



CREDIT COURSE OUTLINE

I. COVER PAGE

(1) AUTOT 9	(2) Automotive Essentials	(3) 3
Number	Title	Units

(4) Lecture / Lab Hours:			(8) Classification:		
Course Hours					
	Weekly Lec hours:	3.00	Degree applicable:		X
	Weekly Lab hours:		Non-degree applicable:		
	Total Contact hours:	54.00	Basic skills:		
Lec will generate __ hour(s) outside work.			(9)RC Fulfills AS/AA degree requirement: (area)		
Lab will generate __ hour(s) outside work.			General education category:		
(5) Grading Basis:	Grading Scale Only	X	Major:		
	Pass/No Pass option		Certificate of:		
	Pass/No Pass only		Certificate in:		
(6) Advisories:			(10)CSU Baccalaureate: X		
(7) Pre-requisites (requires C grade or better):			(11)Repeatable: (A course may be repeated three times) 0		
Corequisites:			(12)C-ID:		
			Proposed Start Date: Fall 2012		

(12) Catalog Description:
 This course is an overview of the automobile and its basic components. General servicing procedures and basic troubleshooting are included for anyone needing an introduction to the operating principles of the automobile.

II. COURSE OUTCOMES:

(Specify the learning skills the student demonstrates through completing the course and link critical thinking skills to specific course content and objectives.)

Upon completion of this course, students will be able to:

- I. identify and discuss automotive systems and subsystems.
- II. explain normal system operations and malfunction diagnostic strategies.
- III. identify and describe the tools and service equipment used for automotive service and repair.
- IV. demonstrate safe use of hand tools and service equipment.
- V. recommend repair methods and cost estimates for common automotive service and repair.

III. COURSE OBJECTIVES:

(Specify major objectives in terms of the observable knowledge and/or skills to be attained.)

In the process of completing this course, students will:

- I. Describe vehicle operating systems and subsystems.
- II. Analyze vehicle malfunctions.
- III. Demonstrate the safe use of automotive hand tools and shop service equipment.
- IV. Recommend repair methods and cost estimates for vehicle repairs.

IV. COURSE OUTLINE:

Lecture Content:

- A. Introduction
 1. Course orientation
 2. Automotive history
- B. Shop Practice
 1. Hand tools
 2. Shop equipment
 3. Safety
- C. Engines
 1. Engine types

2. Engine operating theory
 3. Engine size measurement and performance
 4. Engine lubrication systems
 5. Engine cooling systems
- D. Basic Fuel Systems
1. Fuel systems components
 2. Principles of carburetion
 3. Principles of fuel injection
 4. Fuel system servicing
 5. Fuel system troubleshooting
- E. Basic Automotive Electrical Systems
1. Fundamentals of electricity
 2. Electrical meter operation
 3. Electronic test equipment
 4. Electrical/electronic components
 5. Starting systems
 6. Charging systems
 7. Troubleshooting electrical systems
- F. Basic Ignition Systems
1. Ignition system components and wiring
 2. Operation of battery ignition system
 3. Servicing and troubleshooting ignition systems
- G. Preventive Maintenance
1. Vehicle safety and maintenance inspection
 2. General servicing procedures
- H. Power Train
1. Clutch construction and operation
 2. Manual transmission
 3. Automatic transmissions
 4. Drive lines
 5. Differential construction, operation and service
 6. Basic power train servicing and adjustment procedures
- I. Brake System
1. Brake theory of operation
 2. Brake servicing and adjustment
 3. Power brake operation
- J. Steering System
1. Power steering systems
 2. Servicing and alignment
- K. Chassis and Suspension system
1. Basic components
 2. Operation and servicing
- L. Writing service estimates
1. The legal aspects of the law
 2. Write it correctly.

V. APPROPRIATE READINGS

Reading assignments may include but are not limited to the following:

I. Sample Text Title:

1. Recommended - Giles, T *Automotive Services: Inspection, Maintenance, Repair*, ed. 4th Delmar, 2011,

II. Other Readings

1. Recommended - *Shop manuals and computer service data*

Global or international materials or concepts are appropriately included in this course

Multicultural materials and concepts are appropriately included in this course

If either line is checked, write a paragraph indicating specifically how global/international and/or multicultural materials and concepts relate to content outline and/or readings.

VI. METHODS TO MEASURE STUDENT ACHIEVEMENT AND DETERMINE GRADES:

Students in this course will be graded in at least one of the following four categories. Please check those appropriate. A degree applicable course must have a minimum of one response in category A, B, or C.

