I INTRODUCTION

A. An introduction to the automotive industry including automotive history, safety practices, shop equipment and tools, vehicle subsystems, service publications, fasteners, professional responsibilities, and automotive maintenance.

B. Introduction to Automotive Technology (AUMT 1405) is a required course for the completion of a two year Associate of Applied Science degree in Automotive Mechanic/Technician or a Level I or Level II certificate of completion in the Automotive Technician Program.

C. This course is occupationally related and serves as a preparation for a career in the Automotive Service and Repair field.

D. Prerequisites: There are no Prerequisites for this Course.

E. Alphanumeric coding used throughout this module book denotes integration of SCANS occupational competencies (C1, etc.) and Foundation skills (F1, etc.).

II LEARNING OUTCOMES

Upon successful completion of this course, Introduction to Automotive Technology, the student will:

A. Utilize appropriate safety procedures, the student will demonstrate familiarity with historical developments and career information on the automotive industry. (C7) (F6)

B. Demonstrate safe, professional, and responsible work practices. (C18, 19)

C. Identify and demonstrate the proper use of shop equipment and tools. (C20)

D. Identify and describe functions of vehicle subsystems. (C7)

E. Demonstrate the use of service publications. (C7) (F1)

F. Identify various automotive fasteners used in industry. (C7)

G. Perform automotive maintenance. (C18, 19)

H. Explain OSHA, the Hazardous Communications Acts, Right to Know requirements and use the MSDS. (C7) (F6)

I. Perform mathematical operations (add, subtract, multiply, and divide whole numbers, fractions, decimals and compute percentages). (F3, 4)

J. Identify and explain the use of various types of fire extinguishers. (C7) (F6)

K. Name the classes of fires and explain them. (C7) (F6)

L. Identify and properly use sealants. (C7)

M. Identify and explain the uses of seals and bearings. (C7) (F6)

N. Identify and use protective clothing. (C7) (F6)
O. Explain basic first aid. (C7) (F6)
P. Use a computer. (C8)
Q. Set goals, prepare a Job Application, and prepare a resumes. (C7)
R. Use Customary and Metric Measuring Systems. (C18) (F3, 4)
S. Identify and use precision measuring devices. (C18, 19, 20)
T. Perform soldering operations. (C19)
U. Explain uses of fuels, lubricants, and fluids. (C7)
V. Use cleaning methods and equipment. (C18, 19, 20)

III INSTRUCTIONAL MATERIALS

A. Instructional materials for this course may be found at 
www.ctcd.edu/im/im_main.asp

B. Supplemental Reading: As assigned by the instructor.

C. Audio-visual aids: See resource list at end of this module book.

D. Other instructional material: as selected by the instructor.

IV COURSE REQUIREMENTS

A. This course is being taught in a self-paced mode. It differs from the traditional college course in that you are allowed to work on your own and at your own speed within limitation. This course is 96 hours in length. The student may set his/her own schedule within the time frame the course is offered. You must attend class on the days and at the times you selected when you enrolled in the course.

You will have an assigned instructor. If at any time you do not understand a reading assignment, audio, visual presentation or lab work, ask your instructor for assistance. He is there for you!

This module book is designed to inform you of the sequence in which this course will be presented. You must follow the instructors directions and you must do what the module book says. It contains reading assignments, written assignments, audio visual presentations and lab assignments that you must complete. Written assignments will be turned in as directed by the instructor. Late assignments will not be accepted. You must let your instructor know when you are ready to do a learning activity, performance exam or take a scheduled exam.

B. The student must take notes when viewing videos. Exams may be taken from lectures, audio visual aids, reading and lab assignments. If instructor notes or handouts are given to you, you must study them, exams may be taken from these notes also.
C. The instructor may give written assignments or A pop® quizzes as he deems necessary.

