AUTO 020A: AUTOMOTIVE QUICK SERVICE

Originator
dredman

Co-Contributor(s)

Name(s)
Anderson, Dorothy

Justification / Rationale
The Automotive Faculty are reviewing and/or updating this course to assure compliance with local, State, and Federal regulations; support consistency within the curriculum; practice relevance regarding automotive industry and community; and to make improvements that will strengthen the learning environment this course creates thus benefiting the learners.

Effective Term
Fall 2022

Credit Status
Credit - Degree Applicable

Subject
AUTO - Automotive Technology

Course Number
020A

Full Course Title
Automotive Quick Service

Short Title
AUTO QUICK SERVICE

Discipline

Disciplines List
Automotive Technology

Modality
Face-to-Face
Hybrid

Catalog Description
This course provides theory and hands-on experience in performing key automotive services required by entry-level technicians in an automotive repair facility atmosphere. It is geared for those students entering the workforce as an automotive technician. A uniform is required for this course.

Schedule Description
This class provides lecture/discussion and hands-on experience performing common services on today's automobile including: oil change, tire balance, brake job, cooling system service, tune-up and timing belt replacement. A uniform is required for this course. Prerequisite: AUTO 011B & AUTO 013A

Lecture Units
1

Lecture Semester Hours
18

Lab Units
2

Lab Semester Hours
108

In-class Hours
126

Out-of-class Hours
36

Total Course Units
3

Total Semester Hours
162

Prerequisite Course(s)
AUTO 011B & AUTO 013A

Required Text and Other Instructional Materials

Resource Type
Book

Open Educational Resource
No

Author
Various

Title
ASE Automotive Suite (Text, shop manual, and workbook for all 8 ASE automotive categories)

Edition
7th

City
Tinley Park, Illinois

Publisher
Goodheart Wilcox

Year
2021

College Level
Yes

Flesch-Kincaid Level
11.4

ISBN #
978-1-64564-559-7

Resource Type
Book

Formatting Style
APA

Author
M. Ellison

Title
Automobiles Have Computers?

Edition
1

City
Dubuque, IA

Publisher
Kendall Hunt

Year
2022

College Level
Yes

Flesch-Kincaid Level
13

ISBN #
978-1-7924-9479-6

Class Size Maximum
21

Entrance Skills
Complete work order to include customer information, vehicle identifying information, customer concern, related service history, cause, and correction.

Requisite Course Objectives
AUTO 011B-Complete work order to include customer information, vehicle identifying information, customer concern, related service history, cause, and correction.

Entrance Skills
Identify, interpret and repair electrical/electronic system concern; determine necessary action

Requisite Course Objectives
AUTO 011B-Identify and interpret electrical/electronic system concern; determine necessary action.

Entrance Skills
Research applicable vehicle and service information, such as electrical/electronic system operation, vehicle service history, service precautions, and technical service bulletins

Requisite Course Objectives
AUTO 011B-Research applicable vehicle and service information, such as electrical/electronic system operation, vehicle service history, service precautions, and technical service bulletins.

Entrance Skills
Use wiring diagrams during diagnosis of electrical circuit problems

Requisite Course Objectives
AUTO 011B-Use wiring diagrams during diagnosis of electrical circuit problems.

Entrance Skills
Inspect, test and repair switches, connectors, and wires of starter control circuits; perform necessary action

Requisite Course Objectives

AUTO 011B-Inspect and test switches, connectors, relays, solenoid solid state devices, and wires of electrical/electronic circuits; perform necessary action.

Entrance Skills

Diagnose and repair poor stopping, noise, vibration, pulling, grabbing, dragging or pedal pulsation concerns; determine necessary action

Requisite Course Objectives

AUTO 013A-Diagnose poor stopping, pulling or dragging concerns caused by malfunctions in the hydraulic system; determine necessary action.

Entrance Skills

Diagnose and repair antilock brake system (ABS) braking concerns caused by vehicle modifications (tire size, curb height, final drive ratio, etc.).

Requisite Course Objectives

AUTO 013A-Diagnose antilock brake system (ABS) electronic control(s) and components using self-diagnosis and/or recommended test equipment; determine necessary action.

Course Content

1. Review of AUTO-010, AUTO-011B, and AUTO-013A materials.
2. Shop administrative procedures.
3. Basic vehicle services.
4. Electrical system inspection and service.
5. 30\60\90K mile services.
6. Suspension and brake system inspection and service.
7. Transaxle and driveline inspection and service.
8. Tune-ups and retrieval of engine malfunction codes.
9. Automotive industry web-based training modules.

Lab Content

1. Adhere to shop safety practices, SP2.
2. Adhere to shop administrative procedures.
3. Perform basic vehicle services.
4. Perform electrical system inspection and service.
5. Perform 30\60\90K mile services.
6. Perform suspension and brake system inspection and service.
7. Perform and retrieval of engine malfunction codes.

