



Course Title: DEMR 1323 Heating, ventilation, and AC Testing and repair
Section Name: Automotive/Diesel Technology
Semester: Spring 2013, 1st
Time: 06:00PM – 07:50PM
Classroom: AT 105

Instructor: Jerry Griffith
Email: jgriffith@odessa.edu
Office: DM 101
Phone: (432) 335-6632
Office Hours: MTWTh 12:30PM – 3:00PM

Course Description:

FROM CATALOG

Comment [RJ1]: Description needs to come from Catalog.

Required Texts:

Description of Institutional Core Objectives (ICO's)

Given the rapid evolution of necessary knowledge and skills and the need to take into account global, national, state, and local cultures, the core curriculum must ensure that students will develop the essential knowledge and skills they need to be successful in college, in a career, in their communities, and in life. Therefore, with the assistance of the Undergraduate Education Advisory Committee, the Coordinating Board has approved guidelines for a core curriculum for all undergraduate students in Texas.

Through the application and assessment of objectives within the institution's core curriculum, students will gain a foundation of knowledge of human cultures and the physical and natural world; develop principles of personal and social responsibility for living in a diverse world; and advance intellectual and practical skills that are essential for all learning. Appropriate Odessa College faculty periodically evaluates all of the courses listed in the descriptions on the following pages of this catalog and keys them to Odessa College's Institutional Core Objectives (ICOs), as defined by the Texas Higher Education Coordinating Board (THECB). (Source: *Odessa College Catalog of Courses 2012-2013*, page 73)

Odessa College's Institutional Core Objectives (ICOs):

- 1) *Critical Thinking Skills* - to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
- 2) *Communication Skills* - to include effective development, interpretation and expression of ideas through written, oral and visual communication
- 3) *Empirical and Quantitative Skills* - to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions

- 4) *Teamwork* - to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal
- 5) *Personal Responsibility* - to include the ability to connect choices, actions and consequences to ethical decision-making
- 6) *Social Responsibility* - to include intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities

Learning Outcomes for _____ (Source: *Odessa College Catalog of Courses*)

Outcome	ICO
Students will learn a systematic process in diagnostics enabling the ability to determine the most logical approach toward isolating a performance concern.	<i>Critical Thinking Skills</i> - to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
Students will create customer repair orders expressing the concern with the vehicle. Students will write a comprehensive list and description of all tasks performed including tools used in the process.	<i>Communication Skills</i> - to include effective development, interpretation and expression of ideas through written, oral and visual communication
Students will use diagnostic data from various types of test equipment and compare their data with factory specifications to determine what action will be necessary to make the repairs.	<i>Empirical and Quantitative Skills</i> - to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions <i>Teamwork</i> - to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal
Lab work will be performed in teams that require cooperation between individuals to be successful. Their success will be reflected by their Lab grade and will be a shared grade.	<i>Personal Responsibility</i> - to include the ability to connect choices, actions and consequences to ethical decision-making
	<i>Social Responsibility</i> - to include intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities

Odessa College Policies

Academic Policies

Note that the OC Student Handbook states (page 32) that “[i]n cases of academic dishonesty, the instructor has the authority to impose appropriate scholastic penalties. Complaints or appeals of disciplinary sanctions may be filed in accordance with the college due process procedure. Copies of the college due process procedure are

Comment [RJ2]: The following are OC policies and need to be included in your syllabus.

available in the office of The Director of Student Life (CC104).”

For more information on your rights and responsibilities as a student at Odessa College, please refer to the following: *The 411 of OC: Student Handbook 2012-2013; Student Rights & Responsibilities*
<http://www.odessa.edu/dept/studenthandbook/handbook.pdf>

Scholastic Dishonesty

Scholastic dishonesty shall constitute a violation of these rules and regulations and is punishable as prescribed by board policies. Scholastic dishonesty shall include, but not be limited to, cheating on a test, plagiarism and collusion.

