COURSE OUTLINE
AUTO 141 – Automotive Brake Systems

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Revised By: Kenneth Wurster

SCHOOL OF ENGINEERING TECHNOLOGY
AUTOMOTIVE TECHNOLOGY DEPARTMENT
November 2015
A. **TITLE:** Automotive Brake Systems

B. **COURSE NUMBER:** Auto 141

C. **CREDIT HOURS:** 3

D. **WRITING INTENSIVE COURSE:** NO

E. **WEEKS PER SEMESTER:** 15 weeks

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

G. **HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY:**
   3 - 50 min lectures per week

H. **CATALOG 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.

I. **PRE-REQUISITES/CO-REQUISITES:**
   a. Pre-requisite(s): AUTO 101 and AUTO 111 or MSPT 101
   b. Co-requisite(s): AUTO 144

J. **GOALS (STUDENT LEARNING OUTCOMES):**
   By the end of this course, the student will:

<table>
<thead>
<tr>
<th>Course Objective</th>
<th>Institutional SLO</th>
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<tbody>
<tr>
<td>Define shop safety</td>
<td>SLO-2: Critical Thinking Skills</td>
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<td>SLO-3: Professional Competence</td>
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<tr>
<td>Describe steps necessary to perform vehicle brake system service</td>
<td>SLO-2: Critical Thinking Skills</td>
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<td>SLO-3: Professional Competence</td>
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<tr>
<td>Use service literature to perform vehicle brake system service</td>
<td>SLO-1: Communications Skills</td>
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<td>SLO-2: Critical Thinking Skills</td>
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<tr>
<td></td>
<td>SLO-3: Professional Competence</td>
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<tr>
<td>Explain fundamentals of automotive brake system operation</td>
<td>SLO-1: Communications Skills</td>
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<td>SLO-2: Critical Thinking Skills</td>
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<tr>
<td></td>
<td>SLO-3: Professional Competence</td>
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<tr>
<td>Apply skills necessary to diagnose abs and service abs systems</td>
<td>SLO-2: Critical Thinking Skills</td>
</tr>
<tr>
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<td>SLO-3: Professional Competence</td>
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   SLO-1: Communications Skills
   SLO-2: Critical Thinking Skills
   SLO-3: Professional Competence
   SLO-4: Inter/Intrapersonal Skills

K. **TEXTS:** Halderman, James D. *Automotive Brake Systems, 6th edition*

L. **REFERENCES:** All data, Manufacturer’s service manuals, IATN
M. **EQUIPMENT:** Technically enhanced classroom

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

O. **EVALUATION CRITERIA/METHODS:** Test, quizzes, homework, and class participation.

P. **DETAILED TOPICAL 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. Anti-lock Brake Systems
XII. Other Brake Systems