Course Objectives

	Objectives
Objective 1	Comply with all shop safety requirements, SP2.
Objective 2	Complete work order to include customer information, vehicle identifying. information, customer concern, related service history, cause, and correction.
Objective 3	Demonstrate knowledge of safety aspects of supplemental restraint systems (SRS) and antilock brake systems (ABS).
Objective 4	Locate and use paper and electronic information.
Objective 5	Locate and use Technical Service Bulletins (TSBs).
Objective 6	Demonstrate use of the three C's (concern, cause, and correction).
Objective 7	Perform a detailed vehicle condition inspection.
Objective 8	Perform oil and filter change.
Objective 9	Service transmission; perform visual inspection of transmission; replace fluids and filters.

Objective 10	Remove, inspect, and install strut cartridge or assembly, strut coil spring, insulators (silencers), and upper strut bearing mount.
Objective 11	Diagnose tire wear patterns; determine necessary action.
Objective 12	Bleed (manual, pressure, vacuum, or surge) brake system.
Objective 13	Remove, clean, and inspect brake shoes, springs, pins, clips, levers, adjusters/self-adjusters, other related brake hardware, and backing support plates; lubricate and reassemble.
Objective 14	Install wheel, torque lug nuts, and make final checks and adjustments.
Objective 15	Remove caliper assembly from mountings; clean and inspect for leaks and damage to caliper housing; determine necessary action.
Objective 16	Reassemble, lubricate, and reinstall caliper, pads, and related hardware; seat pads, and inspect for leaks.
Objective 17	Use wiring diagrams during diagnosis of electrical circuit problems.
Objective 18	Perform starter circuit voltage drop tests; determine necessary action.
Objective 19	Perform charging system output test; determine necessary action.
Objective 20	Locate refrigerant label and identify specified refrigerant type (e.g., R-12, R-134a).
Objective 21	Conduct preliminary performance test of A/C system (i.e., verify compressor engagement, measure outlet duct temperature, sense temperature change across A/C components); determine necessary action.
Objective 22	Perform cooling system pressure tests; check coolant condition; inspect and test radiator, pressure cap, coolant recovery tank, and hoses; perform necessary action.
Objective 23	Retrieve and record stored OBD II diagnostic trouble codes; clear codes when applicable.
Objective 24	Remove, inspect and replace spark plugs.
Objective 25	Perform typical 30\60\90K mile services.

Student Learning Outcomes

	Upon satisfactory completion of this course, students will be able to:
Outcome 1	Practice repair and diagnosis of common vehicle service items in a shop-type environment (simulated experience of actual repair facility operation).
Outcome 2	Apply research skills to intermediate to intermediate level vehicle malfunctions, given industry standard service manuals, service bulletins, repair bulletin boards, automotive textbooks, and appropriate internet information.
Outcome 3	Demonstrate problem solving on live vehicles in a shop-type environment.

Methods of Instruction

Method	**Please provide a description or examples of how each instructional method will be used in this course.**
Laboratory	Learners will participate in lab based activities to complete their NATEF standards job sheets.
Discussion	Learners will participate in discussions.
Demonstration, Repetition/Practice	Each learner will demonstrate their ability to correctly perform a given task not limited to laboratory assignments, research projects, interactive role-play and group activities.
Technology-based instruction	Diagnostic test equipment, computer-based tools, and virtual reality scenarios.
Lecture	Each class is half lecture covering multiple aspects of course content.
Collaborative/Team	Learners will work in a team setting while performing NATEF tasks, researching information and group based activities.

Methods of Evaluation

Method	**Please provide a description or examples of how each evaluation method will be used in this course.**	**Type of Assignment**
College level or pre-collegiate essays	A research report submitted or completed, not limited to a written, presentation, however, the student is required to research information pertaining to the assignment.	Out of Class Only

Reading reports	Turned in by report, written, presentation, however, the learner is required to research information pertaining to the assignment.	Out of Class Only
Student participation/contribution	Learners will work in a team setting while performing lab activities.	In and Out of Class
Tests/Quizzes/Examinations	Used to evaluate learners' knowledge and understanding of the information presented. Examples of these are not limited to quizzes, exams, presentations, research, or projects.	In and Out of Class
Group activity participation/observation	Learners will be observed activities in lab, group activities, information research, collaborative assignments, and other activities assigned.	In and Out of Class
Laboratory projects	Learners will participate in lab based activities to complete their ASE standards job sheets.	In Class Only
Written homework	Readings from required text: 1-3 chapters per week from both classroom and shop manuals. Homework from required text: multiple-choice questions, fill in the blank and essay questions to be graded each week.	Out of Class Only

Assignments

Other In-class Assignments

1. Review homework from required text: multiple-choice questions, fill in the blank and essay questions to be graded each week.
2. Begin SP2 safety tests.
3. Notes on lecture.
4. Participation in discussion related to topic of lecture.
5. Review and discuss vehicle diagnosis, troubleshooting and repair of personal, shop and other vehicles to be evaluated by the instructor during lab time.
6. Must develop teamwork skills through classroom interaction and discussion.

