Course Competency

TRA 0080 Tractor Trailer Truck Driver

Course Description

The Tractor Trailer Truck Driver course prepares students for entry into the trucking and logistics industry. Students explore career opportunities and requirements of a professional tractor trailer driver. Students study vehicle safety, accident prevention, operating regulations, cargo handling, documentation procedures, pre-trip preparation, vehicle inspection, maintenance, service, control procedures, backing, coupling, uncoupling, maneuvering, road and hazardous driving skills, and licensing requirements.

Course Competency	Learning Outcomes
Competency 1: The student will be able to demonstrate comprehension of vehicle safety and accident prevention procedures by:	1. Communication 2. Numbers / Data 3. Critical thinking 4. Information Literacy 5. Social Responsibility 6. Computer / Technology Usage 7. Environmental Responsibility
1. Identifying and explaining the use of vehicle safety equipment. Utilizing fire extinguishers. Utilizing seat belts and personal protection gear appropriate to type of operation. Demonstrating safe lifting procedures through use of hands-on labs or through viewing safety video. Describing personal safety equipment and procedures. Describe actions applicable for vehicle accidents. Reviewing reports in a classroom activity. Adhering to accident reporting requirements (company, state, federal). Identifying all information needed for accident reports to the State, the employer and the insurance company. Reviewing an accident report. Describing procedures for protecting the scene of an accident. Describing personal liability requirements. Identifying hazardous road conditions that are a potential threat to the	

safety of the truck driver. Describing activities and characteristics of other road users that make them potentially dangerous. Describing the potential consequences of excessive speed. Describing the potential consequences of use of drugs or alcohol. Describing and demonstrating safety procedures for entering and exiting vehicles.	
Competency 2: The student will be able to understand and comply with vehicle operating regulations by:	1. Communication 2. Numbers / Data 3. Critical thinking 4. Social Responsibility 5. Environmental Responsibility 6. Computer / Technology Usage
1. Complying with Hours of Service regulations. Maintaining a complete, neat and accurate driver's duty status log including discussion of electronic logs. Keeping accurate records required by hours of service regulations. Reviewing mathematical calculations necessary to recap and applying totals to the hours of service regulations. Determining driving hours remaining on a particular day or tour of duty. Complying with applicable United States Department of Transportation regulations including Federal Motor Carrier Safety Administration rules and regulations - Compliance, Safety, and Accountability (CSA) particularly the role of drivers and motor carriers. Complying with Federal, State and local traffic laws including restrictions on vehicle size and weight including permits when required.	
Competency 3: The student will be able to demonstrate proper cargo handling and documentation procedures by:	1. Communication 2. Numbers / Data 3. Critical thinking 4. Information Literacy 5. Social Responsibility

	6. Environmental Responsibility 7. Computer / Technology Usage
1. Loading and unloading cargo safely and efficiently. Calculating legal gross weight and axle weight. Describing cargo load to meet legal weight and safety requirements. Securing cargo using blocking, bracing, packing, rope, cable, chains and strapping. Identifying types of hazardous cargoes. Identifying the proper placement of placards when carrying hazardous materials. Implementing procedure for use of common cargo handling equipment, including pallets, jacks, dollies, hand trucks, nets, slings, poles and other equipment. Identifying categories of hazardous materials and the need for specialized training to handle hazardous materials. Describing hazardous materials documentation requirements. Verifying nature, amount and condition of cargo on both pickup and delivery. Verifying information on bill of lading and properly record and report discrepancies and damage to the cargo. Verifying appropriate signatures on delivery receipts and other required forms. Comparing door seal number against shipping document. Describing the handling of C.O.D. shipments. Complying with weigh station and other inspection station procedures. 2. Understanding how to load and unload cargo safely and efficiently. Understanding legal gross weight and axle weight. Describing cargo load to meet legal weight and safety requirements. Understanding how to secure cargo using blocking, bracing, packing, rope, cable, chains and strapping. Identifying types of hazardous cargoes. Understanding the placement of placards when carrying hazardous materials. Understanding procedure for use of common cargo handling equipment, including pallets, jacks, dollies, hand trucks, nets, slings, poles and other	

equipment. Understanding categories of hazardous materials and the need for specialized training to handle hazardous materials. Understanding hazardous materials documentation requirements. Verifying nature, amount and condition of cargo on both pickup and delivery. Verifying information on bill of lading and properly record and report discrepancies and damage to the cargo. Verifying appropriate signatures on delivery receipts and other required forms. Comparing door seal number against shipping document. Describing the handling of C.O.D. shipments. Complying with weigh station and other inspection station procedures.	
Competency 4: The student will be able to demonstrate trip planning preparation procedures by:	1. Communication 2. Numbers / Data 3. Critical thinking 4. Information Literacy 5. Computer / Technology Usage 6. Environmental Responsibility 7. Social Responsibility
1. Checking vehicle registration and permit. Checking accident report packets for proper contents. Planning a route from one point to another that is optimal in terms of travel time, fuel costs, potential hazards and federal, state and local travel restrictions. Describing the use of manual and contemporary GPS navigation systems. Estimating travel times and arrange for a secure place for layovers, especially when transporting hazardous materials. Demonstrating map reading skills. Estimating fuel consumption and plan fuel stops. Estimating expense money and obtain funds and/or credit cards.	
Competency 5: The student will be able to demonstrate vehicle inspection procedures by:	1. Communication 2. Numbers / Data

