

## **Introduction and Theory of Automotive Technology (AUMT 1301)**



**Credit:** 3 semester credit hours (3 hours lecture)

**Prerequisite/Co-requisite:** None

### **Course Description**

An introduction to the automobile industry including automotive history, safety practices, shop equipment and tools, vehicle subsystems, service publications, fasteners, professional responsibilities, and automobile maintenance. This is a Tech Prep course.

### **Required Textbook and Materials**

1. **Modern Automotive Technology**  
Author: James E. Duffy  
Publisher The Goodheart – Willcox Company  
ISBN 1-5970-956-6
2. **Modern Automotive Technology- Work Book**  
Author: James E. Duffy  
Publisher The Goodheart – Willcox Company  
ISBN 1-5970-958-0
3. Notebook and 8.5" x 11" notebook paper
4. Blue and Black ink pens

### **Course Objectives**

Upon completion of this course, the student will be able to:

1. Explain the history of the automobile and career possibilities of the automobile industry. F1.4, F2.3, F3.3, F4.1, F10.2, F11.3, C5.2, C9.1, C15.4, C20.4
2. Explain safe, professional, and responsible work practices. F1.4, F2.3, F3.3, F4.1, F10.2, F11.3, C5.2, C9.1, C15.4, C20.4
3. Identify and explain proper use of shop tools and equipment. F1.4, F2.3, F3.3, F4.1, F10.2, F11.3, C5.2, C9.1, C15.4, C20.4
4. Explain functions of vehicle subsystems and explain the use of service publications. F1.4, F2.3, F3.3, F4.1, F10.2, F11.3, C5.2, C9.1, C15.4, C20.4
5. Identify the various automobile fasteners used in industry explain automotive maintenance. F1.4, F2.3, F3.3, F4.1, F10.2, F11.3, C5.2, C9.1, C15.4, C20.4

### **SCANS Skills and Competencies**

Beginning in the late 1980's, the U.S. Department of Labor Secretary's Commission on Achieving Necessary Skills (SCANS) conducted extensive research and interviews with business owners, union leaders, supervisors, and laborers in a wide variety of work settings to determine what knowledge workers needed in order to perform well on a job. In 1991 the Commission announced its findings in *What Work Requires in Schools*. In its

AUMT 1301  
Course Syllabus

research, the Commission determined that “workplace know-how” consists of two elements: foundation skills and workplace competencies.

## Course Outline

- A. Safety and Shop Policy
  - 1. General shop safety
  - 2. Types of shop accidents
  - 3. Personal safety precautions
- B. Automotive Career
  - 1. Preparing for career
  - 2. On the job traits
  - 3. Workplace skill
  - 4. Specialty Certification
- C. Service Information and Work Orders
  - 1. Using a Service Manual
  - 2. Service Publications (TSB’S)
  - 3. Computer-Based Service Data
  - 4. Work orders
- D. Tool Identification and use
  - 1. Safety in tool use
  - 2. Proper use
  - 3. Hand tools
  - 4. Measuring tools
  - 5. Special tools
  - 6. Power tools
- E. Fasteners identification
  - 1. Type of Fasteners
  - 2. Metric bolts and torque
  - 3. Determine sizes
  - 4. Threads pitch
  - 5. Sealant use on engine
- F. Automotive Calculations
  - 1. Measuring systems
  - 2. Measuring tools
- G. Engine Systems
  - 1. Parts, assemblies, and systems
  - 2. Four stroke cycle
  - 3. Engine Design
- I. Vehicle Maintenance
  - 1. Lubrication systems
  - 2. Fluid service
  - 3. Filter service
  - 4. Chassis lubrication
  - 5. Service intervals
  - 6. Recycling and service
  - 7. Engine inspection
  - 8. Over of vehicle drivability
- J. Basic Electrical and Electronics
  - 1. Electrical and Electronics
  - 2. Wiring and Testing
  - 3. Customer Relation

## Grade Scale

90 – 100	=	A
80 – 89.9	=	B
70 – 79.9	=	C
60 – 69.9	=	D
0 – 59.9	=	F

## Course Evaluation

Final grades will be calculated according to the following criteria:

Daily work, quizzes, and homework assignment.	<b>40%</b>
Test over Lecture and Chapters	<b>30%</b>
Outside assignment or class presentation.	<b>10%</b>
<u>Final Exam</u>	<b><u>20%</u></b>
<b><i>Total</i></b>	<b><i>100%</i></b>

## Course Requirements

1. Complete specific reading assignments in a timely manner specified by the instructor.
2. Seek out available material on the subject being taught, utilizing the library, periodicals and / or the Internet.
3. Wear sleeved shirts, full length jeans or work pants and preferably leather shoes to class and on campus. No shorts or tank tops are allowed.
4. Participate in project interview when offered.
5. Complete all work book and class assignments.
6. Be present at class sessions and examinations as scheduled.