"Cheating on a test" shall include:

- Copying from another student's test paper
- Using test materials not authorized by the person administering the test.
- Collaborating with or seeking aid from another student during a test without permission from the test administrator.
- Knowingly using, buying, selling, stealing or soliciting, in whole or in part, the contents of an unadministered test.
- The unauthorized transporting or removal, in whole or in part, of the contents of the unadministered test.
- Substituting for another student, or permitting another student to substitute for one's self, to take a test.
- Bribing another person to obtain an unadministered test or information about an unadministered test.
- "Plagiarism" shall be defined as the appropriating, buying, receiving as a gift, or obtaining by any means another's work and the unacknowledged submission or incorporation of it in one's own written work.
- "Collusion" shall be defined as the unauthorized collaboration with another person in preparing written work for fulfillment of course requirements. (Source: *Odessa College Student Handbook 2012-2013, page 29-30*)

Special Populations/Disability Services/Learning Assistance

Odessa College complies with Section 504 of the Vocational Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. If you have any special needs or issues pertaining to your access to and participation in this or any other class at Odessa College, please feel free to contact me to discuss your concerns. You may also call the Office of Disability services at 432-335-6861 to request assistance and accommodations.

Odessa College affirms that it will provide access to programs, services and activities to qualified individuals with known disabilities as required by **Section 504 of the Rehabilitation Act of 1973 and Title II of the Americans with Disabilities Act of 1990 (ADA)**, unless doing so poses an undue hardship or fundamentally alters the nature of the program or activity. Disabilities may include hearing, mobility or visual impairments as well as hidden disabilities such as chronic medical conditions (arthritis, cancer, diabetes, heart disease, kidney disorders, lupus, seizure disorders, etc.), learning disabilities or psychiatric or emotional disabilities. A student who comes to Odessa College with diagnosed disabilities which may interfere with learning may receive accommodations when the student requests them and submits proper documentation of the diagnosis. A Request for Accommodations form and guidelines for beginning the request process are available in the OC Help Center or on the Odessa College web site at www.odessa.edu/dept/counseling/disabilities.htm. The college strives to provide a complete and appropriate range of services for students with disabilities such as assistance with testing, registration, information on adaptive and assistive equipment, tutoring, assistance with access and accommodations for the classroom where appropriate. For information regarding services, students with

disabilities should contact the Office of Disability Services in the OC Help Center located in Room 204 of the Student Union Building or call 432-335-6433. (Source: *Odessa College Catalog of Courses 2012-2013*, page 52)

Dropping a Course or Withdrawing from College

Students wishing to drop a non-developmental course may do so online using WebAdvisor, at the Wrangler Express, or Registrar's Office. A student wishing to drop a developmental course or withdraw from college should obtain a drop or withdrawal form from the Wrangler Express or the Registrar's Office. Students are encouraged to consult with instructors prior to dropping a class. Students may not completely withdraw from the college by use of the Web. Students must drop a class or withdraw from college before the official withdrawal date stated in the class schedule. Students who are part of the Armed Forces Reserves may withdraw with a full refund if the withdrawal is due to their being ordered into active duty. A copy of the student's orders must be presented to the Registrar's Office at the time of the withdrawal. For details, please contact the Office of the Registrar. **No longer attending class does not automatically constitute withdrawal from that class, nor does a student's notification to an instructor that the student wishes to be dropped. Failure of a student to complete the drop/withdrawal process will result in a grade of "F."** (Source: *Odessa College Catalog of Courses 2012-2013*, page 36)

Learning Resource Center (LRC; Library)

The Library, known as the Learning Resources Center, provides research assistance via the LRC's catalog (print books, videos, e-books) and databases (journal and magazine articles). Research guides covering specific subject areas, tutorials, and the "Ask a Librarian " service provide additional help.

