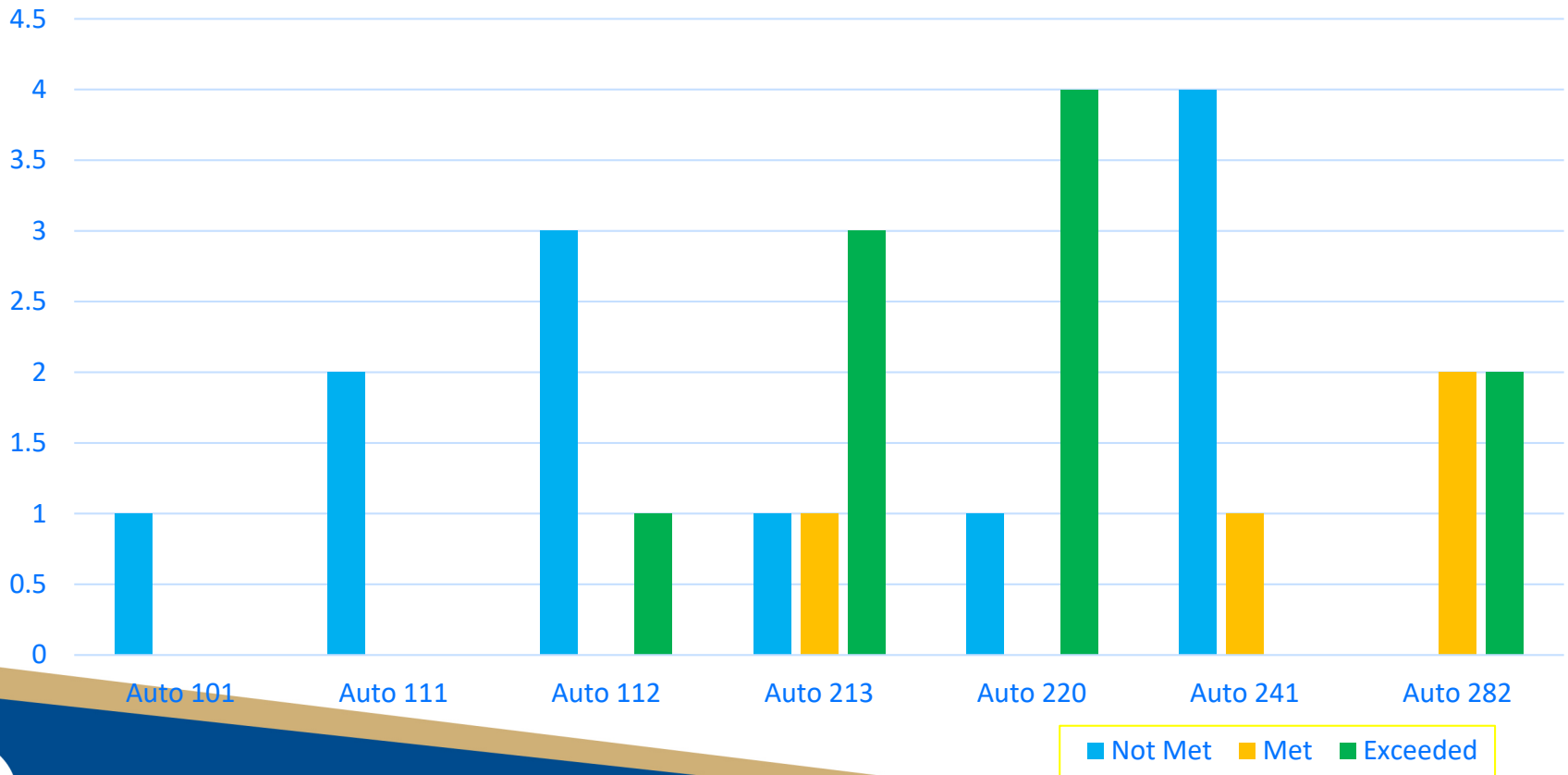
## Student Assessment Examples:

- 76% of students (n34) completed the on-line training requirement Safety Pollution Prevention (SP/2). (Auto CRN10100, A101.1)
- 93% of students (n31), were able to meet requirement (SLO demonstrate the proper set-up and shut-down procedures required for using an Oxy-fuel torch) with a score of 90% (Auto CRN10106,A104.1).