D. **Performance Exams:**
Each student will clean all tools and equipment that they use and properly store them and clean their work area after the completion of each task

**Certificate Students:** All lab work will be completed on an individual basis. The student will receive a A pass® or A fail® on the task. Students who fail to complete a task correctly to industry standards must repeat the task. The instructor will date and initial each performance exam task as it is satisfactorily completed. **NOTE:** Students who have selected the alpha-numeric grading system will be graded as outlined for degree students (see below)

**Degree Students:** Laboratory tasks (performance exam) will be completed on an individual basis except when limited by tools and/or materials. **Each performance exam is worth a maximum of 8.3 points.** The maximum lab grade is 100 points. The instructor will deduct points from each lab task score for failure to follow safety precautions and/or a failure to complete the project to industry standards. The instructor will date, initial, and post the points earned for each performance exam as it is completed.

D. The following is part of the course requirements: Each student will assist in lab clean-up at the close of the evening classes and will assist in unloading and storing supply shipments. Failure to do so will result in a failure to complete all course requirements and the student could receive a A F® or A N® for the course.

E. There will be thirteen (13) written examinations in this course (12 module/unit exams and an exit exam). **Written exams must be completed before taking the performance exam for each module.** The exit exam is a comprehensive exam that covers the entire course. Certificate students must score 70% on the exit exam. Certificate students will be allowed to take the exit exam a maximum of three (3) times. Failure to achieve a 70% score on the exit exam in three (3) tries will result in an A N® for the course and the student must retake the course. **Degree Students should refer to the A grading® section of this outline for guidance.**

F. The student must complete the written assignments to receive a grade. **Written assignments for each unit will be turned into the instructor prior to starting performance exams for that module.** Degree students must complete reading and written assignments at home.
G. If you have special needs because of learning disabilities or other kinds of disabilities, please feel free to discuss this with the instructor. The instructor will attempt to meet your needs with the assistance of counselors, tutors (Project Mainstream), and the assistance of the Disabilities Service Office. Program/course integrity will not be sacrificed. Students must meet all course requirements.

**GRADING**

Certificate Students: Students will be graded using the standard Skills Center “Pass-Fail” system used for self-paced programs. To satisfactorily complete the written exams, the student must score 80% on tests (except the exit exam, 70%). Students who fail to make the 80% on any exam (except the exit exam) must retake the exam. The current test re-take policy will apply to all certificate students. The student must satisfactory complete all written and performance exams to receive a passing grade (P)

**Degree Students:** Students will be graded using an alpha-numeric system as outlined below. Grades made on performance and written exams will be the grade received, including the exit exam. **Students will not be allowed to retake written exams or redo performance exams.**

I. Written exams: Average of written exams will count 40% of the final grade.

II. Completion of written assignments/activities will count 10% of the students final grade.

III. Performance Exams (Lab work) will count 50% of the final grade.

IV. Grade Computations: (Example)

**Written Exam Scores:** (There will be 11 written exams)

Exam 1 90  
Exam 2 80  
Exam 3 70  

240 divided by 3 = 80 (Average Written Exams)

Written Exam Score Average 80 x 40% = 32 points  
Written Assignments 100 x 10% = 10 points  
Performance Exam Scores 80 x 50% = 40 points  

Total = 82 points = B
V. NOTES AND ADDITIONAL INSTRUCTIONS FROM THE COURSE INSTRUCTOR

A. Course Withdrawal: It is the students responsibility to officially withdraw from a course if circumstances prevent attendance. Any student who desires to, or must, officially withdraw from a course after the first scheduled class meeting must file a Central Texas College Application for Withdrawal (CTC Form 59). The withdrawal form must be signed by the student.

CTC Form 59 will be accepted at any time prior to Friday of the 12th week of classes during the 16-week fall and spring semesters. The deadline for sessions of other lengths is:

- 10-week session: Friday of the 8th week
- 8-week session: Friday of the 6th week
- 5-week session: Friday of the 4th week

The equivalent date (75% of the semester) will be used for sessions of other lengths. The specific last day to withdraw is published each semester in the Schedule Bulletin. A student who officially withdraws will be awarded the grade of W provided the students attendance and academic performance are satisfactory at the time of official withdrawal. Students must file a withdrawal application with the College before they may be considered for withdrawal.