	3. Critical thinking 4. Information Literacy 5. Social Responsibility 6. Environmental Responsibility 7. Computer / Technology Usage
1. Checking for previous days DVIR. Checking general appearance and condition of vehicle. Checking fuel, oil, water levels and automatic transmission fluid level and diesel emissions fluid (DEF). Checking signal lights, stop lights and running lights. Checking tires, rims and suspension. Checking horn, windshield wipers, mirrors and reflectors. Checking fifth wheel, trailer hook-up and brake lines. Checking emergency bi-directional reflective triangles and fire extinguishers. Checking instruments for normal readings. Checking steering system, brake action and tractor protection valve. Checking cargo-blocking, bracing and tie down. Performing enroute inspections. Performing post-trip inspection of vehicle and all systems.	
Competency 6: The student will be able to perform vehicle maintenance and servicing procedures by:	1. Communication 2. Numbers / Data 3. Critical thinking 4. Information Literacy 5. Social Responsibility 6. Computer / Technology Usage 7. Environmental Responsibility
1. Describing function and operation of principle vehicle systems including, engine, engine auxiliary brake, drive train, coupling, suspension and electrical system, DEP engines, and regeneration processes where applicable. Checking engine fuel, oil, DEF fluid, coolant, battery and filters. Checking tire air pressure. Draining moisture from air brake supply reservoirs.	

Checking brakes and related systems. Checking fuses and reset circuit breakers. Cleaning interior and exterior of vehicle. Checking mud/rain flaps. Reviewing adjusting procedures for tandem and fifth-wheel slides, if so equipped.	
Competency 7: The student will demonstrate basic vehicle control procedures by:	1. Numbers / Data 2. Critical thinking 3. Information Literacy 4. Social Responsibility 5. Computer / Technology Usage 6. Environmental Responsibility
1. Placing transmission in neutral before starting engine. Starting, warming up and shutting down the engine, according to the manufacturer's specifications. Building full pressure (90-120 PSI) in air tanks or to governed cut-out. Testing parking brake and service brake before moving/driving vehicle. Coordinating use of accelerator and clutch to achieve smooth acceleration and avoid clutch abuse (if applicable). Maintaining proper engine RPM while driving (if applicable). Properly modulating air brakes to bring vehicle to a smooth stop. Properly shifting up and down through all gears using clutch (if applicable). Double clutching non-synchronized transmissions and time shifting for smooth and fuel efficient performance (if applicable). Selecting proper gear for speed and highway conditions (if applicable). Operating manual, automatic or semiautomatic transmissions as available training equipment allows. Coordinating steering, braking and acceleration to take the vehicle through a desired path forward and backward in a straight line. Adequately judging the path trailer will taking (off tracking) as vehicle negotiates left or right curves and turns. Using clutch and gears to	

maintain proper operating range/power/ RPM of the motor while slowing the vehicle (if applicable). Parking the vehicle, setting brakes and shutting off the engine. Discussing chocking procedures.	
Competency 8: The student will demonstrate backing skills and basic vehicle maneuvers by:	1. Communication 2. Numbers / Data 3. Critical thinking 4. Information Literacy 5. Social Responsibility 6. Environmental Responsibility 7. Computer / Technology Usage
1. Checking area before and during backing. Properly utilizing guides and mirrors. Properly backing in straight line and curved paths. Properly backing into both a 45° and 90°alley docks. Navigating through a 100 feet alley both forward and backward. Properly demonstrating an offset left/right backing maneuver. Properly positioning unit for backing into a loading dock. Properly backing to a dock. (actual or simulated) Properly stopping unit within 36 inches of the dock without contacting dock. (actual or simulated) Properly parallel parking (sightside/blindside). Judging side, rear and overhead clearances and path of the trailer. Making a straight-in approach to an alley. Driving forward through an alley for 100 feet.	
Competency 9: The student will demonstrate coupling and uncoupling skills by:	1. Numbers / Data 2. Critical thinking 3. Information Literacy 4. Computer / Technology Usage 5. Environmental Responsibility 6. Social Responsibility
1. Reverse-steering and articulating a	

vehicle. Aligning the tractor properly to connect with trailer. Backing and securing the tractor properly into the trailer kingpin without damage. Performing tug test against the locking mechanisms and performing visual checks to make sure coupling is secure. Connecting electrical and air lines properly. Setting in-cab air brake controls properly. Retracting and securing landing gear after coupling is secure. Properly uncoupling and securing the trailer.	
Competency 10: The Student will be able to demonstrate road driving skills by:	1. Communication 2. Numbers / Data 3. Critical thinking 4. Information Literacy 5. Social Responsibility 6. Computer / Technology Usage 7. Environmental Responsibility
1. Carefully entering traffic from a stopped or parked position. Using clutch and gears properly (if applicable). Proceeding from a stopped position without rolling backward. Using mirrors properly. Signalling intention to turn well in advance of turn. Getting into proper lane to turning well in advance of turn. Checking traffic conditions and turning only when intersection is clear. Restricting traffic from passing on right when preparing to complete a right hand turn. Maintain 3 feet or less on right side of vehicle. Executing a right hand turn maintaining 3 feet or less on right side of vehicle. Completing a turn promptly and safely and not impeding other traffic. Selecting and shifting to proper gear prior to beginning any turn (if applicable). Obeying all traffic signals. Planning stops in advance and adjusting speed correctly. Using brakes properly on grades. Planning stops far enough in advance to avoid hard braking. Stopping	

