El Paso Community College
Syllabus
Part II
Official Course Description

SUBJECT AREA	**Automotive Technology**
COURSE RUBRIC AND NUMBER	**AUMT 1316**
COURSE TITLE	**Automotive Suspension and Steering Systems**
COURSE CREDIT HOURS	**3 2 : 4** **Credits Lec Lab**

I. Catalog Description

Studies diagnosis and repair of automotive suspension and steering systems including electronically controlled systems. Includes component repair, alignment procedures, and tire and wheel service. May be taught manufacturer specific. **(2:4). Lab fee.**

II. Course Objectives

A. Unit I. Shop Safety
1. Work safely in an automotive shop.
2. Explain laws regarding hazardous materials in the shop.

B. Unit II. Steering and Suspension System Service Procedures
1. Obtain repair information and specifications from manuals and computers.
2. Use wiring diagrams while diagnosing electrical problems.
3. Follow service procedures while working with active suspensions systems and air bag circuits
4. Use a strategy-based diagnostic procedure while solving customer concerns.
5. Identify and analyze steering/suspension system noises
6. Evaluate ball joints, struts, and idler arm.
7. Operate special service equipment e.g., strut compressor, fluid flush, ball joint installer.
8. Interpret caster, camber, toe in, and thrust angle
9. Operate a computerized alignment machine
10. Document service or repair procedure on the Work Order or Lab Report.
11. Compare actual time spent on a repair to flat rate time.
12. Demonstrate efficiency from start to finish of the job.
13. Identify proper tools and equipment for the job.

C. Unit III. Wheel Bearings
1. Identify types of wheel bearings.
2. Use dial indicator to measure lateral run out of wheel bearings.
3. Service, replace, and adjust pre-load on wheel bearings.

D. Unit IV. Tires and Wheels
1. Identify types of tires and wheels.
2. Perform wheel and tire run out using run out gauge
3. Perform bubble and spin on computer wheel and tire balance.

E. Unit V. Shock Absorber and Struts
1. Identify types of shock and struts.
2. Perform shock absorber and street bounce and rebound test.
3. Replace shock absorbers and streets.

F. Unit VI. Front and Rear Suspension Systems
1. Identify front and rear suspension systems.
2. Diagnose suspension problems with checklist.
3. Inspect, service, and replace defective suspension components.
4. Replace defective springs.

G. Unit VII. Steering System Front and Rear
1. Identify front and rear steering systems.
2. Inspect, test, and replace defective steering linkage components.
3. Service or replace defective manual or power steering rack-and-pinion units.
4. Service or replace steering wheel mast-jacket and tilt-wheel assemblies.
5. Identify power steering fluid type
6. Perform power steering pressure check.

H. Unit VIII. Wheel Alignment
1. Perform a pre-alignment inspection using a checklist.
2. Perform a two-wheel alignment.
3. Perform a four-wheel alignment.
4. Perform road test.

III. THECB Learning Outcomes (WECM)

1. Utilize appropriate safety procedures.
2. Explain operations of suspension and steering systems.
3. Diagnose and repair system components including electronically controlled systems.
4. Perform wheel alignment procedures.
5. Perform tire service and repair.

IV. Evaluation

A. Unit Exam will count 30% toward final exam.
B. Lab Exam will count 60% toward final exam.
C. Final Exam will count 10% toward final exam.
D. Grading Scale

A	=	90 - 100
B	=	80 - 89
C	=	70 - 79
D	=	60 - 69
F	=	Below 60

E. Cheating will not be permitted. Any person caught cheating will receive a grade of zero for that exam.

V. Disability Statement (Americans with Disabilities Act [ADA])

EPCC offers a variety of services to persons with documented sensory, mental, physical, or temporary disabling conditions to promote success in classes. If you have a disability and believe you may need services, you are encouraged to contact the Center for Students with Disabilities to discuss your needs with a counselor. All discussions and documentation are kept confidential. Offices located: VV Rm C-112 (831-2426); TM Rm 1400 (831-5808); RG Rm B-201 (831-4198); NWC Rm M-54 (831-8815); and MDP Rm A-125 (831-7024).

VI. 6 Drop Rule

Students who began attending Texas public institutions of higher education for the first time during the Fall 2007 semester or later are subject to a 6-Drop limit for all undergraduate classes. Developmental, ESL, Dual Credit and Early College High School classes are exempt from this rule. All students should consult with their instructor before dropping a class. Academic assistance is available. Students are encouraged to see Counseling Services if dropping because exemptions may apply. Refer to the EPCC catalog and website for additional information.