

LMC Comprehensive Program Review

Instructional Units

2017-2018

Program/Discipline: Automotive Technology

The following provides an outline of the required elements for a comprehensive unit/program review for Instructional Programs and Units. Upon completion of this report, please upload your document in the unit/program review application data/documents tab.

1. Program Changes

1.1. How have your degree and certificate offerings changed over the last 5 years? (e.g. new programs, discontinued or major changes to existing programs)

A two course diesel program has been added and converted from a 900 course code to a permanent course in the fall of 2017. Alternative fuels and service writing have been offered in a experimental form and will be converted by Fall of 2018.

1.2. What changes are you planning to your degree and certificate offering over the next 5 years? What is the rationale for the anticipated changes? Will these changes require any additional resources?

Several new courses are planned.

- An introductory course designed to serve students entering the program with limited experience and as an articulated course has been written and will be offered in future semesters.
- New Certificates are in process of development to align with new courses and adjustments to the program, including a new cert. for the Diesel courses.
- A revised engine building, hybrid technology, service writing and enhanced engine performance courses are currently working through curriculum and are expected as early as fall of 2018.
- Electric and autonomous vehicles are just beginning to grow or enter the market. At this time we will follow these trends to better anticipate program changes.

While changes to certificates will occur, no changes are planned for AS degree requirements.

All changes are in response to a comprehensive assessment of the program by both advisory members and faculty. All changes are designed to offer a clear pathway as well as early exit pathways for students unable to complete the two plus years required for the program.

2. Degree and Certificate Requirements

Please review the data provided on all degree/certificate completions in your program, including locally approved College Skills Certificates from Fall 2012—Spring 2017.

2.1. For each degree/certificate offered, map a pathway to completion of courses within the major in a maximum of 4 semesters, assuming a maximum of 6-10 units of major courses within a semester. Use the following format:

AS Degree Automotive Technology				
Semester	Semester 1	Semester 2	Semester 3	Semester 4
List Courses Needed for Degree or Certificate in each semester.	Auto 35 (fundamentals) Auto 46 (Automotive Electronics) Auto 37 (engine machining)	Auto 42 (Brakes) Auto 43 (Steering and Suspension)	Auto 40 (diagnosis 1) Auto 41 (diagnosis 2) Auto 48 (Automatic Transmissions)	Auto 55 (Smog) Auto 59 (Manual Transmissions)

3. Frequency of Course Offerings

Please review the data provided on frequency of all courses offered in your discipline in the last 2 years (Fall 2015-Spring 2017).

3.1. If a course has not been offered in the past two years, but is required for a degree or certificate, please explain why it has not been offered, and what the plan is to offer it in the future.

All courses are offered within a two-year cycle.

3.2. If the course is not required for a degree or certificate, is the course still needed in the curriculum or is the department considering deleting it?

3.3. For the next two years, project how frequently your program intends to offer each course. Please provide a rationale for any major changes from the last 2 years that you anticipate.

Course	Estimated Number of Sections Offered by Semester			
	Fall 2018	Spring 2019	Fall 2019	Spring 2020
Auto 35	1	1	1	1
Auto 37	1	0	1	0
Auto 40	1	0	1	0
Auto 41	0	1	0	1
Auto 42	1	1	1	1
Auto 43	1	1	1	1
Auto 46	1	1	1	1
Auto 48	0	0	1	0
Auto 49	1	1	0	1

Auto 55	0	1	0	1
Rationale for any Major Changes				

4. Existing Curriculum Analysis

4.1. Course Outline Updates

Please review the data provided on the status of COORs in your discipline. (Note: This data does not reflect courses submitted after May 2017.) For each COOR that has *not* been updated since Spring 2012, please indicate the faculty member responsible for submitting the updated COOR to the Curriculum Committee by April 18, 2018.

Majority of courses were submitted for update Fall of 2017. (accept those noted)

Course	Faculty Responsible for COOR Update
Auto 37	Jason Dearman
Auto 55	Jason Dearman
Auto 57	Jason Dearman

4.2. Course Offerings/Content

How have your courses changed over the past 5 years (new courses, significant changes to existing courses)?	Fall of 2017 is the beginning of all major changes. These changes include course number changes, adjustments to hours and minor content changes to better reflect technological changes in the automotive industry
How have these changes enhanced your program?	These changes will not be implemented until fall of 2018. Our anticipated enhancements to the program include better navigation and completions for students, improved integration with feeder high schools (articulated courses and dual enrolment) and improved sort term pathways for students unable to complete the auto program in its entirety.

