

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



**MASTER SYLLABUS**

**COURSE NUMBER – COURSE NAME  
AUTO 141 – AUTOMOTIVE BRAKE SYSTEMS**

**Created by: Jeffery Stinson**

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**Canino School of Engineering Technology**

**Department: Automotive Technology Program**

**Semester/Year: Spring 2018**

A. **TITLE:** Automotive Brake Systems

B. **COURSE NUMBER:** AUTO 141

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

# Credit Hours: 3

# Lecture Hours: 3 per week

# Lab Hours:        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 permission from instructor.

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

AUTO 144- Auto Braking Systems Lab

**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 &amp; SUBSETS</u>	
Define shop laboratory safety.	ALO1, ALO2	N/A	2-Crit Think 5-Ind, Prof, Disc, Know Skills ISLO	CA IA PS Subsets
Describe the skills necessary to perform vehicle brake system service.	ALO1, ALO2, ALO3	N/A	2-Crit Think 5-Ind, Prof, Disc, Know Skills ISLO	CA IA PS Subsets
Use service literature to perform vehicle brake system service.	ALO1, ALO2, ALO3	N/A	1-Comm Skills 2-Crit Think 5-Ind, Prof, Disc, Know Skills	W CA IA PS
Explain fundamentals of automotive brake system operation.	ALO1, ALO2, ALO3	N/A	1-Comm Skills 2-Crit Think 5-Ind, Prof, Disc, Know Skills	O CA IA PS
Apply skills necessary to diagnose abs and service abs systems.	ALO1, ALO2, ALO3	N/A	2-Crit Think 5-Ind, Prof, Disc, Know Skills ISLO	CA IA PS Subsets
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<b>KEY</b>	<b><u>Institutional Student Learning Outcomes [ISLO 1 – 5]</u></b>
<b>ISLO #</b>	<b>ISLO &amp; Subsets</b>
<b>1</b>	<b>Communication Skills</b> Oral [O], Written [W]
<b>2</b>	<b>Critical Thinking</b> <i>Critical Analysis [CA] , Inquiry &amp; Analysis [IA] , Problem Solving [PS]</i>
<b>3</b>	<b>Foundational Skills</b> <i>Information Management [IM], Quantitative Lit./Reasoning [QTR]</i>
<b>4</b>	<b>Social Responsibility</b> <i>Ethical Reasoning [ER], Global Learning [GL], Intercultural Knowledge [IK], Teamwork [T]</i>
<b>5</b>	<b>Industry, Professional, Discipline Specific Knowledge and Skills</b>

\*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:**

Automotive Brake Systems, James D. Halderman, 2017, Prentice Hall / Pearson, ISBN: 978-0-13-406312-6

L. **REFERENCES:**

M. **EQUIPMENT:** None  Needed: Technically enhanced classroom.

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

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

Tests, Exams, Quizzes, Homework.

P. **DETAILED COURSE OUTLINE:**

- I. Introduction
- a. Service Information
- b. Special Brake Service Tools
- c. Brake service environmental concerns
- II. Brake system components
- III. Brake system performance
- IV. Brake system principle
- V. Brake hydraulic systems
- VI. Brake fluid and lines
- VII. Drum brakes
- VIII. Disc Brakes
- IX. Parking brake
- X. Power brake
- XI. Antilock Brake Systems
- XII. Other Brake Systems

Q. **LABORATORY OUTLINE:** None  Yes