Course Syllabus

DEMR 2334

Advanced Tune-up/Troubleshooting

Diesel Service Technology

Industrial Technology

Technical Education Division

SOUTH PLAINS COLLEGE

Fall 2019

Campus Listed as Appropriate to Class:

Levelland

COURSE SYLLABUS
COURSE TITLE: Advanced Tune-up and Troubleshooting
INSTRUCTOR: James Salzman
OFFICE NUMBER; 204
AND PHONE/E-MAIL: Office #204, Phone ext. 2294, jsalzman@southplainscollege.edu
OFFICE HOURS: Published on 12th class day
SOUTH PLAINS COLLEGE IMPROVES EACH STUDENT'S LIFE
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I. GENERAL COURSE INFORMATION:

a. Course Description: The purpose of this course is to provide the student with an introduction to how to successfully troubleshoot, diagnose, and repair diesel engines/vehicles.

b. Course Learning Outcomes: The student understand how to successfully troubleshoot, diagnose, and repair diesel engines/vehicles.

c. Course Competencies: This course uses established industry competencies. Upon completion of this course the student must demonstrate the ability to:

i. Troubleshoot engine problems successfully
ii. Show you can use diagnostic software successfully
iii. Find and fix bugs in diesel engines systems and vehicles

d. Academic Integrity: (see current college catalog for policy)

e. SCANS and Foundation Skills: C1 through C20 and F1 through F17. A description of these SCANS skills is printed on the back of the syllabus cover sheet for reference.

f. Verification of Workplace Competencies: All graduating students in the diesel service technology program will have a comprehensive, exit review exam administered in order to comply with the state requirement for a "capstone learning experience".

II. SPECIFIC COURSE/INSTRUCTOR REQUIREMENTS:

a. Textbook and Other Materials: *Fundamentals of Medium/Heavy Duty Diesel Engines*, by Gus Wright, published by Jones & Barlett Learning – CDX Automotoive, ISBN 9871284067057; tools per provided list
b. Textbook and Other Materials: *Fundamentals of Medium/Heavy Duty Commercial Vehicle Systems*, by Gus Wright and Owen C. Duffy, published by Jones & Barlett Learning – CDX Automotive, ISBN 9781284041163

b. Attendance Policy: (see current college catalog for policy). Additionally student that attains 3 absences, will be administratively dropped from all classes. An absence will be issued when a student attends less than one half (1/2) the scheduled time, for that particular day. Three (3) tardy circumstances are equal to one absence. A tardy circumstance will also occur for the following:

1. Not staying on task 1 tardy

2. Improper use of electronic devices (during lab time) 1 tardy
3. Not using safety glasses in the lab 1 Absence
4. Unsafe lab area conditions 2X tardy
a. Not operating equipment or handling components safely
b. Not maintaining your lab area clean of spills or tripping hazarders
5. Disrupting class 2 X tardy
a. Horse-playing
b. Profanity
c. Allowing other students to disrupt your lab time
d. Using ear buds/head phones during class
e. Any disruptive behavior

7. Sleeping in Class or Lab 1 Absence
a. The inability to stay awake in class or lab is an indication that you are too tired to function safely in our environment, and you will be dismissed for safety reasons. This is considered an absence since you are not present.

b. Students are responsible for all work covered during absences from class, even in cases in which they are able to satisfy the instructor that the absence was unavoidable. When an unavoidable reason for class absence arises, such as illness, an official trip authorized by the college or an official activity, the instructor may permit the student to make up work missed. In such case, it is the student's responsibility to complete work missed within a reasonable period of time as determined by the instructor.

c. Assignment Policy: Assignments turned in after the assigned due date will not be accepted and will result in a zero grade for that assignment. Reasonable circumstances for a late assignments may be accepted with a penalized grade with the instructor’s permission..

d. Grading Policy/Procedure and/or methods of evaluation: Exams will be given periodically throughout the semester at the instructor's discretion. Lab assignments will be given and completed at the assigned dates. At the end of the semester, a comprehensive final exam will be given. These are three categories taken into consideration when computing the final semester grades:

i. Classroom grades: These grades will constituent 20% of the final semester grade. This will include tests, quizzes, and assignments.
1. 3% from quizzes and assignments
2. 17% from major tests
3. Tutoring – Students who do not pass their first exam will be required to attend three hours of tutoring each week until they pass their next exam. This is a course requirement and will be reflected in the course grade.
ii. Lab grades: These grades will constituent 60% of the final semester grade. Two lab benchmark tests will be completed over the semester, along with lab projects and task sheets which must be completed by the assigned dates.

a. All task sheets (appropriate to troubleshooting project) must be completed before starting troubleshoots.
Lab benchmark test grading policy:
i. It will contain an unlimited number of possible faults/bugs (problems) with the project.
2. Deduction from lab projects **per infraction**
a. **Late or not showing up for end of semester cleanup will result in a zero for your lab grade**
i. Engine not started 100%
ii. Engine running out of specified parameters
1. Low idle not set 20%
2. High idle not set 20%
iii. Cylinder temperature out of specifications
1. Temperature specification will be determined from highest or lowest cylinder 20%
2. Erratic engine operation 30%
3. Incorrect torque 30%

