

COURSE SYLLABUS

LAST REVIEW	Fall 2022
COURSE TITLE	Automotive Shop Operations and Safety
COURSE NUMBER	AUTT-0103
DIVISION	Career and Technical Education
DEPARTMENT	AUTT
CIP CODE	47.0604
CREDIT HOURS	2
CONTACT HOURS/WEEK	Class: 2 Lab: 0
PREREQUISITES	None
COREQUISITES	None
COURSE PLACEMENT	None

COURSE DESCRIPTION

This class is a prerequisite for the Automotive Technology Program. In this course, students will study and perform tasks from the National Automotive Technicians Education Foundation's (NATEF) Maintenance and Light Repair (MLR) Program. Students will be introduced to automotive technology, careers in automotive, safety, service information, tools and equipment, maintenance procedures, and communication. All students will successfully complete each element of personal safety training before working in the Automotive Laboratory.

PROGRAM ALIGNMENT

This course is part of a program aligned through the Kansas Board of Regents and Technical Education Authority. For more information, please visit:

https://kansasregents.org/workforce_development/program-alignment

PROGRAM LEARNING OUTCOMES

1. Demonstrate proper safety practices in an automotive shop environment.
2. Demonstrate workplace skills associated with a professional automotive shop.
3. Describe the fundamental elements of automotive technology including service information, tools, equipment, and maintenance procedures.

TEXTBOOKS

<http://kckccbookstore.com/>

METHODS OF INSTRUCTION

A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, cooperative/collaborative learning,

labs and demonstrations, projects and presentations, speeches, debates, panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.

COURSE OUTLINE

- I. Introduction to the Automobile
 - A. History
 - B. Types of shops
 - C. Career opportunities in automotive
- II. Safety
 - A. Personal Protection Equipment
 - B. Ventilation
 - C. Fire safety
 - D. Lift safety (Lift Safety Institute)
 - E. Hand tool safety
 - F. Power tool safety
 - G. Welding safety
 - H. Fender covers and other protective devices
 - I. Building a culture of safety in the workplace
 - J. Lock-out Tag-out procedures
 - K. Right to know laws
 - L. Emergency scenarios in the lab
- III. Pollution
 - A. SP2 program (as related to program)
 - B. Shop water traps and maintenance
 - C. Proper disposal of materials
- IV. Introduction to Automobiles
 - A. Identification
 - B. Body types
 - C. Chassis types
 - D. Vehicle operation
 - E. Drive Train
 - F. Engine classification
 - G. Transmission and axle combinations
- V. Automotive Service Operations
 - A. Maintenance schedules
 - B. Shop manuals
 - C. Technical Service Bulletins (TSB)
 - D. Online service information
 - E. Recalls and service campaigns
 - F. Labor estimating
 - G. Repair orders
 - H. VINs and other vehicle identifiers
- VI. Hardware

- A. Fastener identification
- B. Torque
- C. Thread repair
- D. Heating
- VII. Equipment and Tool Usage
 - A. Hand tools
 - B. Pneumatic tools
 - C. Electric tools
 - D. Measuring tools
 - E. Cleaning equipment
 - F. Tool care
 - G. Organization
- VIII. Consumable Supplies
 - A. Inventory management
 - B. Procurement strategies
- IX. Shop Culture and Customer Service
 - A. Working with others
 - B. Appearance
 - C. Customer service
 - D. Communication
 - E. Time management

COURSE LEARNING OUTCOMES AND COMPETENCIES

Upon successful completion of this course, the student will:

- A. Describe career opportunities in the automotive industry.
 1. Describe opportunities in the automotive industry.
 2. Describe types of automotive businesses.
 3. Describe historical milestones in automotive history.
- B. Demonstrate where to find right to know information.
 4. Demonstrate where to find vehicle service information.
 5. Identify if a vehicle has a safety recall.
 6. Estimate cost of a service repair.
 7. Demonstrate where vehicle identification numbers can be located on the vehicle.
- C. Demonstrate usage of safety equipment for personal use and equipment in the shop.
 8. Demonstrate safe usage of personal protection equipment.
 9. Demonstrate how to safely ventilate harmful gasses from shop.
 10. Describe the how to safely deal with a fire in the shop.
 11. Complete a lift safety program and demonstrate safe lift usage.
 12. Demonstrate safe hand tool usage.
 13. Demonstrate proper torch operation procedures.
 14. Demonstrate lock-out, tag-out procedures.

15. Demonstrate where to find right to know materials in the shop.
 16. Describe how to build a culture of work safety in the shop.
- D. Describe pollution control procedures for auto repair facilities.
17. Describe how to utilize and maintain water drainage traps in a shop.
 18. Describe procedures for disposing and recycling of materials generated from automotive service.
 19. Successfully complete a safety and pollution control program.
- E. Demonstrate understanding of vehicles identification by powertrain, body, and axle combinations.
20. Identify a vehicle by engine type, body design, drive-train or axle combination.
 21. Identify vehicle engine and transmission types.
 22. Demonstrate safe vehicle operation around the shop.
- F. Demonstrate usage of fasteners.
23. Describe how to identify different types of fasteners.
 24. Demonstrate how to correctly torque different types of fasteners.
 25. Demonstrate different methods to repair damaged threads.
 26. Demonstrate how to extract broken fasteners.
 27. Demonstrate methods for listening stuck fasteners.
- G. Describe methods of controlling consumable supplies.
28. Describe methods of controlling shop consumable inventory.
 29. Describe methods of organizing stock orders and how to procure supplies.
- H. Demonstrate methods of working with customers and fellow workers.
30. Describe methods for keeping workplace relations comfortable.
 31. Demonstrate an appearance that would be expected when working in an automotive shop.
 32. Describe methods to maintain excellence in customer service.
 33. Practice methods of communicating effectively with others.
 34. Demonstrate effective time management and work strategies in automotive service.

ASSESSMENT OF COURSE LEARNING OUTCOMES AND COMPETENCIES

Student progress is evaluated through both formative and summative assessment methods. Specific details may be found in the instructor's course information document.

COLLEGE POLICIES AND PROCEDURES

Student Handbook

<https://www.kckcc.edu/files/docs/student-resources/student-handbook-and-code-of-conduct.pdf>

College Catalog

<https://www.kckcc.edu/academics/catalog/index.html>

College Policies and Statements

<https://www.kckcc.edu/about/policies-statements/index.html>

Accessibility and Accommodations

<https://www.kckcc.edu/academics/resources/student-accessibility-support-services/index.html>.