

# **COURSE SYLLABUS**

# **Diesel Engine Testing and Repair I**

DEMR 1410 Number

<u>2 - 5 - 4</u> Lecture - Lab - Credit

> NONE Prerequisite

This syllabus has been reviewed and is current on the date indicated.

Prepared By

Date

Gary G. Bone

02/09/2012

Reviewed By

Division Director/Designee

Date

#### I. Instructor Information

Name: Gary G. Bone	Phone: 325-235-7363
Campus Office: Bld 4DSM Rm 102	email: gary hone@tstc.edu
Campus Office. Did. 4D5Wi Kill. 102	enun. gary.oone@iste.edu
Office Hours: MonFri. 8:00-5:00	Advisement Hours MonFri. 8:00-5:00
Department Chair: Mark Koslan	Chair email: mark.koslan@tstc.edu

# II. Class Times, Location

Mon, Tue:	9:00-11:55	Building: 4DSM	Room 104	Lecture
Mon, Wed:	1:00-4:55	Building: 4DSM	Room 116	Laboratory
Wed, Thu	9:00-11:55	Building: 4DSM	Room 116	Laboratory

#### **III.** Program Outcomes

- A. The DET graduate will be able to effectively communicate both written and verbally throughout the process.
- B. The DET graduate will possess the knowledge in theory and operations to effectively diagnose problems.
- C. The DET graduate will be able to maintain and repair equipment effectively.
- D. The DET graduate will employ safety practices when communicating, diagnosing, maintaining, and repairing diesel equipment.

#### **IV.** Course Description & Introduction

An introduction to testing and repairing diesel engines including related systems specialized tools.

# V. Learning Outcomes

The student will:

- A. Identify engine parts
- B. Inspect engine parts
- C. Test and measure engine parts
- D. Disassemble engine parts
- E. Reassemble engine parts

#### VI. Assessment Methods & Grading Policy

Lab	40%
Exams	40%
Attendance	20%

- A. Lab- This course is hands-on intensive and therefore lab exercises are an integral part of the course.
- B. Homework or assignments may be given to enhance the understanding of lecture material.
- C. Exams will cover course material that has been presented up to test date.
- D. Class participation- all students will be graded on participation in class discussion and presence in class. Students whose absences exceed 15 percent of the scheduled Lecture and Lab sessions will not receive a passing grade for the course.

A= 90-100, B= 80-89, C= 70-79, D= 60-69, F= 59-Below

#### VII. Textbook/Reference Materials

DIESEL TECHNOLOGY - Seventh edition – Norman / Corinchock ISBN: 1-59070-770-2

#### IX. Additional Resources & Supplies

Basic tool set Safety glasses Notebook Pen/pencil Calculator

# X. Class Participation Policy & Student Conduct

- A. Texas State Technical College challenges students to be learners who assume responsibility for being a part of a community of scholars. Student presence and participation in the classroom is an important component of this challenge. Furthermore, as part of its mission, TSTC offers an education that prepares students for professional employment. Each student is encouraged to develop a professional work ethic that reflects responsibility, initiative, and teamwork.
- B. Students are expected to attend all classes. Students who are absent from class miss opportunities to contribute to the learning environment of the classroom and are developing patterns that will not be tolerated in the professional workplace.
- C. In light of the above, the student is responsible for all assigned course work and cannot be absolved of this responsibility. When enrolled in a particular course, the student is obligated to do all of the work assigned. Punctual and regular attendance is vital to the discharge of this obligation and absences, excused or not, do not alter this responsibility.
- D. Students whose absences exceed 15 percent of the scheduled Lecture and Lab sessions will not receive a passing grade for the course.
- E. Student Conduct:
  - 1. Students are expected to conduct themselves in a professional manner and to dress in the appropriate attire for the class being presented.
  - 2. Each student is expected to act responsibly and will be held accountable for his/her action or inaction as appropriate.

# F. Classroom Etiquette:

- 1. An atmosphere of respect will be expected of all within the classroom.
- 2. Any open displays of prejudice, harassment, etc. will not be tolerated.
- 3. Any student who disrupts the classroom will be asked to leave and will receive a zero on all work due that day and will be counted as absent for the day.
- 4. A second disruption by that student will be grounds for the student to be administratively dropped from the class and other disciplinary action will be taken as appropriate.
- 5. There will be no smoking, dipping, chewing tobacco or use of profane language in the Classroom or Laboratory.
- G. Cheating / Plagiarism Policy:

TSTC expects all students to engage in scholastic pursuits in a manner that is beyond reproach. Students are expected to maintain complete honesty and integrity. Any student found guilty of scholastic dishonesty is subject to disciplinary action. Scholastic dishonesty includes, but is not limited to, cheating on academic work (such as copying, bribing, or buying/selling tests), plagiarism (claiming another's work as one's own without acknowledgement INCLUDING Internet data), and collusion (unauthorized collaboration). See College Catalogue for additional information.