4. Incorrect horsepower 30%
5. Diesel Fuel or Engine oil leak
a. Major leak 100%
i. More than one drop per 1 minute
b. Minor leak 30%
i. Less than one drop per 1 minute
6. Missing bolts per infraction 10%
7. Replacement of a properly functioning component 30 %
8. Brackets missing or not fastened 10%
9. Engine knock of any kind 100%
10. Improperly filling out work order 5%
11. Not finding all faults (problems or bugs) 30%
a. Example: Engine running well, but not having the specified torque.
b. Damaging lab projects will result in a deducted grade for projects as follows:
i. Damaged, but repaired correctly 5%
ii. Damaged, required part replacement 10%
iii. Damaged, not repairable 20%
iv. Damaged, abandoned 100%
c. NOTE: When you apply for a signature on a project, you will be randomly, verbally, quizzed on your knowledge of the project, procedures, ect. Inability to answer questions will result in an incomplete until you comply with the research assigned at that moment.
3. The first lab troubleshoot will occur at mid-semester.
a. Students not passing, will be advised on the appropriate action that must be taken

iii. Final exam: At the end of the semester, a final exam will be given and the grade earned will count as 20% of the final semester grade.
1. Final test will be comprehensive.

iv**. GRADE LEVELS: There are four levels of attainable grades in the diesel technology program. The levels are A - (90 and above); B - (80-89); C - (70-79); F - (69 and below). This grading policy follows industry standards used in certification testing.**

g. HAZARDOUS MATERIALS: Students will come in contact with chemicals and other materials, which come under the "Hazardous Material" classification as defined by Title 83, Article 5182b of the Hazard Communication Act. Material Safety Data (MSD) information will be posted in the lab area. Safety information will be given and shown in class before the safety test. (Examples of materials: used engine oil, fuel, antifreeze, etc.)

III. COURSE OUTLINE
a. Learn how to troubleshoot
b. Learn how to use diagnostic software
c. Learn how to diagnose vehicle problems
d. Demonstrate you can successfully find and repair problems

IV. ACCOMMODATIONS (Also see current college catalog)
a. Levelland Campus & Reese Campus
i. Students with disabilities, including but not limited to physical, psychiatric, or learning disabilities, who wish to request accommodations in this class should notify the Disability Services Office early in the semester so that the appropriate arrangements may be made. In accordance with federal law, a student requesting accommodations must provide acceptable documentation of his/her disability to the Disability Services Office. For more information, call or visit the Disability Services Office at Levelland (Student Health & Wellness Office) 806-716-2577, Reese Center (Building 8) 806-716-4675, or Plainview Center (Main Office) 806-716-4302 or 806-296-9611.Reese Center and the Lubbock Center

b. In this class, the teacher will establish and support an environment that values and nurtures individual and group differences and encourages engagement and interaction. Understanding and respecting multiple experiences and perspectives will serve to challenge and stimulate all of us to learn about others, about the larger world and about ourselves. By promoting diversity and intellectual exchange, we will not only mirror society as it is, but also model society as it should and can be.

c. If you are pregnant or have given birth within six months, Under Title IX you have a right to reasonable accommodations to help continue your education. To activate accommodations you must submit a Title IX pregnancy accommodations request, along with specific medical documentation, to the Director of Health and Wellness. Once approved, a notification will be sent to the student and instructors. It is the student's responsibility to work with the instructor to arrange accommodations. Contact Chris Straface, Director of Health and Wellness at 806-716-2362 or email cstraface@southplainscollege.edu for assistance.

IX. CAMPUS CARRY
i. Campus Concealed Carry - Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in South Plains College buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and South Plains College policy, license holders may not carry a concealed handgun in restricted locations. For a list of locations, please refer to the SPC policy at: (http://www.southplainscollege.edu/human_resources/policy_procedure/hhc.php) Pursuant to PC 46.035, the open carrying of handguns is prohibited on all South Plains College campuses. Report violations to the College Police Department at 806-716- 2396 or 9-1- 1
Please refer to Senate Bill 11 and South Plains College's campus carry policy if you choose to exercise your rights to carry on campus. Please keep in mind when choosing to carry the nature of the work in the lab and secure your weapon in a manner that will prevent it from interfering with your work.

DST Classroom and Lab Area Rules

1. Always follow safety rules. They are for your protection.

2. Personal Protection Equipment: Safety glasses will be properly worn at all times. Acceptable lens colors: clear, yellow colored lenses. Mirrored or dark lenses will be permitted for outside work only. Sunglasses will not be allowed indoors or outdoors. All safety glasses must be "ANSI Z-87-1" or better certified. Safety toe footwear are required and will be worn at all times. Non-compliance will result in dismissal for the day with an absence.

3. Service bay doors will be either fully raised or lowered.

4. No tobacco products are allowed in campus buildings, and smoking must not be done within 25 feet of the building, per campus policy. This policy includes vaping.

