**Course Syllabus 2015-2016**

**Lake Career & Technical Center**

***Developing Skills for a Lifetime***

**Automotive Technology**

**Instructor Name & Contact Information:**

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**Prerequisites:** Although not required it ispreferable that student will have completed Automotive Electrical, Engines & Diagnostics course.

**High School Credits:** 3.0 **Grade Levels:** 11th & 12th Grade

**Integrated Academic Credit Available:** One unit of elective Math credit will be awarded to students completing at least four credits in a career and technical education program and upon successful completion of the math criteria established.  A value of .5 credit may be awarded at the end of each year.

**Industry Recognized Credential:** Automotive Service Excellence (ASE) student certification is available upon satisfactory completion of testing criteria.

**Program Accreditation:**  National Automotive Technical Education Foundation (NATEF)

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**Course Rationale:** The goal of this class is to give the students a solid foundation in automotive basics, thus providing insight as to the future education and training requirements of today’s automotive technician.

**Course Description:** The Automotive Technology course will follow the Maintenance and Light Repair (MLR) standards of ASE. Students will cover theory of operation and diagnostic strategies for the following vehicle areas: Engine Repair, Automatic Transmission and Transaxle, Manual Drive Train and Axles, Suspension and Steering, Brakes, Electrical/Electronics Systems, Heating and Air Conditioning, and Engine Performance. In addition to developing technical skills, students will also have experience training in personal and shop safety, tools and equipment, preparing vehicle for service and for customer, and an opportunity to develop the workplace and soft skills necessary to seek out and pursue automotive employment. This program is a part of SkillsUSA, and upon successful completion of the course will have the opportunity to become ASE student certified.

**Power Standards/Course Objectives: Will need to include add’l power standards to cover all 8 areas of ASE to “meet” the MLR standard.** My recommendations for coding include the following: ATER – Engine Repair, ATAT – Automotive Transmission & Transaxle, ATMD – Manual Drive Train & Axles, ATHA – Heating & Air Conditioning. Within each of these ‘overarching’ Power Standards you can then “break it down” to 1, 2, 3, etc. *Example below (note – can have more than 2 or 3 – just showing you a recommendation on how this would look) :*

9. ER – Engine Repair

a. ATER1 –

b. ATER2 –

c. ATER3-

10. AT – Automotive Transmission and Transaxle

a. ATAT1 –

b. ATAT2 –

11. MD – Manual Drive Train and Axles

a. ATMD1 –

b. ATMD2

12. HA – Heating and Air Conditioning

a. ATHA1 –

b. ATHA2 –

c. ATHA3 –

13. Adult Student Power Standards (took this from #9 below)

a. ATA1 Perform a road force balance

b. ATA2 Use diagnostic scanner on ABS system

c. ATA3 Perform fuel system cleaning

1. S - Safety

a. ATS1 Shop Safety

b. ATS2 Tool Equipment Safety

2. TM - Technical Math

a. TM1a Fractions

b. TM1b Measurements

c. TM1c Integers

d. TM1d Ratios

3. PE - Business, Management and Technology

a. PE1a Demonstrate ability to complete application

b. PE1b Demonstrate the ability to develop a resume

c. PE1c Demonstrate ability to answer interview questions

4. WE - Work Ethics and CTSO

a. WE1a Scoring Guide

b. WE1b Student organization participation

5. SS - Steering and Suspension

a. ATSS1 Diagnose and repair steering systems

b. ATSS2 Diagnose and repair suspension systems

c. ATSS3 Diagnose and repair wheel alignment issues

d. ATSS4 Diagnose and repair wheels and tires

6. E -Brakes

a. ATB1 Diagnose hydraulic system

b. ATB2 Diagnose and repair drum brakes

c. ATB3 Diagnose and repair disc brakes

d. ATB4 Diagnose and repair power assist units

e. ATB5 Demonstrate the ability to apply mathematics to principals of hydraulics

7. E- Electronics

a. ATE1 Diagnose general electrical system

b. ATE2 Diagnose Battery

c. ATE3 Diagnose starting system

d. ATE4 Diagnose charging system

e. ATE5 Diagnose lighting system

8. EP – Engine Performance

a. ATEP1 Diagnose general engine problems

b. ATEP2 Diagnose computerized engine controls

c. ATEP3 Diagnose ignition system

d. ATEP4 Diagnose fuel, air and exhaust systems

9. A – Adult Student Power Standards (according to website, these codes are not showing, so let’s move these to be the final list of power standards for Auto Tech)

a. ATA1 Perform a road force balance

b. ATA2 Use diagnostic scanner on ABS system

c, ATA3 Perform fuel system cleaning

**Outcomes/Goals of Course:** The goals of this course are to provide the student with the following knowledge:

1. A basic understanding of the different automotive systems

2. The types of careers in the automotive industry

3. Job seeking and retention skills

4. Tools related to the industry

5. Industry related math, reading and research skills.

**Careers & Earnings:** Students can use the knowledge gained in this course to pursue a variety if careers in the Automotive Industry. Brief examples of some of the career are: Automotive Technician, Service Manager, Service Advisor, Automotive Parts Sales and Distribution, Automotive Equipment Sales and Distribution. These jobs are available in Automobile Dealerships, Independent repair stations and government/corporate fleet maintenance facilities. The average salary can vary widely depending on position, skill level, work load and company. The average salary range can be expected to be between $35,000 - $55,000 per year.

**Resources:** Modern Automotive Technology 8th Edition, James Alderman

All Data Information System

IdentiFix Information System

NATEF Task List

**Materials & Supplies Needed:** Safety glasses, closed toed shoes and long pants are required to participate in lab activities. Recommend student have Coveralls and Mechanics gloves but these are not required for lab participation. Information will be provided via hand out to students at the beginning of semester.

**Evaluation:** Student knowledge and mastery will be evaluated by Assignments, Quizzes, Chapter tests, Lab/Shop Activities, Work Ethic and Participation.

Students are able to view their grades and attendance via the Student Portal. A link has been provided on the LCTC webpage -- <http://camdentonschools.schoolwires.net/lctc>

**Grading Scale:** Total points accumulated from all assignments will be used to establish the semester grade.

A 95% - 100% C 73% - 76%

A- 90% - 94% C- 70% - 72%

B+ 87% - 89% D+ 67% - 69%

B 83% - 86% D 63% - 66%

B- 80% - 82% D- 60% - 62%

C+ 77% - 79% F 59% and below

**CTSO:** Students are strongly encouraged to be members of Skills USA where students will develop leadership skills and be able to compete within their program area of study. Competitions can occur at the district, state, and national levels. Student dues are $15 and can be paid to the instructor. All “finalized” CTSO memberships are due before February 15.

**Classroom & Student Expectations:**

1. Please respect all individuals in classroom.

2. Please follow directions and posted rules in class and lab area at all times.

3. Students are expected to take notes during lecture and demonstrations.

4. Students are expected to be attentive and actively participate in class discussions.

5. As a responsible student, you are expected to finish any project that you begin.

6. Safety is of primary importance in lab and appropriate protection equipment will be worn at all times.

7. Please return all tools and equipment to proper storage area when not in use.

8. Ask permission to leave the classroom or lab area.

9. Please be courteous when working around other students tools or projects.

10. If you are absent it is your responsibility to get in contact with me to determine make-up assignments.