MIDLAND COLLEGE
SYLLABUS
DEMR 1323
HEATING AND AIR CONDITIONING
2-4

Course Description: Theory of automotive air conditioning and heating systems. Emphasis on the basic refrigeration cycle and diagnosis and repair of system malfunctions. Covers EPA guidelines for refrigerant handling and new refrigerant replacements. May be taught manufacturer specific.

Students MUST actively participate by completing an academic assignment required by the instructor by the official census date. Students who do not actively participate in an academically-related activity will be reported as never attended and dropped from the course.

Text, References and Supplies: Required: **Cengage Unlimited digital e-book--** "Modern Diesel Technology Heating, Ventilation, Air Conditioning, and Refrigeration" by John Dixon. Text: 9781133716259

Course Goals/Objectives: Utilizing appropriate safety procedures, the student will explain the operation of the basic refrigeration cycle; diagnose and repair air distribution systems; demonstrate proper procedures for handling refrigerant and describe the operation of air conditioning and heating controls.

A. A/C SYSTEM DIAGNOSIS AND REPAIR
B. REFRIGERATION SYSTEM COMPONENT DIAGNOSIS REPAIR
- **a. Compressor and Clutch**
- **b. Evaporator, Receiver/Drier, Condenser, Etc.**

C. HEATING AND ENGINE COOLING SYSTEMS DIAGNOSIS AND REPAIR
D. OPERATING SYSTEMS AND RELATED CONTROLS DIAGNOSIS AND REPAIR
- **a. Electrical**
- **b. Vacuum/Mechanical**
- **c. Automatic and Semi-Automatic Temperature Controls**

E. REFRIGERANT RECOVERY, RECYCLING AND HANDLING

Students may perform the following tasks in order to maintain safe lab and classroom spaces:

- Participate in shop and classroom maintenance which may include, but not limited to sweeping, mopping, disposing of trash, cleaning work benches, organize tools and equipment, organize tool room, disinfect classroom tables and chairs.
- Disassemble discontinued lab training vehicles or equipment for salvage.
- Repurpose lab vehicles to be utilized in lab assignments.
- Other course related tasks as assigned by instructor.

Student Contributions and Class Policies:
1. Student/Participant must furnish a set of approved safety eye glasses.
2. Student/Participant must understand class attendance is critical; therefore, three consecutive absences or five total absences may be considered justification for failure or dismissal from class.
3. Punctuality, being prepared for class, being alert, participating pro-actively and exhibiting a respectful and appropriate attitude will be required.

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Evaluation of Students:

10% = Attendance/Punctuality
10% = Professionalism/Participation
25% = Mid-term & Final exams
40% = Skills Objectives (Lab Assignments)
15% = Knowledge Objectives (Classroom Assignments)
100% Total

90 and above	A
80-89	B
70-79	C
60-69	D
59 and below	F

Course Schedule: This class meets for 2 lecture hours and 4 lab hours per week.

SCANS Information: SCANS skills are taught and/or reinforced in diesel courses. The student must locate, read, interpret and understand instruction information and direction materials. The participant must communicate thoughts, ideas and information through verbal and written mediums. Practical arithmetic and mathematics will apply continually throughout diesel technology training. Listening, interpreting, and responding to verbal communications and instructions as well as speaking in response to questioning will be a daily involvement. Thinking, reasoning, visualizing and problem solving are required assets to the automotive technician. The student/participant must display responsibility, self-management and honesty.

Administrative Information:

Pete Avalos, Applied Technology Dean

Division Office:
Main Campus/MHAB #176
(432) 685-4676

Erick Gutierrez, Department Chair/Professor
ATC Office #126
(432) 686-4917
egutierrez@midland.edu

Students should feel free to contact the instructor at any time. Appointments are encouraged for advising and planning the most appropriate or beneficial course work.

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Americans with Disabilities Act (ADA)

Any student who, because of a disabling condition, may require some special arrangements to meet course requirements should contact disabilities support services as soon as possible at: Accommodation Services. Conditions may include documented physical or educational disabilities. Please be aware that services or accommodations are not automatic. Each student must request them and secure the proper authorizations/documentation. Accessibility Links can be found on the Pages tab in Canvas.

Midland College Non-Discriminatory Statement:

Midland College does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities. For information and inquiries regarding Midland College's non-discrimination policies, go to: Title IX For further information on notice of non-discrimination, visit the ED.gov Office of Civil Rights website, or call 1 (800) 421-3481.

Syllabus subject to change as deemed necessary by the instructor to ensure learning objectives and course goals are met