5. New Curriculum Analysis

5.1. If you are creating new degrees or certificates in the next 5 years: (Indicate N/A if no new degrees or certificates are planned.)

What additional courses will need to be created to support the new degree or certificate?	No new Degrees with be created. New certificates will be created to follow the new format of classes. No new courses will be needed to support these certificates, as this is a realignment of current courses.
What significant changes to existing course content would need to be made to support the new degree or certificate?	No Adjustments to content is needed.

6. Advisory Board Update (For all CTE TOP coded programs)

Give an overview of the current purpose, structure, and effectiveness of your Advisory Board. Include: membership, dates of last meetings over the past two years.

Purpose	Structure	List of members	Meeting dates	Effectiveness
To receive input from our industry (Dealers, independent, parts, vendors etc.) regarding future needs for employment. Seek recommendations regarding students and their success and needs in terms of the program. Coordinate internships and industry involvement in the automotive program.	1. Faculty and staff 2. Department Dean 3. Workforce development 4. Local dealer management (dodge, ford, Honda, etc.) 5. Industry partnerships (Hunter, Matco, Subaru U, etc.)	Jason Dearman Earl Ortiz Stan Gazzi Phil Torres Dennis Miller William Mc Curry Ray Ortiz Mike McKee Alto Rechenaur Roy Edmark Chris tastard	Oct. 27 th 2016 Nov. 9 th 2017	Our advisory committee Informs the program on the skill and effectiveness related to students entering the workforce. The program is adjusted accordingly. In recent meetings it was determined skill sets such as manual transmission building have decreased in need while electrical/scantool training has dramatically increased. As a result the auto program has adjusted its future courses to reflect this need.

7. Assessment Effectiveness:

7.1. Course Level Assessment

Please review the data provided on assessment status of courses in your discipline in Cycle 1 (2012-2017).

- 7.1.1. If there were any courses that were not assessed in Cycle 1, please explain why they were not assessed.
 Four courses were listed on the report as not assessed. These courses were assessed in the first cycle by the instructors responsible for these courses. Auto 35,37,42 were assessed in the 13-14 cycle and auto 43 was assessed in the 12-13 cycle. 900 courses were developed for our Diesel program and were just recently converted into a permanently approved course. These two courses will be assessed in the new cycle.
- 7.1.2. If a course was not assessed in Cycle 1 because it was not offered, what is the future of that course?
 a. Delete the course
 b. Market/promote the course to gain enrollments
 c. Other
- 7.1.3. Course level assessment should be meaningful, measurable and manageable. Overall, reflecting on the course level assessment, please rate the degree to which you feel your assessments meet these 3M's.

Meaningful: Ranked as 3

1	2	<u>3</u>
The assessment was not meaningful in collecting data or information that supported course improvement or pedagogical changes.	The intent was understood, but the outcome fell short of meeting the objective of course assessment, which is to improve student learning. The changes to the course or pedagogy to support the course were not clear.	<u>Changes were made to the course content or delivery to improve course effectiveness. The process promoted pedagogical dialog within the department, and changes were adopted accordingly.</u>

Measurable: Ranked as 3

1	2	<u>3</u>
The data collected did not inform teaching and learning.	The assessment produced some measurable information, but created more questions than answers.	<u>Results were straightforward and easy to interpret. The course of action to improve the course or its delivery was clear from the data that was collected.</u>

Manageable: Ranked as 3

1	2	<u>3</u>
Assessment was not manageable.	The assessment process was somewhat manageable, but posed	<u>The assessment was easily scaled across the department</u>

	challenges to implement across the program.	<u>so that full- and part-time faculty could participate with meaningful outcomes.</u>
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7.1.4. What changes in the assessment process itself would result in more meaningful data to improve student learning?

Automotive is unique compared to many courses of study on campus. CSLO's are highly objective and often easy to measure (Can a student find the appropriate torque specification, calibrate the wrench and install the component.). In many cases the answer to our CSLO's are a simple yes the skill is attained or No the skill has not been attained. In our case, few changes would be needed and would likely not yield improved results.