Student Success Center (SCC)

Located in the LRC, the Student Success Center (SSC) provides assistance to students in meeting their academic and career goals. We strive to provide new and updated resources and services at no charge to OC students. Academic support services include tutoring, study skills training, workshops, and the mentoring program. Tutoring is available for a variety of subjects including college mathematics, English, government, history, speech, chemistry, biology, and all developmental coursework. Appointments are preferred, but walk-ins will be served as soon as possible. Smarthinking online tutoring is also available. All computers in the center have Internet access, Microsoft Office, and software resources to assist OC students in improving their reading, writing and mathematical skills. The center also offers special assistance to students preparing for the THEA/COMPASS test. Computer lab assistants are available to assist students with student email, Blackboard, OC portal, Course Compass and more. For more information or to make an appointment, please call 432-335-6673 or visit www.odessa.edu/dept/ssc/ (Source: *Odessa College Catalog of Courses 2012-2013*, page 54)

Student E-mail

Please access your Odessa College Student E-mail, by following the link to either set up or update your account: <http://www.odessa.edu/gmail/>. **Correspondence will be submitted using your Odessa College email as an alternative method to contact you with information regarding this course.**

Technical Support

For Blackboard username and password help and for help accessing your online course

availability and student email account contact the Student Success Center at 432-335-6878 or online at https://www.odessa.edu/dept/ssc/helpdesk_form.htm.

Expectations for Engagement – Face to Face Learning

To help make the learning experience fulfilling and rewarding, the following Expectations for Engagement provide the parameters for reasonable engagement between students and instructors for the learning environment. Students and instructors are welcome to exceed these requirements.

Reasonable Expectations of Engagement for Instructors

1. As an instructor, I understand the importance of clear, timely communication with my students. In order to maintain sufficient communication, I will
 - provided my contact information at the beginning of the syllabus;
 - respond to all messages in a timely manner through telephone, email, or next classroom contact; and,
 - notify students of any extended times that I will be unavailable and provide them with alternative contact information (for me or for my supervisor) in case of emergencies during the time I'm unavailable.
2. As an instructor, I understand that my students will work to the best of their abilities to fulfill the course requirements. In order to help them in this area, I will
 - provide clear information about grading policies and assignment requirements in the course syllabus, and
 - communicate any changes to assignments and/or to the course calendar to students as quickly as possible.
3. As an instructor, I understand that I need to provide regular, timely feedback to students about their performance in the course. To keep students informed about their progress, I will
 - return classroom activities and homework within one week of the due date and
 - provide grades for major assignments within 2 weeks of the due date or at least 3 days before the next major assignment is due, whichever comes first.

Reasonable Expectations of Engagement for Students

1. As a student, I understand that I am responsible for keeping up with the course. To help with this, I will
 - attend the course regularly and line up alternative transportation in case my primary means of transportation is unavailable;
 - recognize that the college provides free wi-fi, computer labs, and library resources during regular campus hours to help me with completing my assignments; and,
 - understand that my instructor does not have to accept my technical issues as a legitimate reason for late or missing work if my personal computer equipment or internet service is unreliable.
2. As a student, I understand that it is my responsibility to communicate quickly with the instructor any issue or emergency that will impact my involvement with or performance in the class. This includes, but is not limited to,
 - missing class when a major test is planned or a major assignment is due;
 - having trouble submitting assignments;
 - dealing with a traumatic personal event; and,
 - having my work or childcare schedule changed so that my classroom attendance is affected.

3. As a student, I understand that it is my responsibility to understand course material and requirements and to keep up with the course calendar. While my instructor is available for help and clarification, I will
- seek out help from my instructor and/or from tutors;
 - ask questions if I don't understand; and,
 - attend class regularly to keep up with assignments and announcements.

Spring 2013 (1/22-5/17)

NOTE: College business offices are closed from Dec 21 (Fri. at 1pm) - Jan 6 (Sun.)

