SOUTHEAST COMMUNITY COLLEGE
TRANSPORTATION OCCUPATIONS
AUTOMOTIVE TECHNOLOGY
COURSE SYLLABUS
July 1, 2019

I. CATALOG DESCRIPTION

Course Number: AUTT1003
Course Title: Small Engines
Prerequisite: None

Catalog Description : This course covers all aspects of the small gas engine including; safety, hand tools, electrical, fuel system, engines. The class also covers small engine overhaul and preventive maintenance.

Credit Hours: 3.0
Class Hours: 30
Lab Hours: 45
Total Contact Hours: 75

II. COURSE OBJECTIVES: *Course will:*

A. Cover the major systems and components of the small engine.
B. Cover the various types of electrical components.
C. Cover the disassembly, inspection, and reassembly of the small gas engine.
D. Cover safety in the shop.
E. Cover tool Identification and proper usage.
F. Cover general small engine maintenance and repair.
G. Cover fuels used in small engines.
H. Cover proper storage of small engines.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

A. STUDENT LEARNING OUTCOMES: *The student will be able to:*

1. List the major systems and components of the small engine.
2. Describe how energy, work, force, and power relate to one another.
3. Explain the conversion of energy into motion.
4. Explain the importance of awareness when approaching the small engine.
5. List the levels of commitment for maintenance of the small engine.
6. List the safety precautions of small engine care.
7. List the different tasks and tools necessary for the different levels of commitment.
8. Describe the operating principles of the engine.
9. Explain the four-stroke cycle and the function of each of the four strokes.
10. Describe the coordination and operation of the valvetrain.
11. Explain the operation of the camshaft.
12. Explain the importance of routine engine maintenance.
13. List some of the common engine problems.

14. List major components of the fuel system.
15. Describe the operation of the fuel system.
16. List the maintenance items of the fuel system.
17. List some common problems in the fuel system.
18. List the various types of electrical components.
19. Describe the importance of the battery and its maintenance.
20. List some common problems in the electrical system.
21. List the major components of the lubrication and cooling systems.
22. Describe safety precautions for the lubrication and cooling systems.
23. Describe common problems that occur in the lubrication and cooling systems.

B. GENERAL EDUCATION LEARNING OUTCOMES:

GELO #3 Critical Thinking & Problem Solving

Outcomes:

1. Collect, identify, interpret and analyze data.
2. Synthesize information to arrive at reasoned solutions to problems.
3. Evaluate ideas presented in writing, medial, speech, or artistic presentations.
4. Evaluate the validity of arguments, alternatives, data, outcomes, and/or impacts of actions.
5. Acquire and integrate knowledge and construct relationships across disciplines.

IV. CONTENT/TOPICAL OUTLINE

A. Tooling up
1. Safety
2. Inspection and basic maintenance
3. Basic tools
4. Maintenance and minor repairs
5. Tune-up and basic electrical

B. The Engine
1. The basic gasoline engine
2. Routine engine maintenance
3. Engine problems

C. The electrical system
1. The battery
2. The starting system
3. The charging system
4. The ignition system
5. Other electrical devices
6. Electrical system maintenance

D. The lubricating and cooling system
1. The lubrication system
2. The cooling system
3. The maintenance of the lubrication and cooling systems

E. The fuel system

1. Gasoline
2. The fuel delivery system
3. Fuel system maintenance

V. INSTRUCTIONAL MATERIALS

A. **Small Gas Engines**, 11th edition Roth/Fisher/Gauthier, Goodheart-Wilcox Company INC. ISBN 978-1-63126-390-3

VI. METHODS OF PRESENTATION

A. Methods of presentation typically include a combination of the following:

1. Lecture
2. Small and large group discussion
3. Video presentation
4. Transparencies
5. Demonstrations
6. Project boards
7. Flip charts
8. Handouts
9. Observations
10. Fieldtrips

VII. METHODS OF EVALUATION

A. Methods of evaluation typically include a combination of the following:

1. Notebook (if required)
2. Quizzes
3. Tests
4. Lab grades
5. Attendance/class conduct

Letter grades will be based on the SCC Standard Grading Scale Policy. **Note:** See the course outline for specific details on how the course grade will be calculated.

VIII. SPECIFIC COURSE REQUIREMENTS

A. Student must:

1. Complete all tests, projects, assignments, and (if assigned) notebook.
2. Earn a final grade of 70% (2.0) or higher.

B. Attendance:

1. Student must follow the Attendance Policy as stated in the college student handbook, automotive lab & classroom policies handbook or course outline.

C. Shop safety rules will be followed.

D. Additional course requirements.