7.1.5. Share an outcome where assessment had a positive impact on student learning and program effectiveness.

Every course includes a CSLO regarding safety within the program. Training is integrated throughout the entire course and is addressed many times through lecture. However we discovered that direct assessments beyond the instructor's observations were in place. In future semester the program is developing a safety training and exam to be administered at the beginning of every course, most likely through the campus Canvas system. We believe this will improve the students understanding of safety procedures and allow faculty to increase their awareness of students that do not fully understand the critical nature of this CSLO.

7.2. Program Level Assessment

7.2.1. In 2016-2017, units engaged in program level assessment. **Please submit all Program Level Assessment Reports using the link provided.** Describe one important thing you learned from your program level assessment.

We discovered our PSLO's were generally a good reflection of our desired outcomes for students in the program. Slight changes were needed to bring them in line with the technology currently permeating the entire industry. We discovered that while our PSLO's were generally good, two of them were redundant and essentially looking at the same outcome in a slightly different way. As a result we combined the duplicative outcomes and developed a clearer more focused set of PSLO's

7.2.2. What was the biggest challenge in conducting program level assessment?

As an overarching outcome we found many times different courses were responsible for fulfilling different parts of the PSLO's. If that courses assessment didn't focus heavily on the component that makes it unique (Diag. 1 is largely responsible for training on scan tool diagnosis) then it may result in limited data when reviewing the program's effectiveness in training to its PSLO's

7.2.3. What resource needs, if any, were identified in your program level assessment?

Our overall assessment was satisfactory and some adjustments will be made. The faculty has not identified any new resources that will be needed for automotive to successfully complete this study in the future.

8. Course Success/Retention Analysis

Please review the data provided on course retention and success, which has been disaggregated by as many elements as district can provide in their SQL Report

One of our college goals as stated in our Integrated Plan is to “Increase successful course completion, and term to term persistence.” Our Equity Plan identifies African- American and low income students as disproportionately impacted in terms of successful course completion. (Foster youth are also disproportionately impacted on this indicator, but numbers are too small to disaggregate by discipline/program) Please indicate how well students in these groups are succeeding in your discipline.

	African-American	Low Income Students	All students in program/discipline
Completion Rate (program/discipline)	83.3% (2016 fall) 96.6% (2017 Spring)	94.7% (2016 fall) 94.4% (Spring 2017)	93.8% (2016 fall) 94.8% (2017 Spring)
Success Rate (program/discipline)	45.8% (2016 Fall) 41.4% (2017Spring)	73.1% (2016 fall) 72.1% (2017 Spring)	71.9% (2016 fall) 75.6% (2017 Spring)

8.1. In looking at disaggregated data on success/retention, is there anything else that stands out?

In nearly all categories success rates have trended up with a few areas that have had minor downward trends. Only one year stands out as an anomaly, Fall of 2015 had a dip in success rates the immediately returned to normal in the following semester. The cause for this is unknown, the semester was a normal semester in terms of schedule and instructors were teaching their normally assigned courses.

8.2. What are some strategies that might help students, particularly African-American, foster youth, and low income students successfully complete courses in your discipline? What resources would be needed to implement these strategies?

The faculty and staff has attempted but has largely been unable to identify the specific issues causing lower success rates in our African American category. Current resources appear to be equally accessed by all students. Additional new resources are likely needed to specifically target this group, however research that provides missing data will be needed to identify their specific needs.

9. Goals

9.1. Review your program’s goals as listed in response to the final question of your 2012-2013 Comprehensive Program Review posted in the Data Repository of the PRST.