A student may not withdraw from a class for which the instructor has previously issued the student a grade of F, N, FN, or XN for nonattendance.

B. Administrative Withdrawal: An administrative withdrawal may be initiated when the student fails to meet College attendance requirements. The instructor will assign the appropriate grade on CTC Form 59 for submission to the registrar.

C. Incomplete Grade: The College catalog states, An incomplete grade (IP) may be given in those cases where the student has completed the majority of the course work but, because of personal illness, death in the immediate family, or military orders, the student is unable to complete the requirements for a course. . . Prior approval from the instructor is required before the grade of IP for Incomplete is recorded. A student who merely fails to show for the final examination will receive a zero for the final and an F or N for the course.

D. Cellular Phones and Beepers: Cellular phones and beepers will be turned off while the student is in the class room or the laboratory.

E. Americans With Disabilities Act (ADA): Students requiring accommodations for disabilities are responsible for notifying the instructor. Reasonable accommodations will be granted in full compliance with federal and state law and Central Texas College policy.
F. Instructor Discretion: The instructor reserves the right of final decision in course requirements.

G. Civility: Individuals are expected to be cognizant of what a constructive educational experience is and respectful of those participating in a learning environment. Failure to do so can result in disciplinary action up to and including expulsion.

H. Absence from the class may be unavoidable in some situations. These include illness, military/civilian job requirements, or a death in the immediate family. Documentation is required in the case of excused absences for job requirements. Excuses will be on company letterhead stationary signed by the immediate supervisor stating that the reason for the absence for civilian jobs. Excuses for military personnel must be signed by the 1st Sergeant or the Company Commander. **NOTE: This does not apply to VA, VA/Voc, or Financial Aid students. There are no excused absences for these students. Talk to your funding agency if you have questions.**

Disability Support Services provides services to students who have appropriate documentation of a disability. Students requiring accommodations for class are responsible for contacting the Office of Disability Support Services (DSS) located on the central campus. This service is available to all students, regardless of location. Review the website at [www.ctcd.edu/disability-support](http://www.ctcd.edu/disability-support) for further information. Reasonable accommodations will be given in accordance with the federal and state laws through the DSS office.
V. FIRST CLASS MEETING

A. The instructor will introduce the course and show the student the textbook.

B. The instructor will verify the class roster/enrollment form:
   1. Call roll
   2. Have each student verify the spelling of his/her name and the social security number by initialing the class roster/enrollment form.
   NOTE: When a students’ name does not appear on the degree program class roster, they must bring it to the attention of the instructor and must present the instructor with CTC Form 29 (Add/Drop Slip) reflecting that he/she has properly registered for the course.

C. The instructor will have the student read and sign the course requirements sheet.

D. The instructor will discuss the following topics with the student:
   1. Course requirements, objectives and how the course works
   2. Policy letters
   3. Student handouts
   4. Lab sheet and lab work (Learning activities, Performance exams, competency profile)
   5. Exam, grading, reading and written assignments.
   6. Absences
   7. Shop/classroom cleanup tools
   8. Dress code
   9. Parking
   10. Sign-in computer
   11. Course outline/fact sheets/student handouts
   12. Hazardous communications/MSDS information
   13. Shop safety
COURSE OUTLINE OR SEQUENCE

I. Module 1405-01: Computers and the Automotive History

A. Time
   Certificate Student: 11 Clock Hours
   Degree Student: 2 Week

B. Learning Outcomes: Upon completion of this module the student will:
   1. Use a computer. (C8)
   2. Set goals, prepare a job application and prepare a resume. (C7)
   3. Utilizing appropriate safety procedures, the student will demonstrate familiarity with historical developments and career information on the automotive industry. (C7)(F6)
   4. Identify and describe functions of vehicle subsystems. (C7)
   5. Perform automotive maintenance. (C18, 19)