A. Writing			
Check either 1 or 2 below			
X	1. <i>Substantial writing assignments are required. Check the appropriate boxes below and provide a written description in the space provided.</i>		
	2. <i>Substantial writing assignments are NOT required. If this box is checked leave this section blank. For degree applicable courses you must complete category B and/or C.</i>		
	a) essay exam(s)		d) written homework
X	b) term or other paper(s)		e) reading reports
X	c) laboratory report(s)	X	f) other (specify) Repair orders

Required assignments may include but are not limited to the following:

Repair orders
Diagnostic strategies
Sample question:

Explain the operation of the engine cooling system.

B. Problem Solving			
Computational or non-computational problem-solving demonstrations, including:			
X	a) exam(s)	X	d) laboratory reports
X	b) quizzes		e) field work
	c) homework problems	X	f) other (specify): cost estimates

Required assignments may include but are not limited to the following:

Diagnostic strategies
Cost estimates

Sample question:

What are the cycles of a four stroke engine?

- a. Intake, compression , power, and exhaust
- b. Intake, Air/fuel, ignition, and exhaust
- c. Intake, power, ignition, and Air/Fuel
- d. Intake, compression. ignition, and power

C. Skill demonstrations, including:			
X	a) class performance(s)		c) performance exams(s)
	b) field work		d) other (specify)

Required assignments may include but are not limited to the following:

D. Objective examinations including:			
X	a) multiple choice		d) completion
X	b) true/false		e) other (specify):
	c) matching items		

COURSE GRADE DETERMINATION:

Description/explanation: Based on the categories checked in A-D, it is the recommendation of the department that the instructor's grading methods fall within the following departmental guidelines; however, the final method of grading is still at the discretion of the individual instructor. The instructor's syllabus must reflect the criteria by which the student's grade has been determined. (A minimum of five (5) grades must be recorded on the final roster.)

If several methods to measure student achievement are used, indicate here the approximate weight or percentage each has in determining student final grades.

25% written assignments 25% quizzes 50% exams

VII. EDUCATIONAL MATERIALS

For degree applicable courses, the adopted texts, as listed in the college bookstore, or instructor-prepared materials have been certified to contain college-level materials.

Validation Language Level (check where applicable):

Textbook
Reference materials

College-Level Criteria Met	
YES	NO
<u> X </u>	<u> </u>
<u> X </u>	<u> </u>

Instructor-prepared materials	_____	<u> X </u>
Audio-visual materials	_____	<u> X </u>

Indicate Method of evaluation:

Used readability formulae (grade level 10 or higher)	<u> X </u>
Text is used in a college-level course	<u> X </u>
Used grading provided by publisher	_____
Other: (please explain; relate to Skills Levels)	_____

<i>Computation Level</i> (Eligible for MATH 101 level or higher where applicable)	<u> X </u>	_____
Content		
Breadth of ideas covered clearly meets college-level learning objectives of this course	<u> X </u>	_____
Presentation of content and/or exercises/projects:		
Requires a variety of problem-solving strategies including inductive and deductive reasoning.	<u> X </u>	_____
Requires independent thought and study	<u> X </u>	_____
Applies transferring knowledge and skills appropriately and efficiently to new situations or problems.	<u> X </u>	_____

List of Reading/Educational Materials
 Recommended - Giles, T *Automotive Services: Inspection, Maintenance, Repair*, ed. 4th Delmar, 2011,

Comments:

_____	This course requires special or additional library materials (list attached).
<u> X </u>	This course requires special facilities: Automotive Laboratory

Attached Files:

BASIC SKILLS ADVISORIES PAGE The skills listed are those needed for eligibility for English 125, 126, and Math 201. These skills are listed as the outcomes from English 252, 262, and Math 250. In the right hand column, list at least three major basic skills needed at the beginning of the target course and check off the corresponding basic skills listed at the left.

Check the appropriate spaces.

_____ Eligibility for Math 201 is advisory for the target course.
 _____ Eligibility for English 126 is advisory for the target course.
 _____ Eligibility for English 125 is advisory for the target course.

If the reviewers determine that an advisory or advisories in Basic Skills are all that are necessary for success in the target course, stop here, provide the required signatures, and forward this form to the department chair, the appropriate associate dean, and the curriculum committee.

REQUISITES
No requisites

JUSTIFICATION OF LIMITATION ON ENROLLMENT

Enrollment in courses or blocks of courses may be limited based on performance, honors, or other performance based criteria. Be mindful of the disproportionate impact the limitation will have on specific groups of students. It is important to determine if the limitation will disproportionately keep under-represented students from enrolling in the course or block of courses.

Describe the reasons for limiting the enrollment.

Course Designator: AUTOT 9
Course Title(s): Automotive Essentials
Rationale for Limiting Enrollment: 0