<p>Highlight some of the key goals that were achieved over the past 5 years. What were the key elements that led to success?</p>	<p>Four goals were outlined in the 12-13 year cycle our goals were mostly accomplished in the last two years. Including development of a hybrid technology program and an acquiring a Prius for training. A variety of aging equipment has been replaced including Alignment, wheel and tires service machines, computer stations and many other smaller but critical training resources. The proposed service writing course has been taught several times as a 900 and is now moving to an approved COOR for the program.</p>
<p>Were there any goals that did not go according to plan? What were the key elements that impeded the progress on these goals?</p>	<p>Course redesign and a new automotive fuels COOR have been planned but not implemented due to the substantial cost and staffing needs to implement. Fortunately The Strong workforce grant is moving us closer to achieving these goals and are expected to be completed as early as the 19-20 year.</p>

9.2. Consider the College’s Strategic Directions along with our Integrated Planning Goals listed here:

College Strategic Directions 2014-2019	Integrated Planning Goals
<ol style="list-style-type: none"> 1. Increase equitable student engagement, learning, and success. 2. Strengthen community engagement and partnerships. 3. Promote innovation, expand organizational capacity, and enhance institutional effectiveness. 4. Invest in technology, fortify infrastructure, and enhance fiscal resources. 	<ol style="list-style-type: none"> 1. ACCESS: increase access through enrollment of students currently underserved in our community. 2. IDENTIFYING PATHWAYS: Increase the number of students that define a goal and pathway by the end of their first year. 3. COLLEGE-LEVEL TRANSITION: Increase the number of students successfully transitioning into college level math and English courses. 4. PERSISTENCE & COMPLETION: Increase successful course completions, and term to term persistence. 5. EQUITABLE SUCCESS: Improve the number of LMC students who earn associates degrees, certificates of achievement, transfer, or obtain career employment.

	6. LEARNING CULTURE: Enhance staff, faculty and administration’s understanding and use of culturally inclusive practices/pedagogy, demonstrating empathy and compassion when working with students.
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List 3 – 5 longer term (5 year) new goals for your program. For each goal, pick 1 – 2 College Strategic Directions and/or 1 – 2 Integrated Planning Goals to which your new goal aligns.

Goals	Aligned College Strategic Direction(s)	Aligned Integrated Planning Goal(s)
Goal 1: Complete the integration of our industry partners and their curriculum as a component of the automotive program. (Subaru U, AUDI and Fiat/Chrysler	2. Strengthen community engagement and partnerships.	2. IDENTIFYING PATHWAYS: Increase the number of students that define a goal and pathway by the end of their first year. 4. PERSISTENCE & COMPLETION: Increase successful course completions, and term to term persistence.
Goal 2: Complete the curricular redesign and alignment to better provide students with early off-ramp options to employment and clearer pathways for those seeking A/S and cert. completion. Identify additional funding sources that will be necessary to equip the program for these courses with the resources needed for student success here and beyond the program.	3. Promote innovation, expand organizational capacity, and enhance institutional effectiveness. 4. Invest in technology, fortify infrastructure, and enhance fiscal resources.	1. ACCESS: increase access through enrollment of students currently underserved in our community. 2. IDENTIFYING PATHWAYS: Increase the number of students that define a goal and pathway by the end of their first year. 4. PERSISTENCE & COMPLETION: Increase successful course completions, and term to term persistence. 5. EQUITABLE SUCCESS: Improve the number of LMC students who earn associates degrees, certificates of achievement, transfer, or obtain career employment.
Goal 3: Expand course offerings to meet the growing demand not only within the automotive industry but other sectors seeking workers with technical/mechanical skills. (BART, Drill Tech, Industrial maintenance, etc.)	2. Strengthen community engagement and partnerships. 3. Promote innovation, expand organizational capacity, and enhance institutional effectiveness.	4. PERSISTENCE & COMPLETION: Increase successful course completions, and term to term persistence. 5. EQUITABLE SUCCESS: Improve the number of LMC students who earn associates degrees, certificates of achievement, transfer, or obtain career employment.

Goal 4: Train current and future faculty and staff members for new and emerging sectors in the automotive industry. With a specific focus on electric vehicles and autonomous self-driving vehicles.	3. Promote innovation, expand organizational capacity, and enhance institutional effectiveness.	5. EQUITABLE SUCCESS: Improve the number of LMC students who earn associates degrees, certificates of achievement, transfer, or obtain career employment.
Goal 5:		