Other Out-of-class Assignments

1. Readings from required text: 1-3 chapters per week from both classroom and shop manuals. Each chapter 2 hours per week.
2. Homework from required text: multiple-choice questions, fill in the blank and essay questions to be graded each week. Each chapter 2 hours per week.
3. Completion of 2 SP2 safety tests, each subject including an average of 4 hours.
   a. Mechanical Safety
   b. Pollution Prevention
4. Assigned readings and written summaries from selected instructor handouts. 1 hour.
5. Must complete a course project consisting an essay describing, analyzing and summarizing a selected topic, including out of class research and fieldwork. 8 hours.
6. Industry web-based training modules, each taking roughly 3 hours.

Grade Methods

Letter Grade Only

Distance Education Checklist

Include the percentage of online and on-campus instruction you anticipate.

Online %

50

On-campus %

50

Lab Courses

How will the lab component of your course be differentiated from the lecture component of the course?

Lab component of the course will be completed in a laboratory environment on campus under the supervision of an instructor.

From the COR list, what activities are specified as lab, and how will those be monitored by the instructor?

The lab content is comprised of the required tasks to meet the Automotive Service Excellence (ASE) 2017 Master Automotive Service Technician (MAST) standards.

How will you assess the online delivery of lab activities?

Laboratory activities will not be delivered in the online setting, only in person.

Instructional Materials and Resources

If you use any other technologies in addition to the college LMS, what other technologies will you use and how are you ensuring student data security?

SP2 online safety training.

If used, explain how specific materials and resources outside the LMS will be used to enhance student learning.

SP2 - free account provided to all used to ensure the learners ability to distinguish safe working practices and conditions from unsafe practices and conditions.

Effective Student/Faculty Contact

Which of the following methods of regular, timely, and effective student/faculty contact will be used in this course?

Within Course Management System:

Chat room/instant messaging
Discussion forums with substantive instructor participation
Online quizzes and examinations
Private messages
Regular virtual office hours
Timely feedback and return of student work as specified in the syllabus
Weekly announcements

External to Course Management System:

Direct e-mail
Synchronous audio/video

For hybrid courses:

Orientation, study, and/or review sessions
Scheduled Face-to-Face group or individual meetings

Briefly discuss how the selected strategies above will be used to maintain Regular Effective Contact in the course.

SP2 - free account provided to all used to ensure the learners ability to distinguish safe working practices and conditions from unsafe practices and conditions.

If interacting with students outside the LMS, explain how additional interactions with students outside the LMS will enhance student learning.

Interaction between instructor and learner will help to enhance learning and understanding of subject material.

Other Information

Provide any other relevant information that will help the Curriculum Committee assess the viability of offering this course in an online or hybrid modality.

With the uncertainty of the teaching environment, enabling the lecture portion of this course to be delivered in an online setting, while keeping the hands-on portion face-to-face, will ensure learners can access needed training to ensure knowledge and experience is achieved to gain employment in the automotive field.

MIS Course Data

CIP Code

47.0604 - Automobile/Automotive Mechanics Technology/Technician.

TOP Code

094800 - Automotive Technology

SAM Code
C - Clearly Occupational

Basic Skills Status
Not Basic Skills

Prior College Level
Not applicable

Cooperative Work Experience
Not a Coop Course

Course Classification Status
Credit Course

Approved Special Class
Not special class

Noncredit Category
Not Applicable, Credit Course

Funding Agency Category
Not Applicable

Program Status
Program Applicable

Transfer Status
Transferable to CSU only

General Education Status
Y = Not applicable

Support Course Status
N = Course is not a support course

Allow Audit
Yes

Repeatability
No

Materials Fee
No

Additional Fees?
No

Approvals

Curriculum Committee Approval Date
3/17/2022

Academic Senate Approval Date
3/24/2022

Board of Trustees Approval Date
4/22/2022

Chancellor's Office Approval Date
5/07/2022

Course Control Number

CCC000631449

Programs referencing this course

Automotive Light and Medium Duty Diesel Certificate of Achievement (http://catalog.collegeofthedesert.eduundefined/?key=111)
Automotive Steering, Suspension, Alignment Certificate of Achievement (http://catalog.collegeofthedesert.eduundefined/?key=112)
Automotive Introductions Certificate of Achievement (http://catalog.collegeofthedesert.eduundefined/?key=201)
Advanced Transportation Technologies AS Degree (http://catalog.collegeofthedesert.eduundefined/?key=44)
Advanced Transportation Technologies AS Degree (http://catalog.collegeofthedesert.eduundefined/?key=45)
Automotive Technology AS Degree (http://catalog.collegeofthedesert.eduundefined/?key=57)