# Actual assessment data

## ALO1: Diagnose and repair all automotive systems



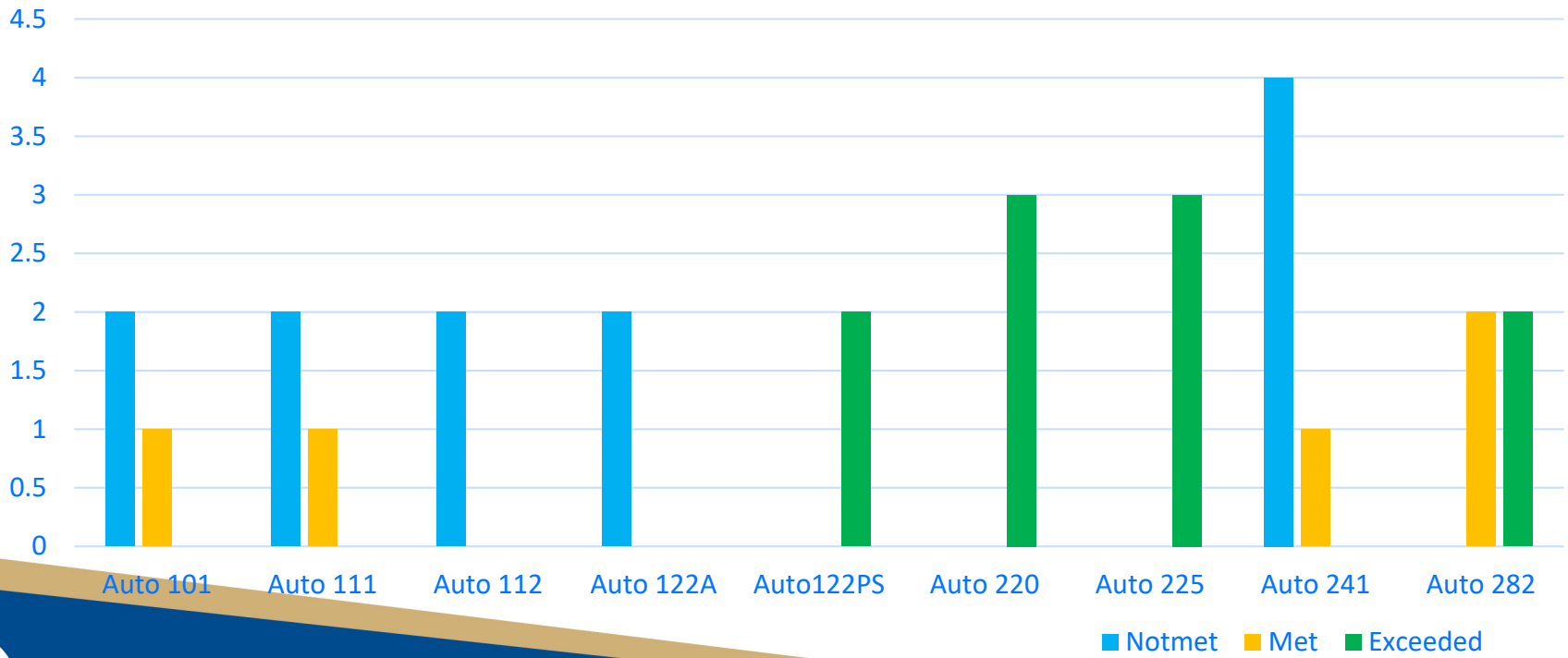
# Actual assessment data

AL01: Diagnose and repair all automotive systems				Course	Course SLO	Section	Target	Met Target?
				Auto 101	A101.3		70% of students will receive 70% or better on final exam questions	MET
				Auto111	A111.2		70% of students will correctly identify 70% of fasteners and answer	NOT MET
					A111.4		70% of students will successfully perform the dismount procedure	NOT MET
			Auto112	A112.1		70% of students will earn 70% or higher on each of these tasks.	EXCEEDED	
				A112.2		70% of the students will achieve 70% or higher on these tasks	NOT MET	
				A112.3		70% of the students will earn 70% or higher on these tasks.	NOT MET	
				A112.4		70% of the students will earn 70% or higher on these tasks.	NOT MET	
			Auto213	A213.1		70% of students will earn 70% or higher on given tasks	EXCEEDED	
				A213.2		70% of students will earn 70% or higher on given tasks	EXCEEDED	
				A213.3		70% of students will earn 70% or higher on given tasks	EXCEEDED	
				A213.4		70% of students will earn 70% or higher on given tasks	MET	
				A213.5		70% of students will earn 70% or higher on given tasks	NOT MET	
			Auto220	A220.1		70% of the students will earn 70% or higher on each of the tasks.	EXCEEDED	
				A220.2		70% of the students will earn 70% or higher on each of the tasks.	EXCEEDED	
