

DESL 1033 : Diesel Steering and Suspension

3 credit hours (2 lecture/2 lab)

This course is designed to provide the necessary knowledge required to be able to: identify, service, troubleshoot, remove, disassemble, inspect, reassemble, and install steering assemblies and suspensions. Lubrication, manual and remote controls for tag/lift axles, frame repair, cab suspension, failure analysis and parts evaluation are included. The course is a mixture of textbook, videos, lecture, hands-on exercises and on-site instruction at a local diesel repair facility.

Topical Outline

- Steering axis inclination
- Identification and determination of steering concerns
- Solid axle suspension
- Toe-out on turns front and rear suspension systems
- Alignment angle effects
- Included angle
- Spring types and service
- Caster, camber, toe
- Thrust angle
- Alignment sequence
- Component inspection/replacement
- Steering gear systems
- Equipment identification and use
- Power steering pumps
- Air-ride systems

Course Outcomes

At the end of this course, students will be able to:

1. Demonstrate proper shop safety practices while in the labs.
2. Identify tools used for steering and suspension repair.
3. Disable supplemental restraint systems in accordance with manufacturers' procedures.
4. Diagnose steering and suspension components to determine need for replacement.
5. Remove and replace steering and suspension components.
6. Describe steering and alignment geometry.
7. Perform pre-alignment checks according to industry standards.
8. Diagnose rear suspension system and determine needed service or repair.
9. Inspect, service, and replace front leaf spring bushings, pins, and shackles.
10. Inspect and service air springs.
11. Inspect, diagnose, and repair air ride systems.
12. Inspect and service kingpins.