

Copper Country Intermediate School District Automotive Technology Course Syllabus Steering and Suspension – ASE Standards

- Instructor:** Ken Wilcox
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- 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.
- Class Times:**
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|-----------|-------------------------|
| 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 steering and suspension 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 braking 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 filling out job applications 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	Tire lesson + inspection, run-out, and repair demo Tire test	Continued from above + inspection, run-out, and repair task
5	Wheel bearing lesson +demo's Wheel bearing test	Serviceable & non-serviceable bearing task
6	Steering system intro + task demo's Component ID test	Component ID, check P/S fluid level and leaks task
7	Rack & pinion lessons / demo. Clean up. Rally cars Rack & pinion test	R&R rack, inner tie rods, and rebuild rack tasks
8	Manual & power steering gear. ID components lab sheet + task demo's.	R&R LTD gearbox, adjust mock-up manual gearbox
9	Parallelogram steering parts ID review – operation and inspection + demos and test	R&R conventional steering linkage (all), lubricate
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	Power steering lesson, parts ID, operation and inspection + demos and test	R&R P/S pump, rebuild pump. Graph EVO vs. MPH
14	Airbag, steering wheel, and column lessons parts ID, operation and inspection + demos and test. Cleanup	Disable SIR, steering wheel, and column tasks
15	Suspension system intro lessons + parts ID, operation and inspection + demos	Parts ID tasks, continue previous tasks

Week	Topic	Lab sheets / Assignment
16	Front and rear strut suspension lessons, parts ID, operation and inspection + demos, test	R&R strut and spring, sway bar, and strut rod.
17	Tasks, wheels cars, make-up work, exam review	Continue previous tasks
18	Exam week	None
19	SLA suspension lessons, parts ID, operation and inspection + demos, test	R&R spring, upper & lower control arms and bushings. R&R ball joints
20	Rear suspension lessons, parts ID, operation and inspection + demos, test	R&R rear coil springs, lateral links, and shocks
21	Alignment angles intro and pre-alignment inspection + demos	Pre-alignment inspection, measure ride height, and inspect cradle tasks.
22	Pre-alignment inspection review and diagnose alignment problems lessons + demos, test	Check and adjust rear camber and toe
23	Diagnose alignment problems review, front adjustable and non-adjustable angles lessons + demo, test	Check and adjust front caster, camber, and toe. Check turning radius, SAI, thrust angle, and setback tasks
24, 25	Basic braking stems and hydraulics.	To be announced
26, 27	Basic disc and drum brake assemblies, components and service.	To be announced
28, 29	Mock-up interviews. Exam review / final exam Detailed schedule to be announced	Continue previous lab sheets. finish portfolios. Participate in mock-up interview.
30, 31	Open lab / tasks / make-up work / wheels cars / cook out / shop clean up. Detailed schedule to be announced	None