

**STATE UNIVERSITY OF NEW YORK !
COLLEGE OF TECHNOLOGY !
CANTON, NEW YORK !**



MASTER SYLLABUS

**COURSE NUMBER – COURSE NAME
AUTO 144 – AUTOMOTIVE BRAKING SYSTEMS LABORATORY**

Created by: Jeffery Stinson

Updated by: Brandon Baldwin

Canino School of Engineering Technology !

Department: Automotive Technology Program !

Semester/Year: Spring 2018 !

A. **TITLE:** Automotive Braking Systems Laboratory

B. **COURSE NUMBER:** AUTO 144

C. **CREDIT HOURS:** (Hours of Lecture, Laboratory, Recitation, Tutorial, Activity)

Credit Hours: 1

Lecture Hours: per week

Lab Hours: 3 per week

Other: per week

Course Length: 15 Weeks

D. **WRITING INTENSIVE COURSE:** Yes No

E. **GER CATEGORY:** None: Yes: GER !
If course satisfies more than one: GER !

F. **SEMESTER(S) OFFERED:** Fall Spring Fall & Spring

G. **COURSE DESCRIPTION:**

This course consists of theory and operation of automotive brake systems. Topics covered include: foundation brake components of disc and drum brake systems, hydraulic brake system components, and brake enhancements including antilock brake system and stability control.

H. **PRE-REQUISITES:** None Yes If yes, list below:

AUTO 101 and AUTO 111, or MSPT 101, or permission from instructor.

CO-REQUISITES: None Yes If yes, list below:

AUTO 141- Automotive Brake Systems

I. STUDENT LEARNING OUTCOMES: (see key below)

By the end of this course, the student will be able to:

<u>Course Student Learning Outcome</u> <u>[SLO]</u>	<u>Program Student Learning Outcome</u> <u>[PSLO]</u>	<u>GER</u> <i>[If Applicable]</i>	<u>ISLO & SUBSETS</u>	
Describe brake system operation.	ALO1, ALO2	N/A	1-Comm Skills 2-Crit Think 5-Ind, Prof, Disc, Know Skills	O CA IA PS
Use service information, diagnose and repair brake hydraulic system	ALO1, ALO2, ALO3, ALO4	N/A	1-Comm Skills 2-Crit Think 5-Ind, Prof, Disc, Know Skills	W CA IA PS
Use service information, diagnose and repair foundation brake	ALO1, ALO2, ALO3, ALO4	N/A	1-Comm Skills 2-Crit Think 5-Ind, Prof, Disc, Know Skills	W CA IA PS
Demonstrate services performed on drum brakes	ALO1, ALO2, ALO3, ALO4	N/A	ISLO 2-Crit Think 5-Ind, Prof, Disc, Know Skills	Subsets CA IA PS
Demonstrate services performed on disc brakes	ALO1, ALO2, ALO3, ALO4	N/A	2-Crit Think 5-Ind, Prof, Disc, Know Skills ISLO	CA IA PS Subsets
Explain parking brake system operation	ALO1, ALO2, ALO3		1-Comm Skills 2-Crit Think 5-Ind, Prof, Disc, Know Skills	O CA IA PS

Identify brake system components	ALO1, ALO2, ALO3		2-Crit Think 5-Ind, Prof, Disc, Know Skills ISLO	CA IA PS Subsets
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			ISLO ISLO ISLO	Subsets Subsets Subsets Subsets

KEY	<u>Institutional Student Learning Outcomes [ISLO 1 – 5]</u>
ISLO #	ISLO & Subsets
1	Communication Skills Oral [O], Written [W]
2	Critical Thinking <i>Critical Analysis [CA] , Inquiry & Analysis [IA] , Problem Solving [PS]</i>
3	Foundational Skills <i>Information Management [IM], Quantitative Lit./Reasoning [QTR]</i>
4	Social Responsibility <i>Ethical Reasoning [ER], Global Learning [GL], Intercultural Knowledge [IK], Teamwork [T]</i>
5	Industry, Professional, Discipline Specific Knowledge and Skills

*Include program objectives if applicable. Please consult with Program Coordinator !

J. **APPLIED LEARNING COMPONENT:** Yes No

If YES, select one or more of the following categories: !

- | | |
|---|--|
| <input checked="" type="checkbox"/> Classroom/Lab ! | <input type="checkbox"/> Civic Engagement |
| <input type="checkbox"/> Internship | <input type="checkbox"/> Creative Works/Senior Project |
| <input type="checkbox"/> Clinical Placement | <input type="checkbox"/> Research |
| <input type="checkbox"/> Practicum | <input type="checkbox"/> Entrepreneurship |
| <input type="checkbox"/> Service Learning | (program, class, project) |
| <input type="checkbox"/> Community Service | |

K. **TEXTS:**

Erjavec, Jack. BRAKES (A5) NATEF STANDARDS JOB SHEETS

L. **REFERENCES:**

Manufacturer Service Manuals, AllData, ShopKeyPro

M. **EQUIPMENT:** None Needed: Specific brake tools, scan tools, brake lathe

N. **GRADING METHOD:** A-F

O. **SUGGESTED MEASUREMENT CRITERIA/METHODS:**

Laboratory practical, class participation

P. **DETAILED COURSE OUTLINE:**

1. Brake Systems Diagnosis a. Tools b. Safety c. Service Information d. Repair Orders
2. Hydraulic System Diagnosis and Repair
3. Drum Brake Diagnosis and Repair
4. Disc Brake Diagnosis and Repair
5. Power Assist Units Diagnosis and Repair
6. Miscellaneous (Wheel Bearings, Parking Brakes, Electrical, Etc.) Diagnosis and Repair

Q. **LABORATORY OUTLINE:** None Yes

same