C. Read Fact Sheet 1405-01-01, on Goals.

D. Read Fact Sheet 1405-01-02, on Job Applications.

E. Read Fact Sheet 1405-01-03, on Résumés.

F. Read Chapter’s 1 and 2 in Resource 1405-01 (Textbook) and answer all questions at the end of each chapter.

G. See your instructor and ask him to explain any part of the reading assignment that you do not understand.

H. View Audio Visuals: (At Instructor’s Discretion) Student must take notes.
   1. View Resource 1405-13 on Ten Rules for Success

I. See your instructor and ask him if there is any other information that you should view or read that pertains to this module.

J. Refer to the Laboratory Learning Activities (Lab Sheet) in this module book and complete the Learning Activities for this module (See your instructor).

K. Review for Module 1405-01 Written Exam: Study all previous assignments in this module. See your instructor and ask him to explain any area that you do not understand.
L. Module 1405-01 Written Exam: (See your instructor)

M. Critique Module 1405-01 Written Exam: (See your instructor.)

N. Performance Exam Module 1405-01: Refer to the Laboratory Learning Activities (Lab Sheet) in this module book and complete the Performance exam for this module. (See your instructor)

O. Certificate students should complete this module by the end of the 2nd week.

II. Module 1405-02: Basic First Aid

A. Time
   Certificate student: 10 clock hours
   Degree student: 2 weeks

B. Learning Outcomes: Upon completion of this module the student will:
   1. **Explain basic first aid. (C7, 19) (F6)**

C. Read Fact Sheet 1405-02-01, on First-Aid for Major Emergencies.

D. Read Fact Sheet 1405-02-02, on Common Emergencies.

E. See your instructor and ask him to explain any part of the reading assignment that you do not understand.

F. View Audio Visuals: (See your instructor) **Student must take notes.**
   1. View Resource 1405-16 on Basic First Aid.
   2. View Resource 1405-17 on First Aid for Accidents.

G. See your instructor and ask him if there is any other information that should viewed or read that pertains to this module.

H. Refer to the Laboratory Learning Activities (Lab Sheet) in this module book and complete the Learning Activities for this module (See your instructor)

I. Review for Module 1405-02 Written Exam: Study all previous assignments in this module. See your instructor and ask him to explain any area that you do not understand.

J. Module 1405-02 Written Exam: (See your instructor.)

K. Critique Module 1405-02 Written Exam: (See your instructor.)

L. Performance Exam 1405-02: Refer to the Laboratory Learning Activities (Lab
Sheet) in this module book and complete the Performance exam for this module. (See your instructor.)

M. Certificate students should complete this module by the end of the 21\textsuperscript{st} clock hour. Degree students should complete this module by the end of the 4\textsuperscript{th} week.

III. Module 1405-03: Hazardous Communications and Shop Safety

A. Time
Certificate students: 12 clock hours
Degree students: 1 week

B. Learning Outcomes: Upon completion of this module the student will:
1. Demonstrate safe, professional, and responsible work practices. (C18, 19)
2. Explain OSHA, the Hazardous Communications Acts, Right to Know Requirements and use protective clothing. (C7)(F6)
3. Identify and use protective clothing. (C7)(F6)

C. Read Fact Sheet 1405-03-01 to learn about the Occupational Safety and Health Act.

D. Read Fact Sheet 1408-03-02 to learn about Hazard Communications.

E. Read Fact Sheet 1405-03-03 to learn about The Safety Factor.

F. Read Fact Sheet 1405-03-04 to learn about Shop Safety.

G. Read Chapter 3 in Resource 1405-01 (Textbook) and answer all review questions at the end of the chapter.

H. See your instructor and ask him to explain any part of the reading assignment that you do not understand.

I. View Audio Visuals: (See your instructor) **Student must take notes.**


J. See your instructor and ask him if there is any other information that should
viewed or read that pertains to this module.

