

# **Copper Country Intermediate School District**

## **Automotive Technology Course Syllabus**

### **Brakes – ASE Standards**

- Instructor:** Ken Wilcox
- Paraprofessional:** Jeff LaMuth
- Phone:** 906-482-8938
- Email:** kwilcox@copperisd.org
- Office Hours:** Monday through Friday, 12:30-1:30 P.M. or by appointment
- For reporting or excusing absences:** All absences reported and excused through the student's sending school.
- College Credit:** **Articulated college credit is available through Bay DeNoc Community College, Gogebic Community College, Northern Michigan University and Ferris State University.**
- Accreditations:** This is a NATEF-certified program. For more information see: [www.natef.org](http://www.natef.org).
- Class Times:**
- |           |                         |
|-----------|-------------------------|
| Block I   | 8:00 A.M. - 9:45 A.M.   |
| Block II  | 10:20 A.M. - 12:00 P.M. |
| Block III | 1:30 P.M. - 3:15 P.M.   |

#### **First Semester - Module #1 Course Description:**

The purpose of this module is to develop a knowledge and understanding of safety within the automotive lab. Also Basic hand and power tools, shop equipment, and various software programs commonly used in the automotive repair industry.

#### **First Semester - Module #2 Course Description:**

The purpose of this module is to develop a knowledge and understanding of automotive braking systems, configurations, functions, operation, and diagnostic procedures. We will accomplish this through the use of demonstrations, classroom activities, and student hands-on lab activities. Also all students will exercise critical thinking skills in the form of analyzing, troubleshooting, and system problem/performance evaluations.

#### **Second Semester - Module #1 Course Description:**

The purpose of this module is to develop a basic knowledge and understanding of automotive Steering and Suspension systems and service procedures. We will accomplish this through the use of demonstrations, classroom activities, and student hands-on lab activities.

#### **Second Semester - Module #2 Course Description:**

The purpose of this module is to develop a knowledge and understanding of various employability skills, including résumé writing, cover letters, and good job interview practices. There will also be a portfolio due at the end of the semester.

**Additional Information:**

- Safety glasses will be provided and *must* be worn by the students at all times while in the lab.
- All modules will incorporate a variety of applied academics.
- Lockers will be assigned.

**Textbook Used:** Automotive Excellence; Glencoe/McGraw-Hill Publishing

**Lab Sheets:**

The instructor supplies lab sheets in sequence with course content. Lab sheets are self-paced; although, it is your responsibility to properly manage your time in order to complete all lab assignments by their deadline. Unless otherwise noted, students may perform their lab assignments in groups, with a MAXIMUM of two people per group. Each student must have their own lab sheet. The student must also complete all questions on the lab sheet and the instructor must sign each lab sheets before credit is given for the task performed.

**Exams:**

One exam will be given at the end of each semester, along with various tests and quizzes given throughout each module.

**Grading System:**

- Skill Achievement Projects 40%
- Written Test and Quizzes 30%
- Attitude 20%
- Attendance 10%

*See student hand book for further details.*

**Grading Scale:**

100-96 = A	76-73 = C
95-90 = A-	72-70 = C-
89-87 = B+	69-67 = D+
86-83 = B	66-63 = D
82-80 = B-	62-60 = D-
79-77 = C+	59- 0 = E

**Applied Technology/Software:**

- ALLDATA Electronic Service Manual
- ALLDATA Service Center Automotive Billing and Shop Management Software
- Wireless mobile computer lab
- Diagnostic equipment displayed live in a classroom setting

## Automotive Technology Course Content

*(Schedule may be modified upon the instructor's discretion.)*

Week	Topic	Lab sheets / Assignment
1	Auto intro, avoiding accidents, safety lab tour, battery safety, fire safety, MSD data sheets, safety quiz, and basic hand tools intro.	Lab safety treasure hunt
2	Continue hand tool intro. Power tools and shop equipment intro. VIN #'s lesson and lab sheet	Hand tools, power tools, and shop equipment lab sheet
3	ALLDATA electronic service manual and ALLDATA Service Center software. Hand and power tools, and shop equipment quiz. Torch lesson, lab sheet, test	ALLDATA lab sheets Torch task
4	Brakes intro / hydraulic system, parts ID, brake fluid	Continued from above
5	Continue from previous week + task demo's	Check brake fluid level. Power, vacuum, and manual bleed brakes. Flare tubing
6	Master cylinders lesson / task demo's	R&R & bench bleed M/C. Rebuild M/C
7	Inspect lines and hoses lesson / demo. Clean up. Rally cars	Inspect lines and hoses
8	Drum brakes intro, duo-servo / leading trailing. ID components lab sheet + task demo's. Drum brake quiz.	Drum brake rebuild. Adjust drum brake. Measure drum.
9	Wheel cylinders / duck bill valve + demo's. Drum brake test	Machine drum. Rebuild wheel cylinder
10,11,12	Deer season/reduced class size. Goodwill Farm inspection sheet lesson and demo	Continue previous tasks and work on Goodwill Farm vehicles
13	Disk brake intro. Micrometers. Calipers + task demo's	Measure rotor. Machine rotor. Rebuild caliper. Rebuild disk brake
14	Wheel bearings + task demo's	Pack wheel bearing. R&R non-serviceable bearing. Measure rotor and bearing run-out. Replace wheel stud
15	Disk brake review. Test. Cleanup	Continue previous tasks

<b>Week</b>	<b>Topic</b>	<b>Lab sheets / Assignment</b>
16	Combination valves and brake warning lamps + demo's	Diagnose brake warning lamp.
17	Brake lamps, parking brake, rear disk	Diagnose brake lamps. Adjust parking brake
18	Exam week	None
19	Power brakes lesson / demo. R&R axle seal lesson / demo P/B test	Check pedal free travel. Inspect and diagnose P/B and check valve. R&R axle seal
20	ABS intro, I.D. components, basic operation	I.D. & inspect ABS components
21	ABS continued. ABS quiz	Diagnose ABS lamp. Diagnose ABS driving conditions.
22	ABS continued. ABS test	Test individual ABS components. R&R wheel speed sensor
23-24	General steering and suspension System components and operation + Task demo's Quiz	Detail task list to be announced
25-26	Front and rear suspension systems overview and Service + Task demo's, Quiz.	Detail task list to be announced
27-28	Front and rear steering systems overview and service + Task demo's, Quiz	Detail task list to be announced.
29-30	Alignment angles and pre alignment inspection + Task demo's Quiz	Detail task list to be announced.
31-32	Front and rear alignment + Tasks demo's, quiz	Detail task list to be announced.
33-34	Résumé writing, cover letters, Mock-up interviews. Portfolios. Detailed content and schedule to be announced	Continue previous lab sheets. Write Résumé and cover letter. Participate in mock-up interview. Create a portfolio.
35-36	Open lab / tasks / make-up work / wheels cars / exam review / final exam / cook out / shop clean up. Detailed schedule to be announced	None