# XI. Safety

- Campus building occupants are required to evacuate buildings when a fire alarm activates. Alarm activation or announcement requires exiting and assembling outside.
- Familiarize yourself with all exit doors of each classroom and building you may occupy while receiving instructions. The nearest exit door may not be the door you used when entering the building.
- Students requiring evacuation assistance should inform the Instructor during the first week of class.
- In the event of evacuation, follow the faculty's or class Instructor's instructions.
- **Do Not** re-enter a building unless given instructions by the Fire Department, Campus/Local Police, or Fire Prevention Services.
- All students in this course will comply with all general safety rules, which apply to the type of activity in progress in each class. Violation of course safety rules can result in grade penalties and/or other appropriate disciplinary action.

If you have a documented disability that will impact your work in this class, please contact the ADA Coordinator, so that appropriate arrangements for your accommodations can be made. The counselor on your campus can assist you in this process. In accordance with the federal law, a student requesting accommodations must provide documentation of his/her disability to the ADA Coordinator. For more information call (325)-235-7441 or email donnie.armstrong@tstc.edu.

# XIII. Course Schedule

*The following Activities / Assignments are subject to change; however, reasonable notification will be given.* 

Week 1: Introduction

- A. Course Orientation with Student Information packets
- B. Employment opportunities in different industries
- C. Principles of diesel engine operation
- D. Cylinder blocks
- E. Lab station assignments
- F. Weekly exam at end of week 1

Week 2: Cylinder heads and valve train components

- A. Types and functions of cylinder head
- B. Parts identification and inspection of cylinder head components
- C. Valve train components
- D. Component functions, identification, and inspection
- E. Tune-up procedures
- F. Weekly exam at end of week 2

Week 3: Crankshafts, pistons, rings, connecting rods

- A. Crankshaft terminology, classifications, and inspection
- B. Crankshaft removal and installation procedures
- C. Piston types and usage
- D. Piston terminology, function, and inspection
- E. Connecting rod types and inspection
- F. Connecting rod and piston removal and installation procedures
- G. Weekly exam at the of week 3

Week 4: Cooling systems, engine assembly

A. Types of cooling systems

- C. Engine assembly techniques and adjustment procedures
- D. Exam at end of week 4

# Week 5: Review and final exam

- A. Review all covered course material
- B. Final written exam and Skills Exam

## **XIV. Instructor CV**

# Gary G. Bone

300 Homer K. Taylor Drive Sweetwater, Texas 79556 325-235-7363 gary.bone@.tstc.edu

Education	2008-2009	<b>Texas State Technical College West Texas</b> Associate of Applied Science Major: Diesel Technology
	1971-1973	<b>Amarillo College School of Vocational Arts</b> Certificate in Diesel Mechanics-2520 clock hours
Employment	2007-present	<b>Texas State Technical College West Texas</b> Sweetwater, TX <i>Senior Instructor</i> / Diesel Equipment Technology
	10/06-9/07	<b>Big Country Discount Truck Service</b> Abilene, TX <i>Operations Manager</i>
	7/95-10/07	<b>Corley-Wetsel Freightliner Inc. LLC</b> Abilene, TX ASE Certified Diesel Technician
	4/87-5/95	<b>Texas State Technical College West Texas</b> Sweetwater, TX <i>Senior Instructor</i> / Diesel Equipment Technology
	11/76-4/87	<b>Corley-Wetsel Freightliner Inc. LLC</b> Abilene, TX

		ASE Certified Diesel Technician
	3/73-11/76	<b>Cummins Sales &amp; Service</b> Amarillo, TX <i>Diesel Technician</i>
Training/Certifications	1980-present	<i>National Institute for Automotive Service</i> <i>Excellence-ASE</i> Master certified in all Heavy Truck categories
	11/00	<i>Electronic Systems</i> Freightliner of Amarillo Training Center
	9/99	<i>Freightliner Electrical Troubleshooting</i> Freightliner of Amarillo Training Center
	9/98	<i>ISC Engine Familiarization and Qualification</i> Cummins Southern Plains Training Center
	6/98	<i>Windows for Insite / Insite / B.E.T.T. Engine</i> <i>Electrics Familiarization</i> Cummins Southern Plains
	1993/ 1997	Caterpillar Team TEC Masters training modules
	12/96	NOW Overhaul Program; CELECT / STC Overhead Adjustment Digital Meter Usage Qualification Cummins Southern Plains Training Center
	8/96	<i>Freightliner Electronically-Controlled Engines</i> Freightliner Training Center
	11/95	Detroit Diesel Series 55 Familiarization, Disassembly, Assembly Stewart & Stevenson
	8/90	Detroit Diesel Series 60 Engine Overhaul–DDEC II

		Stewart & Stevenson
	3/89	<i>Detroit Diesel Electronic Controls–DDEC II</i> Stewart & Stevenson
	11/87	<i>Cummins B and C Series Engine Disassembly and</i> <i>Assembly</i> Cummins Southern Plains
<b>Professional Societies</b>	1980/present	ASE National Institute for Automotive Service Excellence Certified as Master Truck Technician
	2007/present	Texas Motor Transportation Association
Awards	9/90	"Dean's Award for Instructional Excellence" Texas State Technical College - Sweetwater
	1/98	<i>"Technician of the Year"</i> Caterpillar <i>Team TEC Masters</i>

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