K. Refer to the Laboratory Learning Activities (Lab Sheet) in this module book and complete the Learning Activities for this module (See your instructor)

L. Review for Module 1405-03 Written Exam: Study all previous assignments in this module. See your instructor and ask him to explain any area that you do not understand.

M. Module 1405-03 Written Exam: (See your instructor.)

N. Critique Module 1405-03 Written Exam: (See your instructor.)

O. Performance Exam 1405-03: Refer to the Laboratory Learning Activities (Lab Sheet) in this module book and complete the Performance exam for this module. (See your instructor.)

P. Certificate students should complete this module by the end of the 33RD clock hour. Degree students should complete this module by the end of the 5TH week.

IV. Module 1405-04: Classes of Fire Extinguishers

A. Time
Certificate Students: 4 Clock Hours
Degree Students: 1 Week

B. Learning Outcomes: Upon completion of this module the student will:

1. Identify and explain the use of various types of fire extinguishers. (C7)(F6)
2. Name and classes of fires and explain them. (C7)(F6)

C. Read Fact Sheet 1405-04-01, on Fire Safety.

D. Review Chapter 3 in Resource 1405-01 (Textbook) as needed.

E. See your instructor and ask him to explain any part of the reading assignment that you do not understand.

F. View Audio Visuals: (See your instructor) Student must take notes.


G. See your instructor and ask him if there is any other information that should be viewed or read that pertains to this module.
H. Refer to the Laboratory Learning Activities (Lab Sheet) in this module book and complete the learning activities for this module. (See your instructor)

I. Review for Module 1405-04 Written Exam: Study all previous assignments in this module. See your instructor and ask him to explain any area that you do not understand.

J. Module 1405-04 Written Exam: (See your instructor)

K. Critique Module 1405-04 Written Exam: (See your instructor)

L. Performance Exam Module 1405-04: Refer to the Laboratory Learning Activities (Lab Sheet) in this module book and complete the Performance exam for this module. (See your instructor.)

M. Certificate students should complete this module by the end of the 37th clock hour. Degree students should have completed this module by the end of the 6th week.

V. Module 1405-05: Perform Mathematical Operations

A. Time
   Certificate Students: 5 Clock Hours
   Degree Students: 1 Week

B. Learning Outcomes: Upon completion of this module the student will:
   1. Perform mathematical operations (add, subtract, multiply, divide whole numbers, fractions, decimals, and percentages. (F3)(F4)

C. Read Fact Sheet 1405-05-01.

D. See your instructor and ask him to explain any part of the reading assignment that you do not understand.

E. View Audio Visually: None for this module.

F. See your instructor and ask him if there is anything else that should be viewed or read that pertains to this module.

G. Refer to the Laboratory Learning Activities (Lab Sheet) in this module book and complete the learning activities for this module. (See your instructor)

H. Review for Module 1405-05 Written Exam: Study all previous assignments in this module. See your instructor and ask him to explain any area that you do not understand.
understand.

I. Module 1405-05 Written Exam: (See your instructor)

J. Critique Module 1405-05 Written Exam: (See your instructor.)

K. Performance Exam Module 1405-05: Refer to the Laboratory Learning Activities (Lab Sheet) in this module book and complete the Performance exam for this module. (See your instructor.)

L. Certificate students should complete this module by the end of the 42nd clock hour. Degree students should complete this module by the end of the 7th week.

VI. Module 1405-06: Measuring Systems

A. Time
   Certificate Students: 5 Clock Hours
   Degree Students: 1 Week

B. Module Learning Outcomes: Upon completion of this module the student will:
   1. Use customary and Metric Measuring Systems. (C18)(F3)(F4)

C. Read Fact Sheet 1405-06-01 on System of Measurements.

D. Read Chapter 6 in Resource 1405-01 (Textbook) and answer all review questions at the end of the chapter.

E. See your instructor and ask him to explain any part of the reading assignment that you do not understand.

F. View Audio Visuals: (See your instructor) **Student must take notes.**
   1. View Resource 1405-11 on Customary Units of Measurements. (Refer to Fact Sheet 1405-06-02 for Instructions.
   2. View Resource 1405-12 on the Metric System of Measurements (Refer to Fact Sheet 1405-06-02 for instructions)
   3. View Resource 1405-05 on Reading a Ruler.