FALL & SPRING BUSINESS HOURS:

Wrangler Express Center: M-Th: 7:30 am-7 pm; Fri: 7:30 am-5 pm; Sat: 9 am-noon

Other offices: M-Th: 8 am-5:30 pm; Fri: 8 am-1 pm

SUMMER BUSINESS HOURS

Wrangler Express Center: (beginning May 14) M-Th: 7:30 am-7 pm; Fri: 8 am-5 pm; Closed Saturdays

(beginning Aug 3, Wrangler Express will also be open 9 am-noon on Saturdays)

Other offices: May 20-Aug 17 (M-Th: 7:30 am-5:30 pm; closed Fridays)

Registration:

On the Web (5 am to Midnight, 7 days a week).....Nov 12-Jan 21

In Person (See Business Hours Above).....Nov 12-Jan 18

***REGISTRATION PAYMENT DEADLINE

* For students registered who register prior to Jan 7.....Payment is DUE Jan 7 (Mon)

* For students who register on or after Jan 7.....Due on Day of Registration

Holiday (Martin Luther King Day - Offices closed except for Wrangler Express).....Jan 21 (Mon)

Classes Begin.....Jan 22(Tue)

Late Registration & Schedule Changes (Add/Drop):

On the Web (5 am to Midnight, 7 days a week).....Jan 22-23 (Tue-Wed)

In Person (See Business Hours Above).....Jan 22-23 (Tues-Wed)

** Late Registration & Add/Drop Payment Deadline.....Due on Day of Registration

Census Day.....Feb 6 (Wed)

Deadline for Spring Degree Application.....Mar 20 (Wed)

First Eight Weeks End.....Mar 22 (Fri)

Spring Break (Offices Closed – No Classes).....Mar 11-16 (Mon-Sat)

Second Eight Weeks Begin.....Mar 25 (Mon)

Holiday (Good Friday).....Mar 29 (Fri)

Last Day to Drop or Withdraw with a "W" (full semester length courses).....Apr 16 (Tues)

Student Evaluation of Instruction Survey Available Online.....April 28-May 4

Last Day to Drop or Withdraw with a "W" (2nd eight week courses).....Apr 30 (Tues)

Last Class Day.....May 11 (Sat)

Final Exams.....May 13-16 (Mon-Thurs)

Spring Graduation.....May 17 (Fri)

End of Semester.....May 17 (Fri)

Course Policies

Disclaimer

This syllabus is tentative and subject to change in any part at the discretion of the instructor. Any changes will be in accordance with Odessa College policies. Students will be notified of changes, if any, in timely manner.

Comment [RJ3]: The following are COURSE policies and will vary. Please take note of notes in the margin.

Comment [RJ4]: This is a good statement to keep in case you need to adjust the schedule.

Original Effort

The work submitted for this course must be original work prepared by the student enrolled in this course. Efforts will be recognized and graded in terms of individual participation and in terms of ability to collaborate with other students in this course.

Comment [RJ5]: I have found this statement to be very helpful to set expectations for students.

Description of students

Students enrolled in this course _____

Comment [RJ6]: Who are the students taking this course? 2-3 sentences

Course prerequisites

(Source: *Odessa College Catalog of Courses 2012-2013, page 178*)

Comment [RJ7]: Check with the catalog for any prerequisites.

Course Alignment with Industry Standards

Comment [RJ8]: If your program is accredited or is otherwise aligned to industry standards, list that professional organization here along with the description of the standard(s).

Digital Protocol

Cell phones must be placed on either *vibrate* or *silent* mode and are to be accessed in emergency cases only. The use of laptops or any other digital device is permitted in order to facilitate note-taking relative to instruction. Any written assignments will be submitted electronically on Blackboard. **The electronic recording of the time on Blackboard will be considered the time of assignment submission. Take necessary steps to ensure that your assignments are submitted on “Blackboard” time.** Back-up and/or additional copies of all assignments submitted is encouraged. **Computers/printers are available to OC students in the LRC (301-303); therefore, not having access to a computer due to technical issues (crash; corrupted files) will not be considered as an acceptable reason for not completing assignments.** If there is a loss of server connection with Odessa College due to maintenance, then an email will be sent to student with pertinent information and status reports. Assignments submitted electronically need to be **WORD documents (doc or docx).**

Comment [RJ9]: I have found this statement to be very helpful to set expectations for students.