				A220.3		70% of the students will earn 70% or higher on each of the tasks.	NOT MET	
				A220.4		70% of the students will earn 70% or higher on each of the tasks.	EXCEEDED	
				A220.5		70% of the students will earn 70% or higher on each of the tasks.	EXCEEDED	
			Auto241	A241.1		70% of students will give the correct explanation of automobile a	NOT MET	
				A241.2		70% of students will be able to correctly identify 70% of the compo	NOT MET	
				A241.3		70% of students will be able to correctly answer 70% of the exam c	MET	
				A241.4		70% of students will correctly identify 70% of special tools and use	NOT MET	
				A241.5		70% of students will correctly identify 70% steering components in	NOT MET	
			Auto282	A282.2		70% of student job sheets will provide 70% correct information an	MET	
				A282.3		70% of student job sheets will diagnose 70% of the problem correc	MET	
				A282.4		70% of students will correctly identify 70% of the steering compon	EXCEEDED	
				A282.5		70% of students will correctly identify 70% of the suspension com	EXCEEDED	



# Actual assessment data

ALO 2 - Demonstrate the ability to find all related system diagnostic/repair information within auto service publications; electronic database, web based search engines, etc.





# Actual assessment data

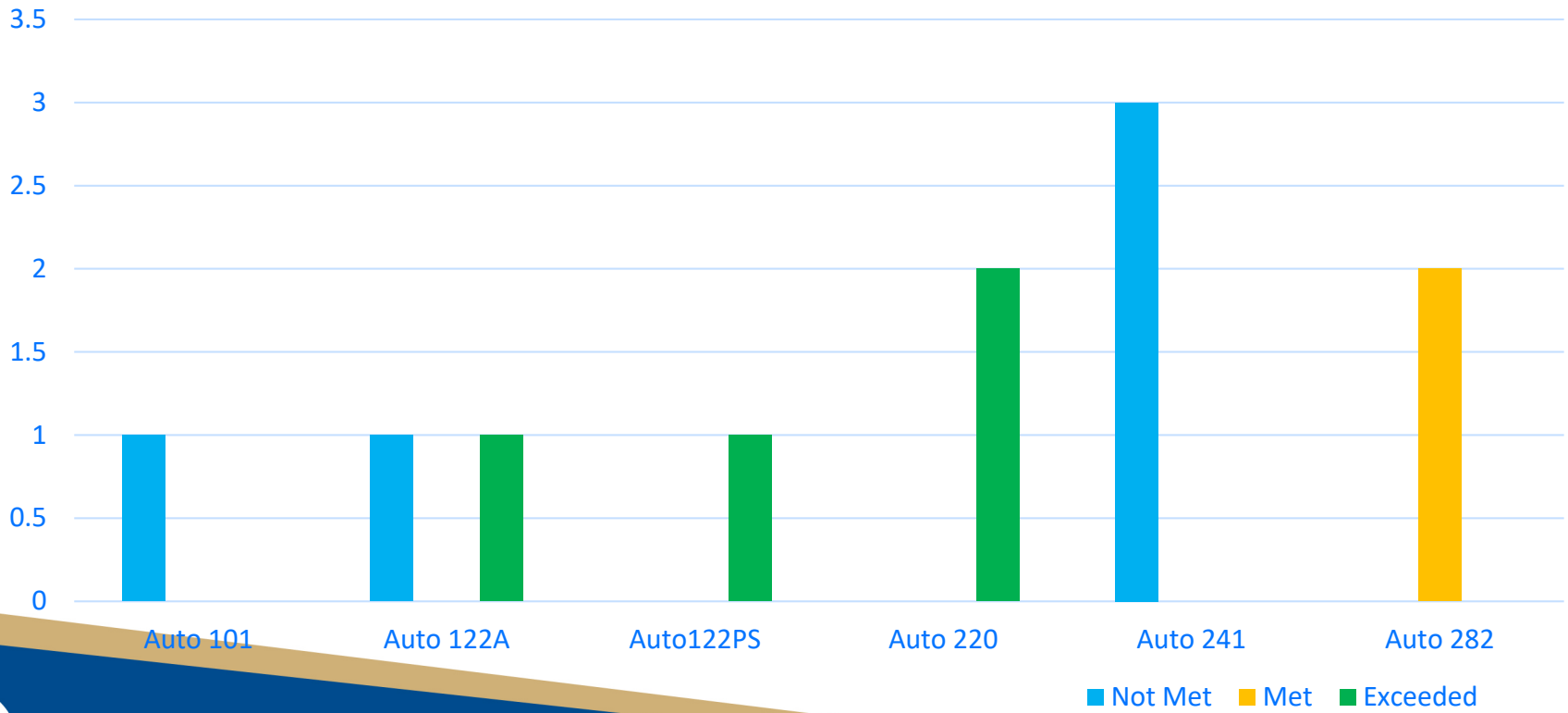
## ALO2: Demonstrate the ability to find all related system diagnostic/repair information within auto service publications

