

AUTO 125

Automotive Brakes

Syllabus

Instructor: David Martinez

Office: 1102

Semester begins: Aug 20, 2012

Office Phone: 355-6362

Ends: Dec 7, 2012

TEXTBOOK:

Automotive Encyclopedia by W. Scott Gauthier

Course Description:

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

- Explain the forces and factors involved when braking a vehicle
- Describe brake system materials, hydraulic components, and mechanical parts
- State how disk brakes and drum brakes operate
- Describe how various power brake systems and antilock brake systems operate
- Tell how to service brake hydraulic systems
- Give steps of performing disk brake overhaul and drum brake overhaul
- Solve brake troubleshooting problems
- Give examples of power brake system anti-lock brake system service operations

COURSE GOALS AND OBJECTIVES

Upon successful completion of this course, students will be able to:

- A. Comply with all safety shop procedures associated with stands, air tools, hydraulic jacks, and car lifts.
- B. Have a thorough understanding of the brake system and it's components
- C. Describe power brake systems and anti-lock operation
- D. Describe the proper steps and procedures of disc brake and drum brake overhaul

STUDENTS WITH DISABILITIES

Any student with a documented disability who may need educational Accommodations should notify his/her instructor or the Disabled Student Program and Services (DSPS) office as soon as possible. The (DSPS) is located in building 2117, Health Services Building, or may contact them at (760) 355-6312. For first aid call the nurse at (760) 337-0300

BASIC RULES AND SHOP SAFETY

1. No music allowed in the auto shop
2. No smoking in the shop area
3. No work should be redone without the instructor's permission
4. No parking inside the shop during lecture time
5. No tolerance for sexual harassment
6. No long breaks (10 minutes per class hour)
7. Every student is required to wear safety glasses
8. No helpers or visitors during lab activities

STUDENT RESPONSABILITIES:

Each student is required to comply with the schedule established by Automotive Program at Imperial Valley College. Students are required to attend class each day class is in session. If for any reason a student is absent s/he is responsible for making up any missed lecture or lab assignments. It is recommended that students call the office or leave a message at 760-355-6361 to inform the instructor if s/he is ill and/ or bring a doctor's note upon returning to class.

4 tardies = 1 absence

4 Absences = you will be dropped or given an "IC" incomplete

STUDENT LEARNING OUTCOMES: IVC as an Institution has adopted five Student Learning Outcomes (SLO'S). They are interconnected with each other. They will be inherent throughout this course:

1. Communication
2. Skills
3. Critical Thinking Skills
4. Information Literacy
5. Global Awareness

BASIC RULERS AND SHOP SAFETY

- ❖ No music allow in the auto shop
- ❖ No parking in front of the gate
- ❖ No work should be done without instructor permissions
- ❖ No parking inside the shop during lecture time
- ❖ No long breaks (should be 10 minutes per hour class)
- ❖ Each student should clean the work area
- ❖ The student can not leave early without instructor permission
- ❖ No cell phone during class section
- ❖ No helpers or visitors during lab activities
- ❖ Safety glass required

Fall 2012 Important Dates:

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|--|-----------------------|
| - Late Registration | Aug 20-Sep 1 |
| - Ticketing for parking violation starts | Sep 4 |
| - Deadline to make up incomplete grade | Sep 28 |
| - Financial Aid return to/little IV Drop Deadline | Oct 24 |
| - Deadline to drop full term classes | Nov 10 |
| - Holiday(s) | Sep 13, Nov 12, 22-24 |
| - Last week of classes including final examination | Dec 3-7 |

NON-DISCRIMINATION/SEXUAL HARASSMENT

All forms of harassment are contrary to basic standards of conduct between individuals are prohibited by state and federal law. As well as this policy and will not be tolerated. The district is committed to providing and academic and work environment that respects the dignity of individuals and groups. The district shall e free of sexual harassment and all forms of sexual intimidation and exploitation. Emergency numbers 911 for first Aid ext. 6310-0300.

NOTE: Lecture on chapters will be subject to changes.

OUTLINES AND ACTIVITIES

WEEKS	INTRODUCTION MANUAL	ACTIVITIES CLASS	QUIZ	HOMEWORK/ EXAMS
1 st	Orientation; <ul style="list-style-type: none"> • Safety • Types of brakes systems • Safety and brake fundamentals • Principles of braking and Drum/disc brakes • Parking, hydraulic, Power Brake boosters • Anti-lock braking system, Brake service and repair 	Show Safety Videos		Video Safety Test
Part II	Chapter 1- Automotive Safety <ul style="list-style-type: none"> • Describe the typical Layout and sections Of an auto shop • List the types of Accidents that Occur in an auto shop 	Pgs. 27-30 Study Guide		Class Book Review questions pgs. 68-69
2 nd Week	Chapter 3-Automotive Tools <ul style="list-style-type: none"> • Identify common Automotive hand tools • Select the right tool for A given job (Homework) • Use hand tools safely 	Study guide worksheets and review with the class pg. 19-22	Quiz# 1 Quiz# 2	Class book Review questions pg. 45-46
3 rd Week	Chapter 71 Brake Systems	Study guide		

10 th & 11 th Week	<p>Chapter 73</p> <ul style="list-style-type: none"> • Identification of the Major parts of the Brake system • Describe the operation Of anti-lock brake sys. • Diagnosing anti-lock Brake systems • Repairing anti-lock Brake systems 	<p>Study guide worksheets</p> <p>and review</p> <p>with the class</p> <p>pgs. 373-376</p>	<p>Quiz# 6</p>	<p>Review</p> <p>questions</p> <p>pg. 1442</p>
12 th Week	<p>Chapter 65</p> <ul style="list-style-type: none"> • Tire types and basic • Thread patterns • Tire markings • Tire service • Improvement And advance 	<p>Study guide worksheets</p> <p>and review</p> <p>with the class</p> <p>pg. 331-336</p>	<p>Quiz# 7</p>	<p>Class book</p> <p>Review</p> <p>questions</p> <p>1254-1255</p>
13 th Week	<p>Chapter 17</p> <ul style="list-style-type: none"> • Computer control system • Components of A computer • Sensors • Electronic control Module operation • Actuators 	<p>Study guide worksheets</p> <p>pgs. 77-82</p>	<p>Quiz#8</p>	<p>Class book</p> <p>Review</p> <p>questions</p> <p>Pg. 259</p>
14 th Week	<p>Chapter 18</p> <ul style="list-style-type: none"> • On-board diagnostics • Diagnostic troubles codes • Activating self-diagnostic system 	<p>Study guide</p> <p>Pgs. 83-88</p>	<p>Quiz# 9</p>	<p>Homework</p> <p>Review</p> <p>Pg. 279</p>
15 th Week	<p>Preparation for Automotive Service Excellence (ASE) Brake exam</p>			
16 th Week	<p>Review and Preparation for Final Exam</p>			