



Master Course Syllabus

For additional course information, including prerequisites, corequisites, and course fees, please refer to the Catalog: <https://catalog.uvu.edu/>

Semester: Spring

Year: 2025

Course Prefix: AUT

Course and Section #: 1210-001

Course Title: Steering and Suspension

Credits: between 1 and 3

Course Description

Explores nomenclature, theory, and service procedures for passenger car and light-truck suspension and steering systems, including computer-controlled power steering and suspension systems. Provides instruction in two-wheel and four-wheel electronic systems and presents alignment methods, incorporating computerized tools. Covers advanced wheel and tire service topics. Explores advanced topics and service procedures for hybrid and electric vehicle steering and suspension systems, including ADAS.

Course Attributes

This course has the following attributes:

- General Education Requirements
- Global/Intercultural Graduation Requirements
- Writing Enriched Graduation Requirements
- Discipline Core Requirements in Program
- Elective Core Requirements in Program
- Open Elective

Other: *Click here to enter text.*

Instructor Information

Instructor Name: Jim Oldham

Student Learning Outcomes

After successful completion of this course students should :

- understand alignment angles and their purpose
 - know how to diagnose noise and vibration issues related to steering and suspension
 - understand steering and suspension systems
 - be able to perform an alignment
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Course Materials and Texts

"Automotive Steering, Suspension and Alignment" seventh edition, by James Halderman or
Automotive Steering, Suspension & Alignment 8th Edition

Link to the 8th edition is: <https://www.vitalsource.com/referral?term=9780135758397>

Tools:

As in industry, each student will be expected to provide their own basic set of hand tools to complete the lab assignments. Specialty tools can be checked out from the tool room after paying the fee.

Course Requirements

Grading Standards:

A 93%+ A- 90-93% B+ 87-89% B 84-86% B- 81-83% C+ 78-82
C 75-77% C- 71-74% D+ 65-70% D- 62-64% E < 62%

Grading Categories:

- Class assignments / Quizzes (homework)
- Tests
- Presentation of Term Project
- Attendance

Course Policies:

Safety is a must. Not following correct safety procedures can endanger yourself and all others in the shop. We will discuss proper safety practices and procedures before any work can begin in the shop. Not following correct safety procedures will result in a loss of points. Serious deliberate safety violations will result in the student's removal from the program.

Home Work Assignments:

These assignments are chapter readings followed by answering chapter quiz questions. The answers may be submitted in canvas before class or in person at the beginning of class.

Testing:

Missed tests and assignments must be made up within one week of the original date given and have a 10% penalty. This penalty can be avoided by taking the test early. Make the appropriate arrangements through the instructor.

Term Project:

Students will propose a topic related to steering and suspension to the Instructor in the form of a written proposal. If approved, students will prepare an informative presentation about the topic. The presentation should last 5-8 minutes and will be given in class on the last two days of theory at the end of the block. A copy of the presentation will be given to the Instructor (uploaded to Canvas) before you start your presentation.

Attendance:

Tardiness and absences are missed opportunities to earn points towards your grade. You are expected to be in class each day, prepared to work. One missed day (there are only 15 class periods) will impact your ability to progress in this subject.

Classes Attended - 15 = 100%, 14=93%, 13=87%, 12=80%, 11=73%, 10=67%, 9=60%

Projects:

Each course has specific learning objectives. To complete each course, specific hands-on tasks must be completed to a quality and time standard. All projects must be approved by the Instructor and be on the list before a work date can be assigned. Vehicle projects will be assigned to the student. Lab projects will encompass all listed performance tasks required and learning outcomes. Although each project will

not have all the desired performance tasks needed, all projects as a whole will provide a complete list. The classes are arranged in a specific order to teach the required sequence and steps necessary, so projects must meet the module's task requirements. Personal vehicles are fine to work on if they provide the needed performance task, are approved by the Instructor, and are on the list.

Required or Recommended Reading Assignments

Chapters from book

General Description of the Subject Matter of Each Lecture or Discussion

Topics we will cover:

Analyze vehicle steering and suspension systems for performance and stability issues.

Demonstrate proficiency in alignment service procedures, including advanced electronically controlled systems.

Diagnose advanced wheel and tire service issues, including diagnostics with advanced wheel and tire equipment and scan tools.

Evaluate ESC, EPS, TPMS, ADAS components as they relate to Modern electronic vehicle systems.

Identify and safely service Hybrid and Electric Vehicle steering and suspension systems.