Course	Course SLO	Section	Target	Met Target?
Auto101	A101.2		70% of the students will complete the work order to a score of	NOT MET
	A101.3		70% of students will receive 70% or better on final exam ques	MET
	A101.4		70% of students will answer 70% of the engine operation ques	NOT MET
Auto111	A111.2		70% of students will correctly identify 70% of fasteners and an	NOT MET
	A111.3		70% of students will properly demonstrate the use of a hydra	MET
	A111.4		70% of students will successfully perform the dismount proced	NOT MET
Auto112	A112.3		70% of the students will earn 70% or higher on these tasks.	NOT MET
	A112.4		70% of the students will earn 70% or higher on these tasks.	NOT MET
Auto122	A122.2	A	80% of the students will achieve 80% or higher.	NOT MET
	A122.2	PS	70% of the students will score 70% or better	EXCEEDED
	A122.3	A	80% of the students will achieve an 80% success rate or higher	NOT MET
	A122.3	PS	70% of the students will score 70% or better	EXCEEDED
Auto220	A220.1		70% of the students will earn 70% or higher on each of the tas	EXCEEDED
	A220.4		70% of the students will earn 70% or higher on these tasks.	EXCEEDED
	A220.5		70% of the students will earn 70% or higher on these tasks	EXCEEDED
Auto225	A225.3		75% of the students taking this course will score 70% or better	EXCEEDED
	A225.4		75% of the students taking this course will score 70% or better	EXCEEDED
	A225.5		75% of the students taking this course will score 70% or better	EXCEEDED
Auto241	A241.1		70% of students will give the correct explanation of 70% of the	NOT MET
	A241.2		70% of students will be able to correctly identify 70% of the co	NOT MET
	A241.3		70% of students will be able to correctly answer 70% of the ex	MET
	A241.4		70% of students will correctly identify 70% of special tools and	NOT MET
	A241.5		70% of students will correctly identify 70% of steering compor	NOT MET
Auto282	A282.2		70% of student job sheets will provide 70% correct informatio	MET
	A282.3		70% of student job sheets will diagnose 70% of the problem cc	MET
	A282.4		70% of students will correctly identify 70% of the steering com	EXCEEDED
	A282.5		70% of students will correctly identify 70% of the suspension c	EXCEEDED



# Actual assessment data

ALO 3 - Utilize the 8 point service procedures to diagnose and solve problems.



