San Clemente Automotive Technology Partnership Academy

 COURSE SYLLABUS

 Fall 2018

INSTRUCTOR: W.CAESAR

CLASSROOM: S-10 & S-11

OFFICE HOURS: 9:00am-3:00pm Mon-Fri. PHONE: (949) 366-9843

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CURRICULLM TEXT: Modern Automotive Technology 8th Edition By, James E. Duffy

The 2015 edition of Modern Automotive Technology is organized around the ASE automobile test areas and correlated to the NATEF Task List, bringing the skill level of education to current industry standards.

1. DESCRIPTION

**Consumer Automotive** (10): Emphases is on the development of automotive basic fundamentals. Topics include shop safety, shop practices, automotive history and basic chassis construction, proper handling and care of basic hand tools, proper operating techniques of power tools and equipment. Students will explore the many aspects of the automotive industry as a career as well as consumer awareness and the basic operating principles of major components and systems of the automobile, that include the engine, transmission, brakes systems, steering, suspension and vehicle maintenance schedules. Course will include Academic and Practical (hands on) applications via modules and shop vehicles.

**Automotive Technology (11)**; Emphases is on the development of basic foundational mechanical skills acquired from the first year of the Automotive Academy. Topics include shop safety, specialized tool instruction, as well as further instruction in the components and the increased operating parameters of all major systems. Other topics covered include fuel systems, ignition systems, starting and charging systems as well as engine rebuilding, transmission operation, electrical and lighting systems and wheel alignment.

**Automotive Advanced Diagnostics and Troubleshooting (12)**; The third year course is designed to provide Automotive students with increased entry level skills in diagnostics, and critical thinking skills. Competencies include diagnosing, locating and repairing systems and major components. Topics include career preparation, computer systems operation, and schematic diagram reading. Students will be instructed in advanced troubleshooting procedures and the operation of advanced diagnostic equipment. Students will have increased opportunities to fine tune their skill level on many different automobiles. All senior automotive academy students will have an opportunity to try-out for a position on the prestigious San Clemente High School Automotive Academy Troubleshooting Competition Team. Automotive students at the conclusion of the course should have obtained the skills and certifications, for an entry-level career in the automotive industry.

1. ORGANIZATION

This is a lecture-lab course in which topics are presented by the instructor. All topics are broken down and presented in a kinesthetic learning process format. The use of e-curriculum is provided for the academic portion of the course, which will emphasize the foundational points as well as key aspects of the course of study. Multi-media programing will be facilitated to secure a complete visual understanding of the topics instructed. After the period of instruction, students will complete periodic tests and or quizzes to confirm their understanding in the area of study has been learned. Students will move on to the next level of understanding in the auto shop/lab for a practical application relating to the topic or course of study. Students are required to take a comprehensive mid-term as well as a final exam at the end of each semester.

1. COURSE OBJECTIVES
2. To introduce students to history and operation of the many facets of the automotive industry.
3. To introduce students to the basic mechanical systems and construction of the automobile.
4. To introduce students to safety practices, basic hand tools, power tools and equipment used in the automotive industry.
5. To orient students to the range of skill levels needed in the automotive career industry, critical thinking, mechanical, practical, computer, diagnostic, academic, communication, career awareness, job performance, and personal as well as customer property security.
6. To provide students with opportunities to develop learned skills and certifications that will award future technicians a rewarding career in the automotive industry or other mechanical related industry.
7. GRADING PLAN
8. Academics/Practical 45%
9. Test/Quizzes 25%
10. Final exams 20%
11. Attendance 10%

 Total= 100%

Also, anyone who has more than eight class long, unexcused absences will receive an “F” grade for the course. Keep in mind that this is an occupational course, and attendance is important here just as it will be in the employment for which this course in part designed to prepare you for.

1. CLASSROOM RULES OF CONDUCT
2. No cell phones or radios are allowed in class
3. Respect to instructor/staff and other students at all times
4. Food/Energy drinks not permitted in class or auto shop lab, beverages are permitted in class only, this includes lunches, gum, candy, etc. whether opened or not.
5. Class time is expected for instructional or academic purposes. Lab/Shop is expected for lab work only; lab time is not free time or social time. Attendance and concerted work are required. Work at home should not substitute for work during lab periods.
6. All assignments must be done by the designated time, no late work.
7. Safety must be exercised at ALL TIMES during the Automotive Program sessions.

Failure to comply with the rules of the program will result in disciplinary actions, such as behavior contract, referrals, suspensions or removal from the program.

1. SUGGESTIONS FOR SUCCESS

For most students this will not be a “difficult” course. However, there will be probably be some students that did well in academic courses where information was most important and who will be surprised at the relative difficulty of this course where manual skills and visualization are most important. Don’t worry! I will be observing your progress, and the amount of effort you put forth to obtain the skills instructed is the most important task for your success in the program, DUE YOUR BEST!

1. TENATIVE SCHEDULE: Subject to change at instructor’s decision, depending on skill level and or dynamics of the class.

SEPTEMBER:

Automotive History

Automotive Information

Automotive Safety

Automotive Careers

ASE Certification

Vehicle Maintenance

Practical Application

OCTOBER:

Automotive Tools and Equipment

Tool Rules, Tool Storage

Toolbox Organization

Wrenches, Sockets

Pliers, Hammers, Screwdrivers

Holding Tools, Cleaning

Power Tools, Electrical Tools

Hydraulic Tools, Air Tools

Shop Equipment/Shop Layout

Practical Application

NOVEMBER:

Automotive Construction

Frame, Body, and Chassis

FWD, RWD, AWD, FWD

Intro to Engines

Engine Fundamentals

Engine Operation

DECEMBER:

Engine Bottom End

Block, Crankshaft

Engine Main Bearings

Engine Rod Bearings

Flywheel, oil seals

Connecting Rods, Bearings

Pistons, Rings, Pins

Practical Application

JANUARY:

Engine Top End

Cylinder Head

Valve Train/ Timing Assemblies

Engine Classification

Two Stroke/Four Stroke Cycle

Lubrication Systems

Engine Cooling

Practical Application

FEBERARY:

Electrical Fundamentals

Batteries

Starting System

Charging System

Lighting System

DVOM Operation

Practical Application

Fuel Systems

Fuels/Alternative

Ignition system

March:

Intake/Exhaust Systems

Brake Systems

ALB Systems

Tires/Wheels

Tire Installation

Tire Equipment

Tire Balancer

Practical Applications

APRIL:

Suspension Systems

Shocks/Struts/Springs

Spring Break…

Steering Systems

Wheel Alignment

Practical Applications

Restraint Systems

Seatbelts

Airbags

May:

Heating and Air Conditioning

Climate Controls

Clutch Systems

Manual Transmission

Manual Transaxle

Drivelines

Drive Axles

Practical Applications

JUNE:

Differential Systems

Axles

Automatic Transmission

Automatic Transaxle

Final Exams