AUTOMOTIVE STEERING AND SUSPENSION ADVANCED (III)

Course Syllabus

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Course Number:	SS103	**Instructor:** Ron Rader	
OCAS Code:		**Phone Number:** 580-327-0344	
Course Length:	45 hours	**Email:** rrader@nwtech.edu	
Career Cluster:	Transportation	**Campus:** Alva, OK	
Career Pathway:	Automotive Service	**Program:** Automotive Service Technology	
Career Major:	Automotive Service Technician, Automotive Chassis Technician		
Pre-requisite:	Automotive Introduction, Automotive Steering and Suspension Introduction, Automotive Steering and Suspension Fundamentals		

Course Description: Student will learn to diagnose and repair steering columns, and how to disable and enable the Supplemental Restraint System (SRS). Also covered will the power and manual steering racks and steering gears. This course will cover the electrically controlled steering systems and how to diagnose and repair these systems.

Instructional Philosophy: To provide a training program that is of merit both educationally and ethically while effectively providing the individual learner the opportunities, knowledge and skills necessary to succeed in the workplace as well as life.

Course Goals: Upon successful completion of this course, the student will be able to:

Steering Systems Diagnosis and Repair

Disable and enable supplemental restraint system (SRS) in accordance with manufacturer's procedures.
Remove and replace steering wheel, center/time supplemental restraint system (SRS) coil in accordance with manufacturer's procedures.
Diagnose steering column noises, looseness, and binding concerns (including tilt mechanisms); determine necessary action.
Diagnose power steering gear (non-rack and pinion) binding, uneven turning effort, looseness, hard steering, and fluid leakage concerns; determine necessary action.
Diagnose power steering gear (rack and pinion) binding, uneven turning effort, looseness, hard steering, and fluid leakage concerns; determine necessary action.
Inspect steering shaft universal-joint(s), flexible coupling(s), collapsible column, lock cylinder mechanism, and steering wheel; perform necessary action.
Adjust manual or power non-rack and pinion worm bearing preload and sector lash.
Remove and replace manual or power rack and pinion steering gear; inspect mounting bushings and brackets.
Disassemble, inspect, perform necessary action and reassemble rack and pinion steering gear.
Adjust manual or power rack and pinion steering gear.
Inspect and replace manual or power rack and pinion steering gear inner tie rod ends (sockets) and bellows boots.
Diagnose and adjust components of electronically controlled steering systems; determine necessary action.
Inspect and test non-hydraulic electric-power assist steering.
Identify hybrid vehicle power steering system electrical circuits, service and safety precautions.

Suspension Systems Diagnosis and Repair
Diagnose, inspect, adjust, repair or replace components of electronically controlled suspension systems.

Major Course Projects:
Students will perform tasks relating to the Automotive Service Industry as per standards identified by the National Automotive Technicians Education Foundation (NATEF). Students will complete repair orders each day and will document completion of competencies on competency profiles tracking individual progress and accomplishment.

Project Outline:
Projects will include performing tasks on mock ups, shop vehicles, and live work as student skills progress. These projects will reinforce classroom theory instruction and will require the student to consult industry service information during the course of task performance.

Instructional Delivery Plan:
The instruction for this course will be comprised of multiple methods designed to promote and accommodate different learning styles including classroom lecture, classroom demonstrations, shop demonstrations, hands on learning activities, classroom discussion, interactive media, textbook, computer based learning activities, research projects, guest speakers, student presentations, and interactive learning with CPS (Classroom Performance System). Students will be required to practice the skills associated with the instructional content and will be required to work independently and also in teams. Assignments will require students to use academic skills in math, science, and language arts.

Assessment Plan:
Students will be assessed according to three basic kinds of learning. Knowledge: Does the student possess the required knowledge to perform a specific competency? Skills: Does the student possess the necessary coordination to perform the task/competency? Attitude: Will the student perform the task/competency on the job after learning to do it? Students will also be assessed according to the basic work skills of attendance and promptness. Soft skills will be assessed in the Academic Career Center.

50%	Daily work- Performance of technical skills on job, work habits, safety, clean-up, participation
50%	Written assignment- Repair orders, textbook assignments, etc.

Grading Scale:

A	90-100	Exceeds expectations
B	80-89	Meets industry standards and expectations
C	70-79	Passing grade, but does not meet some standards
D	60-69	Passing, but only meets the minimum standards
F	Below 60	Failing, does not meet minimum standards

Alliance Credit Offered:
OSU Okmulgee

Industry Alignments:
ASE Certification, ODCTE Certification,

End of Instruction Industry Assessment:
ASE Certification, ODCTE Certification,

Resources:
Automotive Excellence Vol. 1 and Vol. 2
Modern Automotive Technology
Introduction to Automotive Service: Fundamental Concepts
CDX Global Interactive Training

Snap On Shop Key
Alldata

Attachments: See Automotive Service Technology Task List Competency Handbook