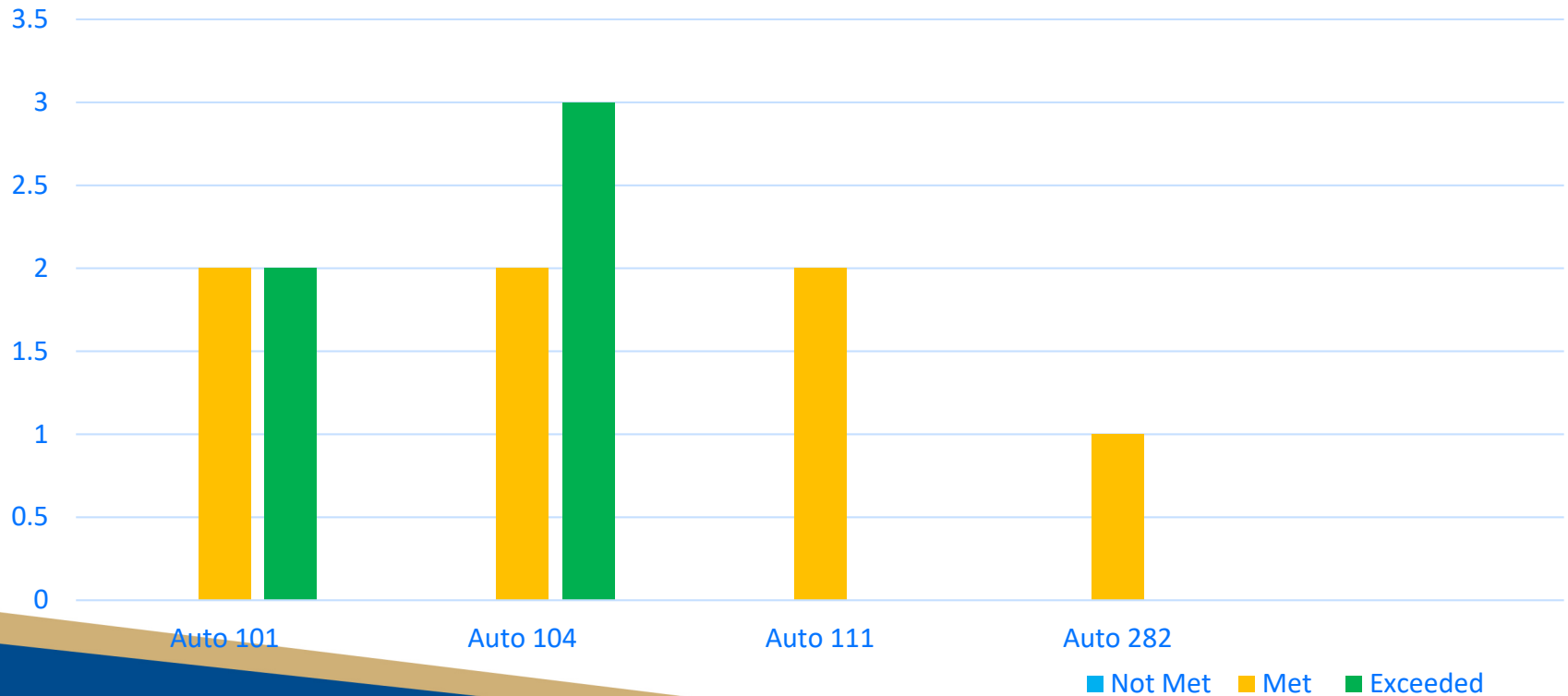
# Actual assessment data

ALO3: Utilize the 8 point service procedures to diagnose and solve problems							
Course	Course SLO	Section	Target				Met Target?
Auto101	A101.2		70% of the students will complete the work order to a score of				NOT MET
Auto122	A122.3	A	80% of the students will achieve an 80% success rate or higher				NOT MET
	A122.3	PS	70% of the students will score 70% or better				EXCEEDED
Auto220	A220.4		70% of the students will earn 70% or higher on these tasks.				EXCEEDED
	A220.5		70% of the students will earn 70% or higher on these tasks				EXCEEDED
Auto241	A241.2		70% of students will be able to correctly identify 70% of the co				NOT MET
	A241.4		70% of students will correctly identify 70% of special tools and				NOT MET
	A241.6		70% of students will correctly answer 70% of exam questions r				NOT MET
Auto282	A282.2		70% of student job sheets will provide 70% correct information				MET
	A282.3		70% of student job sheets will diagnose 70% of the problem co				MET