G. See your instructor and ask him if there is any other information that should be viewed or read that pertains to this module.

H. Refer to the Laboratory Learning Activities (Lab Sheet) in this module book and complete the learning activities for this module. (See your instructor)
I. Review for Module 1405-06 Written Exam: Study all previous assignments in this module. See your instructor and ask him to explain any area that you do not understand.

J. Module 1405-06 Written Exam: (See your instructor)

K. Critique Module 1405-06 Written Exam: (See your instructor)

L. Performance Exam Module 1405-06: Refer to the Laboratory Learning Activities (Lab Sheet) in this module book and complete the Performance exam for this module. (See your instructor.)

M. Certificate students should complete this module by the end of the 47th clock hour. Degree students should have completed this module by the end of the 8th week.

VII. Module 1405-07: Precision Measuring Devices

A. Time
   Certificate Students: 7 Clock Hours
   Degree Students: 1 Week

B. Module Learning Outcomes: Upon completion of this module the student will:
   1. Identify and use precision measuring devices. (C18)

C. Review Chapter 6 in Resource 1405-01 (Textbook) as needed.

D. See your instructor and ask him to explain any part of the reading assignment that you do not understand.

E. View Audio Visuals: (See your instructor) **Student must take notes.**

F. See your instructor and ask him if there is any other information that should be viewed or read that pertains to this module.

G. Refer to the Laboratory Learning Activities (Lab Sheet) in this module book and complete the learning activities for this module. (See your instructor)

H. Review for Module 1405-07 Written Exam: Study all previous assignments in this module. See your instructor and ask him to explain any area that you do not understand.
I. Module 1405-07 Written Exam: (See your instructor)

J. Critique Module 1405-07 Written Exam: (See your instructor)

K. Performance Exam Module 1405-07: Refer to the Laboratory Learning Activities (Lab Sheet) in this module book and complete the Performance exam for this module. (See your instructor.)

L. Certificate students should complete this module by the end of the 54th clock hour. Degree students should have completed this module by the end of the 9th week.

VIII. Module 1405-08: Tools and Fasteners

A. Time
Certificate Students: 20 Clock Hours
Degree Students: 3 Week

B. Learning Outcomes: Upon completion of this module the student will:

1. Identify and demonstrate the proper use of shop equipment and tools. (C20)
2. Identify various automotive fasteners used in the industry. (C7)
3. Perform soldering operations. (C19)

C. Read Chapters 7, 8, 9, 11, and 51 in Resource 1405-01 (Textbook) and answer all review questions at the end of each chapter, and be familiar with Appendix A, pgs 1391 thru 1402.

D. Read Fact Sheet 1405-08-01, on Other Cutting Tools.

E. Read Fact Sheet 1405-08-02, on Bench Grinders.

F. Read Fact Sheet 1405-08-03, on Drill Press, Portable Drills and Drill Bits.

G. Read Fact Sheet 1405-08-04, on Taps.

H. Read Fact Sheet 1405-08-05, on Dies.

I. Read Fact Sheet 1405-08-06, on Lifting Devices.

J. Read Fact Sheet 1405-08-07, on Soldering Tools and Equipment.

K. Read Fact Sheet 1405-08-08, on Diagnostic Tools and Test Equipment.

L. Read Fact Sheet 1405-08-09, on Hydraulic Presses and Porta-Power.
M. See your instructor and ask him to explain any part of the reading assignment that you do not understand.