clear of crosswalks. Coming to a complete stop at all stop signs. Yielding right of way at intersections having yield signs. Checking for cross traffic regardless of traffic signals. Approaching all intersections prepared to stop if necessary. Stopping a minimum of 15 feet but not more than 50 feet before railroad grade crossing if stop is necessary. Selecting proper gear to avoid shifting gears on railroad grade crossing (if applicable). Determining sufficient space required for passing. Passing only in safe locations. Describing in detail how to pass safely on a two-lane highway. Describing in detail how to pass safely on a four or more lane highway. Signalling lane changes before and after passing. Passing only when appropriate to avoid impeding other traffic. Returning to right lane promptly, but only when safe to do so. Observing speed limits. Adjusting speed properly to road, weather and traffic conditions. Slowing down in advance of curves, danger zones and intersections. Maintaining consistent speed where possible. Yielding right of way. Allowing faster traffic to pass. Demonstrate the proper procedures for navigating a weigh station. Using horn only when necessary. Parking only in legally permissible parking areas. Checking instruments at regular intervals. Maintaining proper engine RPM while driving. Determining minimum front-to-rear distances when following other vehicles using industry recognized standards.	
Competency 11: The student will be able to demonstrate hazardous driving skills by:	1. Communication 2. Numbers / Data 3. Critical thinking 4. Social Responsibility 5. Computer / Technology Usage 6. Environmental Responsibility

1. Implementing proper preparation for operation in cold weather. Demonstrating proper procedure for expelling moisture from the air tanks after each trip. Listing proper procedure for checking ice accumulation on brakes, slack adjuster, air hoses, electrical wiring and radiator shutters during operation. Performing operational adjustments necessary to maintain control in all weather conditions, including speed selection, braking and following distance. Describing procedures to check safe operation of brakes after driving through deep water. Performing proper use of windshield wipers, washers and defrosters to maintain visibility. Demonstrating the ability to recognize and evaluate changing road conditions that produce low traction, including initial rainfall, ice, snow and mud. Demonstrating or understand ability for recognizing conditions that produce low traction, including initial rainfall, ice, snow and mud. Implementing proper procedures to avoid skidding and jackknifing. Implementing proper procedures to avoid hydroplaning and describe the road and vehicle conditions that produce it. Implementing proper procedures for mounting and dismounting tire chains. Implementing proper procedures for extricating the vehicle from snow, sand and mud by maneuvering or towing. Demonstrating ability to adjust rate of change in speed and direction to accommodate road conditions to avoid skidding. Describing procedures required to coordinate acceleration and shifting to overcome the resistance of snow, sand and mud. Demonstrating ability to perform brake checks on equipment prior to mountain driving. Restating procedures required to use right lane or special truck lane going up grades. Restating procedures required to place transmission in appropriate gear for engine braking before starting downgrade. Restating procedures	

required to use proper braking techniques and maintain proper engine braking before starting downgrades. Applying proper use of truck escape ramp when brakes fail on a downgrade. Restating proper procedure required for observing temperature gauge frequently when pulling heavy loads up long grades. Describing the effect of vehicle weight and speed upon braking and shifting ability on long downgrades. Identifying the meaning and use of percent of grade signs. Arranging to bring the truck to a stop in the shortest possible distance while maintaining directional control on a dry surface. Employing procedures to make an evasive turn off the roadway and return to the roadway while maintaining directional control. Employing procedures to bring the vehicle to a stop in the event of a brake failure. Employing procedures to maintain control of the vehicle in the event of a blowout. Employing procedures to bring truck to a stop in the shortest possible distance while maintaining directional control when operating on a slippery surface. Employing procedures to recover from vehicle skids induced by snow, ice, water, oil, sand, wet leaves or other slippery surfaces. Employing procedures to counter steer out of a skid in a way that will regain directional control and not produce another skid. Employing procedure to operate brakes properly to provide maximum braking without losing control.	
Competency 12: The student will be able to apply concepts learned for obtaining a Commercial Driver's License (CDL) by:	1. Communication 2. Numbers / Data 3. Critical thinking 4. Information Literacy 5. Social Responsibility 6. Computer / Technology Usage 7. Environmental Responsibility

1. Demonstrating competence in performing basic Commercial Vehicle Driving skills utilizing the CDL testing criteria. Demonstrating comprehension and knowledge of Commercial Vehicle Driving Laws as required, to safely and legally operate a commercial vehicle.	

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