Attendance Policy

Students are expected to attend class regularly. Attendance will be recorded using a “sign-in” sheet. Excessive absences will be grounds for disciplinary action, and will be determined on a case-by-case basis. If you are more than 15 minutes late to class or leave class early without notifying the instructor, this will count as an absence. Students are permitted _____ absences before a loss of _____ point(s) _____.

Comment [RJ10]: I have found this statement to be very helpful to set expectations for students. Your course policy may vary on the number of absences permitted and any deductions thereafter.

AVID

This course has been identified as a course by Career, Technical, and Workforce Education as one in which teaching and learning strategies adopted by AVID will be implemented. As a student in the legal program, you will be expected to develop an understanding of the strategies, to model the strategies, to maintain fidelity of implementation, and to examine how these strategies may impact your effectiveness as a professional in your chosen area of occupation, either through coursework or practicum experience as outlined by the course instructor.

Comment [RJ11]: This statement should be included in all CTWE courses, given the AVID in technical education initiative.

Grading Policy

Please understand that this is a required course for the _____ program in order to prepare you _____. Quality work and active participation is expected and not to be negotiated. As a general policy, grades will be taken in class. Any written assignments or tests will be graded outside of class. You can expect feedback on assignments within a week’s time.

Comment [RJ12]: I have found this statement to be very helpful to set expectations for students. Your course policy may vary on the policy. A grading policy needs to be included.

Grade Inquiry Policy

It is the responsibility of the individual taking this course to maintain accurate track of assignment submissions and grades. There will be opportunities during the semester to meet with the instructor to discuss your academic progress. Contact the instructor to schedule an appointment. Class time will not be used for grade inquiries. All grades are final.

Comment [RJ13]: I have found this statement to be very helpful to set expectations for students.

Communication Plan

The best way to communicate with the course instructor is via email through Blackboard. Also, check in Blackboard regularly for announcements, including any changes in the course schedule due to instructor illness or conference attendance. Appointments with the instructor may also be scheduled.

Comment [RJ14]: I have found this statement to be very helpful to set expectations for students.

General Course Requirements

1. Attend class and participate.
2. Contribute and cooperate with civility.
3. **Submit assignments on time. Late work will not be accepted. Medical and/or family circumstances that warrant an extension on assignments need to be presented to the instructor. Extensions will be allowed at the instructor's discretion.**

Comment [RJ15]: I have found this statement to be very helpful to set expectations for students. Requirements will vary from course to course.

Grading Scale:

"A" = 90-100
"B" = 80-89
"C" = 70-79
"D" = 60-69
"F" = 0-59

Comment [RJ16]: I have found this information to be very helpful to set expectations for students. Your course policy may vary on the policy. A grading scale needs to be included.

Incomplete Policy

An 'Incomplete' grade may be given only if:

1. The student has passed all completed work
2. If he/she has completed a minimum of 75% of the required coursework. A grade of an "I" will only be assigned when the conditions for completions have been discussed and agreed upon by the instructor and the student.

Comment [RJ17]: I have found this statement to be very helpful to set expectations for students. Requirements will vary from course to course.

Overview of assignments

Type of Assignment	Percentage
1. Task Sheet Completion	25%
2. Lab Participation	25%
3. Tests and Quizzes	25%
4. Final Exam	25%

Comment [RJ18]: I have found this table to be very helpful to set expectations for students. Assignments and percentages will vary from course to course.

ASSIGNMENT "A": description

Comment [RJ19]: A brief description of the assignments is another way to provide students with information. 2-3 sentence description

Schedule (Tentative and Subject to Change)

Date	Instructional Approach	Topic	Assignment	Assignment Submission
Jan 22	(* denotes a strategy adopted by AVID) Lecture: present and review syllabus.	Check roster, roll call, review syllabus, go over lab procedures, perform a safety walk-through of lab/shop area.		

