

Syllabus for AT-20 Automotive Steering and Suspension

Course Information

- Semester and Year: Spring 2026
- Course ID and Section number: AT-20 E9887
- Instructor's name: Anibal Florez
- Day and time of required meetings: Tuesdays and Thursdays at 1:15pm to 5:35pm
- Location: AT-128 and AT-129
- Number of proctored exams: 6
- Course units: 4

Instructor Contact Information

- Office location: AT-141
- Office hours: By appointment
- Phone number: 707-476-4373
- Email address: Anibal-Florez@redwoods.edu

Required Materials:

- ANSI Z87.1+ safety glasses
- Closed toed shoes
- The course textbook

Catalog Description

A course covering the theories and principles related to automotive steering and suspension systems. Topics will include tire and wheel balancing, alignment angles, steering system geometry and supplemental restraint systems (SRS). The laboratory portion of the course will include diagnosis, adjustment, repair, and replacement techniques for automotive and light truck suspension and steering components. Automotive alignment measuring and adjusting procedures will be emphasized. The course is designed in conjunction with ASE Education Foundation (ASE) standards and subsequently will prepare the student for the ASE Suspension & Steering Certification Examination.

Course Student Learning Outcomes

1. Diagnose general suspension and steering systems.
2. Diagnose and repair wheel alignment problems.
3. Diagnose and repair wheel and tire problems

Textbook information

Title: Automotive Steering and Suspension

Author: John F. Kershaw, Ed.D., Kirk VanGelder

ISBN: 978-1-284-10209-3

Course Calendar

Date	Topic/Focus & Shop	Assigned Reading
1-20	Introductions, shop orientation, ROs	
1-22	Strategy based diag., shop safety	Ch. 1, 2
1-27	Tools, and Measuring	Ch. 3
1-29	Test I Safety, Tools, & Measuring	
2-3	Tires & Wheels Tire & Wheel Service	Ch. 5,7,8
2-5	Tires & Wheels Tire & Wheel Service	Ch. 5,7,8
2-10	Wheel Bearings Wheel Bearing Service	Ch. 5,7,8
2-12	Wheel Bearings Wheel Bearing Service	Ch. 5,7,8
2-17	Test II Tires, Wheels, & Bearings	
2-19	Shocks & Struts Shock & Struts Service	Ch. 9,10
2-24	Shocks & Struts Shock & Struts Service	Ch. 9,10
2-26	Rear Suspension Rear Suspension Service	Ch. 9,10
3-3	Rear Suspension Rear Suspension Service	Ch. 9,10
3-5	Front Suspension Front Suspension Service	Ch. 9,10
3-10	Front Suspension Front Suspension Service	Ch. 9,10
3-12	Test III Suspension Systems	
3-17	Spring Break	
3-19	Spring Break	
3-24	Wheel Alignment Wheel Alignment Service	Ch. 6,13,14
3-26	Wheel Alignment Wheel Alignment Service	Ch. 6,13,14
3-31	No Classes Today For All	
4-2	Wheel Alignment Wheel Alignment Service	Ch. 6,13,14
4-7	Wheel Alignment Wheel Alignment Service	Ch. 6,13,14
4-9	ADAS Discussion ADAS Calibration	Hand-Out
4-14	ADAS Discussion ADAS Calibration	Hand-Out
4-16	Field Trip TBD	
4-21	Test IV Wheel Alignment	
4-23	Rack & Pinion & Service	Ch. 11,12
4-28	Rack & Pinion & Service	Ch. 11,12
4-30	Steering Gear & Service	Ch. 11,12
5-5	Suspension Electronics & Electronic Service	Ch. 11,12
5-7	Suspension Electronics & Electronic Service	Ch. 11,12
5-8	Test V Power Steering & Electronic Systems	
5-14	Comprehensive Final Exam	

Evaluation and Grading Policy

Course Grading System

Theory Portion

Test I	Safety, Tools, & Measuring	50 points
Test II	Tires, Wheels, & Bearing, Service	50 points
Test III	Suspension Systems	50 points
Test IV	Wheel Alignment	50 points
Test V	Power Steering & Electronic Systems	50 points
Chapter Questions		100 points
Final Exam Comprehensive		<u>150 points</u>
Total possible Points		500 points

Extra Credit

Each student may arrange with instructor to read and report on a topic related to suspension and steering from a source other than the course text or the internet i.e. trade publications, library reference material, magazines, newspaper articles, etc... The report must be no less than one page typed and no longer than three pages. You must properly cite your references on a separate page. You may earn up to 50 points per report, and you may turn in a maximum of 1 report per semester. Please inform the instructor and agree on a topic **before** doing this assignment.

There are additional extra credit options through Ford's online training program.

Laboratory Portion

Safety, Tools, Measuring	50 points
Tires, Wheels, Bearings	100 points
Shock and Strut Service	50 points
Suspension System Service	100 points
Wheel Alignment Service	100 points
Power Steering Service	<u>100 points</u>
Total Possible Points	500 points

Prerequisites/corequisites/ recommended preparation

None

Educational Accessibility and Support

College of the Redwoods is committed to providing reasonable accommodation for qualified students who could benefit from additional educational support and services. You may qualify if you have a physical, mental, sensory, or intellectual condition which causes you to struggle academically, including

but not limited to:

- Mental health conditions such as depression, anxiety, PTSD, or bipolar disorder
- Common ailments such as arthritis, asthma, diabetes, autoimmune disorders, and diseases
- Temporary impairments such as a broken bone, recovery from significant surgery, or a pregnancy-related disability
- Neurodevelopmental disorders such as a learning disability, intellectual disability, autism, acquired brain injury, or ADHD
- Vision, hearing, or mobility conditions

Available services include extended test time, quiet testing environments, academic assistance and tutoring through the [LIGHT Center](#), counseling and advising, alternate formats of course materials (e.g., audio books, braille, E-texts), assistive technology, learning disability assessments, approval for personal attendants, interpreters, priority registration, on-campus transportation, adaptive physical education and living skills courses, and more. If you believe you might benefit from disability- or health-related services and accommodations, please contact [Student Accessibility Support Services \(SASS\)](#). If you are unsure whether you qualify, please contact Student Accessibility Support Services (SASS) for a consultation: sass@redwoods.edu.

SASS office locations and phone numbers

Eureka campus

- Phone: 707-476-4280
- Location: Learning Resource Center (Library)

Del Norte campus

- Phone: 707-465-2353
- Location: main building, near the Library

Klamath-Trinity campus

- Phone: 707-476-4280