Required Course Syllabus Statements

Generative AI

The use of Artificial Intelligence (AI) programs is becoming a fact of life. As this technology becomes more prevalent and more advanced, it is conceivable that no business will be able to operate efficiently and effectively without it.

Students must balance the benefits of utilizing AI assistance in the research and preparation of project materials within the framework of issues of Academic Ethics and Honesty.

Students are responsible for their use of AI in an ethical manner. Using AI without proper parameters constitutes plagiarism.

Generative AI is a subset of artificial intelligence models capable of generating new content, be it text, images, music, or other forms of data. By learning patterns from existing large amounts of data, these models can produce novel outputs that were not part of their training set, mimicking the style and structure of the learned data. ChatGPT is what is called a Large Language Model (LLM) type of AI.

Using Remote Testing Software

This course does not use remote testing software.

This course uses remote testing software. Remote test-takers may choose their remote testing locations. Please note, however, that the testing software used for this may conduct a brief scan of remote test-takers' immediate surroundings, may require use of a webcam while taking an exam, may require the microphone be on while taking an exam, or may require other practices to confirm academic honesty. Test-takers therefore shall have no expectation of privacy in their test-taking location during, or immediately preceding, remote testing. If a student strongly objects to using test-taking software, the student should contact the instructor at the beginning of the semester to determine whether alternative testing arrangements are feasible. Alternatives are not guaranteed.

Required University Syllabus Statements

Accommodations/Students with Disabilities

Students needing accommodations due to a permanent or temporary disability, pregnancy or pregnancy-related conditions may contact UVU [Accessibility Services](#) at accessibilityservices@uvu.edu or 801-863-8747.

Accessibility Services is located on the Orem Campus in BA 110.

Deaf/Hard of Hearing students requesting ASL interpreters or transcribers can contact Accessibility Services to set up accommodations. Deaf/Hard of Hearing services can be contacted at DHHservices@uvu.edu

DHH is located on the Orem Campus in BA 112.

Academic Integrity

At Utah Valley University, faculty and students operate in an atmosphere of mutual trust. Maintaining an atmosphere of academic integrity allows for free exchange of ideas and enables all members of the community to achieve their highest potential. Our goal is to foster an intellectual atmosphere that produces scholars of integrity and imaginative thought. In all academic work, the ideas and contributions of others must be appropriately acknowledged and UVU students are expected to produce their own original academic work.

Faculty and students share the responsibility of ensuring the honesty and fairness of the intellectual environment at UVU. Students have a responsibility to promote academic integrity at the university by not participating in or facilitating others' participation in any act of academic dishonesty. As members of the academic community, students must become familiar with their [rights and responsibilities](#). In each course, they are responsible for knowing the requirements and restrictions regarding research and writing, assessments, collaborative work, the use of study aids, the appropriateness of assistance, and other issues. Likewise, instructors are responsible to clearly state expectations and model best practices.

Further information on what constitutes academic dishonesty is detailed in [UVU Policy 541: Student Code of Conduct](#).

Equity and Title IX

Utah Valley University does not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation, gender identity, gender expression, age (40 and over), disability, veteran status, pregnancy, childbirth, or pregnancy-related conditions, citizenship, genetic information, or other basis protected by applicable law, including Title IX and 34 C.F.R. Part 106, in employment, treatment, admission, access to educational programs and activities, or other University benefits or services.

Inquiries about nondiscrimination at UVU may be directed to the U.S. Department of Education's Office for Civil Rights or UVU's Title IX Coordinator at 801-863-7999 – TitleIX@uvu.edu – 800 W University Pkwy, Orem, 84058, Suite BA 203.

Religious Accommodation

UVU values and acknowledges the array of worldviews, faiths, and religions represented in our student body, and as such provides supportive accommodations for students. Religious belief or conscience broadly includes religious, non-religious, theistic, or non-theistic moral or ethical beliefs as well as participation in religious holidays, observances, or activities. Accommodations may include scheduling or due-date modifications or make-up assignments for missed class work.

To seek a religious accommodation, a student must provide written notice to the instructor and the Director of Accessibility Services at accessibilityservices@uvu.edu. If the accommodation relates to a scheduling conflict, the notice should include the date, time, and brief description of the difficulty posed by the conflict. Such requests should be made as soon as the student is aware of the prospective scheduling conflict.

While religious expression is welcome throughout campus, UVU also has a [specially dedicated space](#) for meditation, prayer, reflection, or other forms of religious expression.