OPTIONAL

9.3 Resource needs to meet five-year goals

Faculty/Staff Resource Request			
Department/Unit Goal - Reference #		Strategic Objective - Reference #	
Automotive/Goal #3		4 and 5	
Department/Unit Name		Position Name/Classification	FTE
		Automotive instructor/Faculty	1
Position Type	Funding Duration	Funding Source	Est. Salary & Benefits
<input checked="" type="checkbox"/> Faculty R/T <input type="checkbox"/> Classified <input type="checkbox"/> Manager <input type="checkbox"/> Student	<input checked="" type="checkbox"/> On-going/Permanent <input type="checkbox"/> One-time	<input checked="" type="checkbox"/> Operations (Fund 11) <input type="checkbox"/> Other <input type="text"/>	
Justification:			
LMC automotive is adding a new introductory class (two sections) designed to better prepare students entering the program and to provide core skills that are no longer a component of the majority of high school curriculum. In addition we will be adding a dual enrollment (auto engines) course with our feeder schools, adding hybrids and service writing to our normal fall/spring cycle and will be offering a cap stone advanced engine, fuel, mechanical, and ignition course with corresponding certificates. We are currently maxed out on load with full time instructors over 135%+ every semester and all adjuncts working every semester. When fully implemented one fulltime faculty will not be sufficient, at least one or two more adjuncts will be needed to fully realize our goals.			

Operating Resource Request	
Department/Unit Goal - Reference #	Strategic Objective - Reference #
Automotive/Goals 2 and 3	Goal 5
Department/Unit Name	Resource Type
	<input checked="" type="checkbox"/> Equipment <input type="checkbox"/> IT Hardware/Software <input checked="" type="checkbox"/> Supplies <input type="checkbox"/> Facility Improvement

		<input checked="" type="checkbox"/> Service/Contract	<input type="checkbox"/> Other
General Description		Est. Expense	
<p>Increase in supplies budget. Additional and new courses will require additional ongoing funding. Hybrid safety supplies including High voltage gloves must be replaced yearly at a cost of \$500 for a set of 2. Both diesel courses require fuel (10 to 15 gallons per semester) at \$200 per year plus component replacement and consumables on engines students train with (\$300 per year). Second section auto 110 offered as a dual enrollment will require gaskets, oils, coolants, etc. To properly maintain and operate the course (\$400 per year). Costs related to a cap stone level (Adv. Engine performance) and two new sections of our entirely new introductory course are as of yet unknown but are anticipated to require consumables like oils, fuels, refrigerants, non-reusable seals and gaskets (\$200-300 per class per semester). In two years our service information (prodemand) contract will expire and we will be required to pay the \$1500 a year to maintain this subscription.</p>		<p>\$4700-\$5500 increase to program supplies budget</p>	
Justification:			
<p>The growth of the program has squeezed or department supplies/equipment budget which has been unchanged in over a decade. Diesel courses require fuel/engine components and purchase/maintenance of more severe duty tools. All new courses will require a modest amount of funds for consumables and increased maintenance on lab equipment. Historically lab maintenance overruns have come from the auto supplies budget, however due to a stagnant budget within a growing program maintenance has been deferred often leading to increased equipment down time and ultimately reduced quality of lab training. Industry wide has converted to online repair manuals vs. paper book manuals. Reverting to the retired paperback model would seriously jeopardize and undermine the instructional quality of the program.</p>			

Professional Development Resource Request	
Department/Unit Goal - Reference #	Strategic Objective - Reference #
Automotive/Goal 3	Goal 5
Department/Unit Name	Resource Type
	<input checked="" type="checkbox"/> Conference/Meeting <input type="checkbox"/> Materials/Supplies <input type="checkbox"/> Online Learning <input type="checkbox"/> IT Hardware/Software <input type="checkbox"/> Other
General Description	Est. Expense
<p>Yearly update training with our partner manufactures (Subaru u, Audi, Fiat/Chrysler) for all instructional faculty. Continued participation in the SEMA education program on a yearly basis. (Including both Faculty and program supporting staff).</p>	<p>Factory training \$2000 SEMA education (faculty and staff) \$6,500</p>
Justification:	
<ul style="list-style-type: none"> • Due to the rapid technological evolution in the automotive industry, Manufacture partnerships and NATEF requirements all auto faculty are strongly encouraged and in some cases required to participate in update training. • SEMA provides access across the entire automotive industry allowing faculty to seek out new and emerging industries within auto. SEMA provides an opportunity for up to 15 students to accompany the faculty for this week long event and participate in specialized training, interact with manufactures directly and expand their knowledge and exposure in the industry. 	

