



## MASTER COURSE OUTLINE

A. AUTO 1423 Brake Systems

B. COURSE DESCRIPTION:

This course includes principles, theory, service, and repair of complete brake systems, including anti-lock brake and traction control systems. This course, along with other program courses, satisfies the task requirements set forth in Section V of the National Automotive Technicians Education Foundation (NATEF) accreditation.  
**(4 Cr – 2 lect, 2 lab)**

C. **\*\*Core Theme:** Critical Thinking and People and the Environment

D. MAJOR CONTENT AREAS:

- Principles of braking
- Brake hydraulics
- Brake power assist systems
- Disc and drum and parking brake system
- Anti-lock and traction control systems

E. GOAL TYPES, OBJECTIVES, AND OUTCOMES:

<u>GOAL</u>	<u>OBJECTIVES</u>	<u>OUTCOMES</u>
<b>**Critical Thinking</b>	<b>Students will be able to</b> gather factual information and apply it to a given problem in a manner that is relevant, clear, comprehensive, and conscious of possible bias in the information selected.	<b>The student will successfully</b> 1. explain the relationship between observed malfunctions and the required corrective action.
<b>**People and the Environment</b>	articulate and defend the actions they would take on various environmental issues.	1. explain the need for proper asbestos containment procedures when performing brake-related work.
<b>CS</b>	service brake systems on cars and light trucks properly and safely.	1. perform a complete drum brake job and machine drums. 2. perform complete disc brake job and machine discs. 3. perform hydraulic repairs and bleed brake system. 4. inspect and adjust wheel bearings and parking brake system.

<u>CS</u>	demonstrate the procedures to perform the correct procedures to make sure the vehicle is returned to the road in a safe condition.	<ol style="list-style-type: none"> <li>1. describe and analyze brake fluid quality.</li> <li>2. explain and test the operation of the brake light warning system.</li> <li>3. explain and test the operation of the power assist systems.</li> <li>4. explain and test the operation of brake control valves.</li> <li>5. repair brake lines.</li> </ol>
<u>CS</u>	demonstrate the procedure to diagnose and repair anti-lock brake systems.	<ol style="list-style-type: none"> <li>1. explain the theory and operation of anti-lock brake systems.</li> <li>2. diagnose and repair anti-lock brake systems.</li> </ol>

F. SPECIAL INFORMATION:

This course may require use of the Internet, the submission of electronically prepared documents and the use of a course management software program. Students who have a disability and need accommodations should contact the instructor or the Student Success Center at the beginning of the semester. This information will be made available in alternative format, such as Braille, large print, or current media, upon request.

G. COURSE CODING INFORMATION: Course Code S/Class Maximum 25; Letter Grade

Revision date: 03/09/11; 11/29/17

AASC Approval date: 12/12/17

<b>*Riverland Community College Disciplines</b>	<b>MnTC Goal Number</b>
Communication	<b>1</b>
Natural Sciences	<b>3</b>
Mathematics/Logical Reasoning	<b>4</b>
History and the Social & Behavioral Sciences	<b>5</b>
Humanities and Fine Arts	<b>6</b>

<b>**Riverland Community College Core Themes</b>	<b>MnTC Goal Number</b>
Critical Thinking	<b>2</b>
Human Diversity	<b>7</b>
Global Perspective	<b>8</b>
Ethical and Civic Responsibility	<b>9</b>
People and the Environment	<b>10</b>

\*These five MnTC Goals have been identified as Riverland Community College Disciplines.

\*\* These five MnTC Goals have been identified as Riverland Community College Core Themes.

NOTE: The Minnesota Transfer Curriculum “10 Goal Areas of Emphasis” are reflected in the five required discipline areas and five core themes noted in the Riverland Community College program of study guide and/or college catalog.

Riverland