5. No shorts to be worn in the lab areas. Clothing should well-fitting and appropriate for work. Clothing with obscene, profane or otherwise inappropriate language or images not be allowed.

6. No parking is allowed inside the south fenced in area.

7. The DST program adheres to the South Plains College zero tolerance policy for controlled substances. Should an instructor suspect a student is under the influence of drugs or alcohol while on campus, they will remove the student from class and/or lab and the appropriate disciplinary measures will be enforced.

8. All electronic devices will be used only for course related work. Inappropriate use of electronic devices, including cell phones, can result in your dismissal for the day with an absence.

9. You are required to have your tools to be able to participate in class. Talk to your instructor if this is a problem.

10. Do not store South Plains College tools, equipment or project parts in your toolbox. If you do put SPC property in your box we can and will use any means necessary to open your box if you are not present. While your box is present in our facility, it is subject to search at any time at instructor's discretion. We are not responsible for any damage or losses that may occur due to this policy. You are welcome to register a spare key with your instructor for the semester to avoid such situations.

11. In accordance with Texas Commission on Environment Quality (TCEQ), there are to be no open or unlabeled containers in the lab or classroom areas. Only small quantities may be held in open containers, which must be labeled and currently in use.

12. All SPC property, including equipment keys and tools, must be put away at class clean up. You are responsible for putting away all your personal tools, sorting equipment neatly and disposing of all trash daily.

SCANS COMPETENCIES

C-1 **TIME**--Selects goal--relevant activities, ranks them, allocates time, and prepares and follows schedules.
C-2 **MONEY**--Uses or prepares budgets, makes forecasts, keeps records, and makes adjustments to meet objectives
C-3 **MATERIALS & FACILITIES**-Acquires, stores, allocates, and uses materials or space efficiently.
C-4 **HUMAN RESOURCES**--Assesses skills and distributes work accordingly, evaluates performances and provides feedback.

INFORMATION--Acquires and Uses Information

C-5 Acquires and evaluates information.
C-6 Organizes and maintains information.
C-7 Interprets and communicates information.
C-8 Uses computers to Process information.

INTERPERSONAL--Works With Others

C-9 Participates as members of a team and contributes to group effort.
C-10 Teaches others new skills.
C-11 Serves clients/customers--works to satisfy customer's expectations.
C-12 Exercises leadership--communicates ideas to justify position, persuades and convinces others, responsibly challenges existing procedures and policies.
C-13 Negotiates-Works toward agreements involving exchanges of resources resolves divergent interests.
C-14 Works with Diversity-Works well with men and women from diverse backgrounds.

SYSTEMS--Understands Complex Interrelationships

C-15 Understands Systems--Knows how social, organizational, and technological systems work and operates effectively with them
C-16 Monitors and Correct Performance-Distinguishes trends, predicts impacts on system operations, diagnoses systems' performance and corrects malfunctions.
C-17 Improves or Designs Systems-Suggests modifications to existing systems and develops new or alternative systems to improve performance.

TECHNOLOGY--Works with a variety of technologies

C-18 Selects Technology--Chooses procedures, tools, or equipment including computers and related technologies.
C-19 Applies Technology to Task-Understands overall intent and proper procedures for setup and operation of equipment.
C-20 Maintains and Troubleshoots Equipment-Prevents, identifies, or solves problems with equipment, including computers and other technologies.

FOUNDATION SKILLS

BASIC SKILLS--Reads, writes, performs arithmetic and mathematical operations, listens and speaks

F-1 Reading--locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules.
F-2 Writing-Communicates thoughts, ideas, information and messages in writing, and creates documents such as letters, directions, manuals, reports, graphs, and flow charts.
F-3 Arithmetic--Performs basic computations; uses basic numerical concepts such as whole numbers, etc.
F-4 Mathematics--Approaches practical problems by choosing appropriately from a variety of mathematical techniques.
F-5 Listening--Receives, attends to, interprets, and responds to verbal messages and other cues.
F-6 Speaking--Organizes ideas and communicates orally.

THINKING SKILLS--Thinks creatively, makes decisions, solves problems, visualizes, and knows how to learn and reason

F-7 Creative Thinking--Generates new ideas.
F-8 Decision-Making--Specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative.
F-9 Problem Solving--Recognizes problems and devises and implements plan of action.
F-10 Seeing Things in the Mind's Eye--Organizes and processes symbols, pictures, graphs, objects, and other information.
F-11 Knowing How to Learn--Uses efficient learning techniques to acquire and apply new knowledge and skills.
F-12 Reasoning--Discovers a rule or principle underlying the relationship between two or more objects and applies it when solving a problem.

PERSONAL QUALITIES--Displays responsibility, self-esteem, sociability, self-management, integrity and honesty

F-13 Responsibility--Exerts a high level of effort and preservers towards goal attainment.
F-14 Self-Esteem--Believes in own self-worth and maintains a positive view of self.
F-15 Sociability--Demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings.
F-16 Self-Management--Assesses self accurately, sets personal goals, monitors progress, and exhibits self-control.
F-17 Integrity/Honesty--Chooses ethical courses of action.