

SYLLABUS

Division: Business & Engineering Technologies REVISED: Fall 2012
Curricula in Which Course is Taught: Automotive Analysis & Repair
Course Number and Title: AUT 127 Topics in Automotive
Lubrication & Cooling Systems
Course Credits 3 Lecture 2 Hours/Week Laboratory 3 Hours/Week

I. Course Description:

Analyzes lubrication systems to include lubricants, pumps, lines, filters, and vents. Also analyzes cooling systems, coolants, pumps, fans, and connections. Teaches estimating repairs, adjustments needed and their costs.

II. Relationship of the Course to Curriculum Objectives:

Students will:

- I. demonstrate technical competencies & skills in automotive maintenance
- II. demonstrate punctuality & reliability acceptable to the auto repair industry
- III. use safety equipment & procedures required for the tasks being performed
- IV. read & interpret technical information required for projects & assignments
- V. demonstrate and maintain a clean, orderly, safe & attractive work place & maintain a personal appearance that will enhance that work place

III. Requirements:

Textbook: Modern Automotive Technology by James E. Duffy, latest edition, published by Goodheart-Willcox. The Student must have work clothes and a tool set available each day.

IV. Course Objectives-ASE task list:

**Perform oil pressure test; determine action
Inspect oil pump and assemblies; replace or repair
Perform cooling system; pressure leakage and temperature tests
Inspect, replace, and adjust drive belts and tensioners
Inspect and replace radiator and heater hoses
Inspect, test and replace thermostat
Test coolant; drain & recover, flush and fill cooling system
Inspect, test, replace water pump
Remove and replace radiator
Inspect, test & replace fan, fan clutch & shroud
Inspect, test & replace oil cooler if needed
Inspect, test and replace oil temperature and pressure switches and sensors
Perform oil and filter change**

V. Learner Outcomes:

evaluated by multiple-choice, fill in the blank or true/false tests:

1. identify the industry standards for motor oil
2. identify the correct cooling system pressures & coolant mixtures
3. diagnose engine failures due to cooling or lubrication system failures
4. identify the causes for engine oil or coolant contamination
5. identify correct repair procedures for lubrication & cooling systems

VI. Evaluation: by active participation in team projects:

6. participate in the dismantling & cleaning of an engine
7. participate in precision measurement of worn surfaces
8. participate in checking proper oil clearances
9. participate in inspection of the lubrication & cooling system
10. participate in repair of lubrication & cooling system

- 11. **participate in the completion of an engine rebuild project**
- 12. **75% of the students will be able to complete these assignments**

V11. **The following General Education Objectives will be addressed in this course:**

- Communications**
- Learning Skills**
- Critical Thinking**
- Interpersonal Skills and Human Relations**
- Computational and Computer Skills**
- Understanding Culture and Society**
- Understanding Science and Technology**
- Wellness**