N. View Audio Visuals: (See your instructor) **Students must take notes.**

3. View Resource 1405-33 on Removing Broken Fasteners.
4. View Resource 1405-34 on Soldering Tools & Techniques.

O. See your instructor and ask him if there is any other information that should be viewed or read that pertains to this module.

P. Refer to the Laboratory Learning Activities (Lab Sheet) in this module book and complete the Learning Activities for this module. (See your instructor).

Q. Review for Module 1405-08 Written Exam: Study all previous assignments in this module. See your instructor and ask him to explain any area that you do not understand.

R. Module 1405-08 Written Exam: (See your instructor)

S. Critique Module 1405-08 Written Exam. (See your instructor)

T. Performance Exam Module 1405-08: Refer to the Laboratory Learning Activities (Lab Sheet) in this module and complete the Performance Exam for this module (See your instructor)

U. Certificate students should complete this module by the end of the 74\textsuperscript{th} clock hour. Degree students should complete this module by the end of the 12\textsuperscript{th} week.

IX. Module 1405-09 Mechanical Power Transmission

A. Time
   
   Certificate Students: 5 Clock Hours
   
   Degree Students: 1 Week

B. Learning Outcomes: Upon Completion of this module the student will:

1. Identify and properly use sealants. (C7)
2. Identify and explain the uses of seals and bearings. (C7)(F6)
C. Read Chapters 17, 22, 23, 24, 60, and review 51 as needed in Resource 1405-01 (Textbook) and answer all review questions at the end of the chapter.

D. Read Fact Sheet 1405-09-01 on Bearings.

E. Read Fact Sheet 1405-09-02 on Gears.

F. Read Fact Sheet 1405-09-03 on Drive Belts and Pulleys.

G. Read Fact Sheet 1405-09-04 on Gaskets, Seals, and Sealants.

H. See your instructor and ask him to explain any part of the reading assignment that you do not understand.

I. View Audio Visuals: (See your instructor) **Student must take notes.**
   
   2. View Resource 1405-38 on Seals, O-Rings, and Gaskets.

J. See your instructor and ask him if there is any other information that should be viewed or read that pertains to this module.

K. Refer to the Laboratory Learning Activities (Lab Sheet) in this module book and complete the learning activities for this module. (See your instructor)

L. Review for Module 1405-09 Written Exam: Study all previous assignments in this module. See your instructor and ask him to explain any area that you do not understand.

M. Module 1405-09 Written Exam: (See your instructor)

N. Critique Module 1405-09 Written Exam: (See your instructor)

O. Performance Exam Module 1405-09: Refer to the Laboratory Learning Activities (Lab Sheet) in this module book and complete the Performance exam for this module. (See your instructor.)

P. Certificate students should complete this module by the end of the 79th clock hour. Degree students should have completed this module by the end of the 13th week.
X. Module 1405-10: Automotive Fuels and Lubricants

A. Time
Certificate Students: 5 Clock Hours
Degree Students: 1 Week

B. Learning Outcomes: Upon Completion of this module the student will:

1. Explain the uses of automotive fuels, lubricants, and fluids. (C7)

C. Read Chapter 12 and 39 in Resource 1405-01 (Textbook) and answer all review questions at the end of the chapter.

D. Read Fact Sheet 1405-10-01 on Grease.

E. View Audio Visuals: (See your instructor) Student must take notes.
   1. View Resource 1405-41 on Straight Talk about Motor Oil.

F. See your instructor and ask him to explain any part of the assignment that you do not understand.

G. Refer to the Laboratory Learning Activities (Lab Sheet) in this module book and complete the learning activities for this module. (See your instructor)

H. Review for Module 1405-10 Written Exam: Study all previous assignments in this module. See your instructor and ask him to explain any area that you do not understand.

I. Module 1405-10 Written Exam: (See your instructor)

J. Critique Module 1405-10 Written Exam: (See your instructor)

K. Performance Exam Module 1405-10: Refer to the Laboratory Learning Activities (Lab Sheet) in this module book and complete the Performance exam for this module. (See your instructor.)