Comment [RJ20]: This table/schedule of the course and assignment information is very helpful to students and will help them stay on track. The TOPIC column should be more than a chapter number; there should be a description of that day's/module's activities.

Tuesday Jan 23	(Quick write*) Lecture: OC lecture/lab expectations and outcomes.	(Quick write*) student's , write down goals, experience, and learning expectations and other info relative to their choice to attend OC. Issue safety glasses.	
Wednesday Jan 24	Lecture/lab preparation	Present lab procedures; choose work teams, inventory tool boxes.	
Monday Jan 28	IMS Computer assisted testing via lecture/lab demo	Review <u>IMS online textbook</u> , create usernames and passwords,	
Tuesday Jan 29	Lecture: Present written documentation and Task Score <u>Sheets</u>	Create student file folder containing all NATEF required documents including tasks list, repair orders, job sheets	
Wednesday Jan 30	Chapter 1 Lesson 1 and 2 Lecture/lab heat behavior	Review principles of refrigeration. TEST #1 on IMS Heat transfer and refrigeration Vapor pressure Lab demonstration	Test due Jan 30
Thursday Jan 31	Chapter 2 Lecture Use of Strategy Based Diagnostics	Air conditioner components. Typical designs. Lab – begin live work on vehicles.	
Monday Feb 4	Open discussion on yesterdays lab work.	Complete documentation and continue lab live work. As necessary.	
Tuesday Feb 5	Learning All-data diagnostic and repair program.	Introduce All-data into diagnostics in lab with on-going projects.	
Wednesday Feb 6	Chapter 2 Lecture: Lessons 1 and 2. Demo special tools for AC.	Lab: begin live work requiring special tools and equipment. Specific instruction required. Refrigerants and usage.	
Thursday Feb 7	Chapter 2 cont. Lecture: components, functions, and differences	Lab: visual demo of components and their function in the AC system.	
Monday Feb 11	Chapter 3 Lecture:	Introduce service equipment necessary to service AC systems.	

	equipment precautions	Discuss maintenance requirements	
Tuesday Feb 12	Chapter 3 cont. Other types of refrigerants.	Discuss alternate refrigerants and precautions. Use refrigerant analyzer.	
Wednesday Feb 13	Chapter 4 Lecture: Diagnostics	Perform leak checks and other diagnostic procedures.	
Thursday Feb 14	TEST #2 on IMS.	Test review TEST #2 on IMS.	Due Feb 14.
Monday Feb 18	Chapter 5 Lecture: AC compressors	Diagnosis of Compressors and clutch components . On vehicle testing.	
Tuesday Feb 19	Chapter 6 Lecture: parts and functions	On vehicle diagnostic exercises on evaporators , Expansion valves, and CCOT systems.	
Wednesday Feb 20	TEST #3 on IMS.	TEST #3 on IMS.	Due Feb 20th
Thursday Feb 21	Chapter 7 Lecture	Heating systems and engine cooling systems . On vehicle.	
Monday Feb 25	Chapter 7 cont. Lecture: Heating controls.	Live work repairs and servicing of heating system components .	
Tuesday Feb 26	Chapter 8 Lecture: Controls	Live work on vehicles continued on various related AC and Heater control systems .	
Wednesday Feb 27	Chapter 8 cont. Lecture: Control diagnostics	Discuss, demo and begin live work on electrical controls.	
Thursday Feb 28	Chapter 8 cont. Lecture: controls cont.	Blower motor demo and diagnostics.	
Monday March 4	Chapter 8 cont. Lecture: combined controls	Operation and diagnostic tips for electronic AC and Heating controls.	
Tuesday Feb 5	Chapter 8 cont. Lecture: Blending technology	Demo and discussion of blended control systems.	
Wednesday March 6	Chapter 9 Lecture: Retrofit	Retrofit from R-12 to R-134A systems	
Thursday March 7	Chapter 9 cont. Lecture: EPA	Discussion of (EPA) environmental Protection Agency Laws.	

