

# El Paso Community College

## Syllabus

### Part II

## Official Course Description

|                                 |                                     |
|---------------------------------|-------------------------------------|
| <b>SUBJECT AREA</b>             | <u>Automotive Technology</u>        |
| <b>COURSE RUBRIC AND NUMBER</b> | <u>AUMT 1310</u>                    |
| <b>COURSE TITLE</b>             | <u>Automotive Brake Systems</u>     |
| <b>COURSE CREDIT HOURS</b>      | <u>3        2        :</u> <u>4</u> |
|                                 | Credits   Lec.        Lab.          |

### I. Catalog Description

Teaches the operation and repair of drum/disc type brake systems. Includes topics on brake theory, diagnosis, and repair of power, manual, anti-lock brake systems, and parking brakes. 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.
3. Use brake dust collection methods to minimize health concerns while working with the friction materials.

#### B. Unit II. Brake System Fundamentals

1. Identify the intended usage of brake tools and equipment.
2. Explain brake hydraulics and friction principles.
3. Obtain repair information and specifications from manuals and computers.
4. Use wiring diagrams while diagnosing electrical problems.
5. Use a strategy-based diagnostic procedure while solving customer concerns.
6. Document service or repair procedure on the Work Order or Lab Report
7. Compare actual time spent on a repair to flat rate time.
8. Demonstrate efficiency from start to finish of the job.
9. Identify proper tools and equipment for the job.

#### C. Unit III. Hydraulic Brake System Service

1. Inspect and replace defective brake lines and hoses.
2. Repair or replace worn master cylinder assemblies.
3. Repair or replace worn master cylinder and caliper assemblies.

#### D. Unit IV. Brake Friction Assemblies

1. Install brake friction assemblies on drum equipped vehicles.
2. Install brake friction assemblies on disc equipment vehicles.
3. Properly turn drums and discs on the brake lathes as prescribed by manufacturer specifications.

E. Unit V. Brake Systems

1. Inspect and adjust the parking brake.
2. Explain and diagnose power booster operation.
3. Explain and diagnose anti-lock brake operation.
4. List and identify vehicle suspension components that will affect brake performance.

**III. THECB Learning Outcomes (WECM)**

1. Utilize appropriate safety procedures.
2. Explain operation of modern brake systems.
3. Diagnose and repair hydraulic systems, drum/disc brake systems, and anti-lock brake systems

**IV. Evaluation**

|   |               |  |
|---|---------------|--|
| A | Excellent     | 89.5% and above                            |
| B | Above Average | 79.5% - 89.4%                              |
| C | Average       | 69.5% - 79.4%                              |
| D | Below Average | 59.5% - 69.4%                              |
| F | Failing       | 59.4% and below                            |
| W | Withdrawal    | Please see EPCC Catalog for drop deadline. |

**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.