# Actual assessment data

ALO 4 - Demonstrate safety procedures while conducting automotive service activities.



# Actual assessment data

ALO4: Demonstrate safety procedures while conducting automotive service activities.				
Course	Course SLO	Section	Target	Met Target?
Auto101	A101.1		70% of students will provide instructor with a certificate of completion	MET
	A101.3		70% of students will receive 70% or better on final exam questions	MET
Auto104	A104.1		75% of the students in this course will score 70% or higher when given a written test	EXCEEDED
	A104.2		75% of the students in this course will score 70% or higher when given a written test	MET
	A104.3		75% of the students in this course will score 70% or higher when given a written test	EXCEEDED
	A104.4		75% of the students in this course will score 70% or higher when given a written test	MET
	A104.5		75% of the students in this course will score 70% or higher when given a written test	EXCEEDED
Auto111	A111.1		70% of students will not need to be reminded to wear safety glasses	MET
	A111.3		70% of students will properly demonstrate the use of a hydraulic jack	MET
Auto282	A282.1		70% students will not need remediation and will work safely in the shop	MET



# Assessment results: What have the data told us?

- **ALO1- Diagnose and repair**
  - Students struggled the most on:
    - Knowing when they have mastered a task (Auto111, Auto122)
    - Asking for extra help when they don't understand a concept (Auto 101, Auto 112)
- **ALO2 - Find Information**
  - Students struggled the most on:
    - Knowing when they have mastered a task (Auto111, Auto122)



# Assessment results: What have the data told us?

- **ALO3 - Service Procedures**
  - Students struggled the most on:
    - Following procedures, locating, reading, and comprehending (all courses)
- **ALO4 - Safety Procedures**
  - Students are following safe work procedures:
    - Safety glasses, leather shoes, work clothing
    - Use tools and equipment safely (all lab courses)



# Data-driven decisions: How the department has or plans to “close the loop” based on these results.

- Given these findings, what will the department do differently?
  - Change teaching methods
    - **Lab Capacity:** Need to expand the capacity for all students to clearly view and hear lab demos when lab group size exceeds 6 students. Use lapel microphones and video monitors to improve audio and visual access to instruction.
    - **Tutoring and Review:** Need to create task videos to review specific methods, techniques, and diagnostic processes that are frequently difficult to grasp.
    - **Skill Building Practice Sessions:** Provide students an opportunity to practice and gain confidence when using tools, equipment and service information.





# Data-driven decisions: How the department has or plans to “close the loop” based on these results.

- Increase instructional support
  - **Practice Time:** Continue to give students time to practice on their personal car when the task relates to the automotive program i.e. Auto Club.
  - **Student Recruiting:** Request more help identifying motivated students for the program when recruiting students.
- Change assessment methods and/or measures
  - **Outcome Targets:** Automotive faculty will review, revise and evaluate learning outcome targets each semester.



# What resources are currently used to close the loop?

- Faculty and Instructional Support time:
  - Different auto courses are taught each semester. Resetting visual aids/props, moving equipment in and out of storage, and maintaining program NATEF standards all require substantial time and effort.
  - Student advising, tutoring, administrative duties and advising Auto Club all preformed by two faculty and one instructional support associate.



# What resources are being requested to close the loop?

- Potential resources that you might identify:
  - Increase Program faculty.
    - Adjust curriculum to align with NATEF standards in TaskStream.
    - Add course materials to BlackBoard and create online course.
    - Produce video instruction for students.
  - Increase program budget to maintain instructional equipment.
  - Request lapel microphone and video streaming equipment for lab demonstrations.