## Attendance Policy

1. Missing more than 20% of classes will result in an automatic "F" for the course.
2. Absences are counted for unexcused, excused and coming to class late.
3. Missing more than 20% of a class period will count as an absence.
4. Being tardy 3 times equals 1 absence.

If you wish to drop, you are responsible for the drop process. I will not initiate the drop, no matter how many absences or zeroes you have; that is, if you stop coming to class and do not drop, you will earn an F in the course. *Students are allowed only 6 drops, from any public Institute of higher education, in their lifetime*

## Course Policies

1. **No Cell Phone or Electronic Devices** allowed in class, except in special circumstances and it is approved by the instructor.

*All cell phones must be turned off and put away. Text messaging during class time will not be tolerated. Text messaging during an exam will be considered academic dishonesty. The exam will be considered over and the student will receive a zero for the exam.*

2. **No** smoking or use of any **tobacco** products allowed.
3. Do not bring any **food** or **drinks** in class.
4. No visitor allowed in class including children.
5. Do not disturb lecture for any reason. If you must leave class or come in late, do so without disturbing class.
6. **DRESS CODE: Proper work attire only, NO Open shoes, Short pants, low riding, or sleeveless shirts, will be allowed in any program classrooms.**
7. **No** grades will be **dropped**, No homework or assignments can be made up or accepted after instructor has taken up for grading.
8. **Homework** must be done **in proper outline form, neat and legible**, prepared on **loose leaf (8.5" X 11") note book paper**, written only on **one** side.
9. Assignment must be turn in at the beginning of class.

10. Any student caught cheating will be dropped from class and given an F for the semester grade.

**NOTE:**

**Students who violate any of these policies will be asked to leave class and will be recorded as absent for the class period. Students who continue to disturb classes will be suspended from class for the remainder of the semester and receive a grade of F.**

*Students may vary in their competency levels on these abilities. You can expect to acquire these abilities only if you honor all course policies, attend classes regularly, complete all assigned work in good faith and on time, and meet all other course expectations of you as a student.*

**Disabilities Statement**

The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. Among other things, these statutes require that all students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodations for their disabilities. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409) 880-1737 or visit the office in Student Services, Cecil Beeson Building.

**Course Schedule**

Week	Topic	Reference
1	Course introduction and policies <ul style="list-style-type: none"><li>• Lecture</li><li>• Class discussion</li></ul>	Handouts
2	Auto Shop Safety <ul style="list-style-type: none"><li>• Lecture</li><li>• Chapter assignments</li><li>• Test chapter 5</li></ul>	Chapter 5 Power point
3	Automotive Career <ul style="list-style-type: none"><li>• Lecture</li><li>• Chapter assignments</li><li>• Test chapter 2</li></ul>	Chapter 2 Power point
4/5	Service Information and Work Orders <ul style="list-style-type: none"><li>• Lecture</li><li>• Chapter assignments</li><li>• Test chapter 7</li></ul>	Chapter 7 Power point
6/7	Tool Identification and Use <ul style="list-style-type: none"><li>• Lecture</li></ul>	Chapter 3 & 4 Power point

AUMT 1301  
Course Syllabus

---

	<ul style="list-style-type: none"><li>• Chapter assignments</li><li>• Test chapter 3 &amp; 4</li></ul>	
8	Fasteners Identification <ul style="list-style-type: none"><li>• Lecture</li><li>• Chapter assignments</li><li>• Test chapter 9</li></ul>	Chapter 9 Power point
9/10	Automotive Calculations <ul style="list-style-type: none"><li>• Lecture</li><li>• Chapter assignments</li><li>• Test chapter 6</li></ul>	Chapter 6 Power point
11/12	Engine Systems <ul style="list-style-type: none"><li>• Lecture</li><li>• Chapter assignments</li><li>• Test chapter 1</li></ul>	Chapter 1 Power point
13/14	Vehicle Maintenance <ul style="list-style-type: none"><li>• Lecture</li><li>• Chapter assignments</li><li>• Test chapter 10</li></ul>	Chapter 10 Power point
15	Basic Electrical and Electronics <ul style="list-style-type: none"><li>• Lecture</li><li>• Chapter assignments</li><li>• Test chapter 8</li></ul>	Chapter 8 Power point
14/15/16	Final Project <ul style="list-style-type: none"><li>• Lecture</li><li>• Project: As Assigned</li></ul>	Lecture and Review

---

The course schedule is a proposed schedule. Changes in the schedule may be made based upon the instructor's professional judgment. If you are absent on a day in which changes to the schedule have been announced, it is your responsibility to find out those changes.

**Contact Information**

**Varies by Instructors**