L. Certificate students should complete this module by the end of the 84th clock hour. Degree students should have completed this module by the end of the 14th week.

XI. Module 1405-11: Cleaning Methods and Equipment

A. Time
Certificate Students: 5 Clock Hours
Degree Students: 1 Week

B. Module Learning Outcomes: Upon completion of this module the student will:

1. Use cleaning methods and equipment (C18, 19, 20)

C. Read Chapter 10 in Resource 1405-01 (Textbook) and answer all review questions at the end of the chapter.

D. Read Fact Sheet 1405-11-01, on Cleaning Methods and Equipment.

E. Read Fact Sheet 1405-11-02, on Enviro-Equip Parts Washer.

F. See your instructor and ask him to explain any part of the reading assignment you do not understand.

G. View Audio Visuals: (See your instructor)
There are no Audio Visuals for this module.

H. See your instructor and ask him if there is any other information that should be viewed or read that pertains to this module.

I. Refer to the Laboratory Learning Activities (Lab Sheet) in this module book and complete the learning activities for this module. (See your instructor)

J. Review for Module 1405-11 Written Exam: Study all previous assignments in this module. See your instructor and ask him to explain any area that you do not understand.

K. Module 1405-11 Written Exam: (See your instructor)

L. Critique Module 1405-11 Written Exam: (See your instructor)

M. Performance Exam Module 1405-11: Refer to the Laboratory Learning Activities (Lab Sheet) in this module book and complete the Performance exam for this module. (See your instructor.)

N. Certificate students should complete this module by the end of the 89th clock hour. Degree students should have completed this module by the end of the 15th week.

XII. Module 1405-12: Publications, Work Requests and Trade Terminology

A. Time
Certificate Students: 5 Clock Hours
Degree Students: 1 Week
B. Learning Outcomes: Upon completion of this module the student will:

1. Demonstrate the use of service publications (C7),(F1)

C. Read Chapters 3, 4,5and 5 in Resource 1405-01 (Textbook) and answer all the review questions at the end of the chapter.

D. Read Fact Sheet 1405-12-01, on Trade Terms.

E. Read Fact Sheet 1405-12-02, on Service Publications.

F. See your instructor and ask him to explain any part of the assignment that you do not understand.

G. View Audio Visuals: (See your instructor) **Student must take notes.**

1. View Resource 1405-06 (Mitchells on Demand System) as required to complete Worksheet 1405-12-01.

I. See your instructor and ask him if there is any other information that should be viewed or read that pertains to this module.

J. Refer to the Laboratory Learning Activities (Lab Sheet) in this module book and complete the learning activities for this module. (See your instructor)

K. Review for Module 1405-12 Written Exam: Study all previous assignments in this module. See your instructor and ask him to explain any area that you do not understand.

L. Module 1405-12 Written Exam: (See your instructor)

M. Critique Module 1405-12 Written Exam: (See your instructor)

N. Performance Exam Module 1405-12: Refer to the Laboratory Learning Activities (Lab Sheet) in this module book and complete the Performance exam for this module. (See your instructor.)

O. Certificate students should complete this module by the end of the 94th clock hour. Degree students should have completed this module by the end of the 15th week.

XIII. Module 1405-13: Exit Exam

A. Time
Certificate Students: 2 Clock Hours
Degree Students: 1Week

B. Learning Outcomes: Upon completion of this module the student will:

1. Complete the Exit Exam.

C. Review all previous assignments in this module.

D. See your instructor and ask him to explain anything that you do not understand pertaining to this course.

E. Module 1405-13 Written (Exit) Exam: (See your instructor)

F. Critique Module 1405-13 Written (Exit) Exam: (See your instructor)

G. End of Course Critique and enrollment in the next course in the program (See your instructor.)

H. Certificate students should complete this module by the end of the 96th clock hour. Degree students should have completed this module by the end of the 16th week.