Professional Truck Driver Training Course Syllabus

The curriculum standards of this course incorporate the curricular recommendations of the U. S. Department of Transportation's Federal Highway Administration's former Office of Motor Carriers Model Curriculum. The curriculum standards represent the minimum training elements that a commercial motor vehicle driver-training course should contain, and against which any such course may be judged.

The curriculum that the Nebraska Safety Center uses also meets the three sets of standards that the Professional Truck Drivers Institute (PTDI established: skill standards; curriculum standards and guidelines; and standards and requirements for course certification.

1. **Orientation**
   The purpose of this section is to introduce the student to the trucking industry and present the concepts of industry regulation and the professional driver

   a. **Objectives**
      At the end of this section, the student should know/understand:
      i. The Importance of the Trucking Industry
      ii. The Importance of Compliance with Applicable Regulations
      iii. Procedure for Obtaining a CDL
      iv. The Driver Qualifications They are Subject to in the Industry
      v. The Commercial Motor Vehicle

2. **Control Systems**
   The purpose of this section is to introduce students to the controls and instruments found on a commercial motor vehicle. Stress the importance of understanding the function of all of the vehicle's controls and instruments prior to operating the vehicle.
   a. **Objectives**
      At the end of this section, students should have the basic understanding of the name, location, and function of the vehicles controls and systems. The student should be able to:
      i. Describe the engine controls as well as the primary and secondary vehicle controls
      ii. Identify and describe the controls for starting the engine, shifting, accelerating, braking, and parking
      iii. Explain the acceptable operating range for oil, coolant, and electrical systems
      iv. Identify and describe all vehicle instruments and their purpose

3. **Vehicle Systems**
   The purpose of this section is to introduce the student to the design of a tractor-trailer and the vehicle's key systems and parts.
   a. **Objectives**
      Upon completion of this section the student will have basic understanding of the vehicle construction and systems including:
      i. Suspension Systems
      ii. Axles
      iii. Engine

iv. Fuel System
v. Air Intake and Exhaust System
vi. Lubrication System
vii. Cooling System
viii. Electrical System
ix. Drive Train
x. Brake System
xi. Wheels and Tires
xii. Steering System
xiii. Coupling System

4. Vehicle Inspection

In this section the student will learn the importance of conducting appropriate and systematic vehicle inspections.

a. Objectives

At the end of this section the student should know and understand:

i. How to use systematic procedure to conduct accurate and efficient vehicle inspection
ii. How to identify damaged, loose, or missing parts
iii. How to recognize and report system defects
iv. Why an undiscovered malfunction or vehicle problem can be unsafe and costly
v. The importance of having malfunctions corrected quickly
vi. Federal Motor Carrier Safety Regulations (FMCSR) regarding vehicle inspections
vii. Procedures for performing Post trip inspections

5. Basic Control

In this section the student will learn how to safely preform the basic control maneuvers. These skills are the foundation that the student will build upon throughout the course. These skills and habits will be practiced throughout the course.

a. Objectives

By the end of this section, the student will know and understand the following:

i. How to start, warm up, and shut down the engine
ii. How to putt vehicle in motion and how to stop the vehicle
iii. Proper straight line backing technique
iv. Proper turning technique

6. Shifting

This section will teach students shifting patterns, and procedures so they can efficiently perform gear shifting maneuvers.

a. Objectives

At the end of this section, the student should be able to:

i. Shift up and down through the gears of a variety of types of conventional transmissions.
ii. Double clutch and time shifts, allowing for a smooth and fuel efficient performance
iii. Select proper gear for speed and highway conditions

Students should also know and understand:

i. Shifting procedures for transmissions
ii. The instruments and controls used to properly shift gears

iii. The shift patterns for the major types of conventional transmissions

7. Backing

In this section, students learn to execute on of the most difficult maneuvers in trucking, backing a tractor-trailer unit.

a. Objectives

At the conclusion of this section a student should know and understand:

b. The basic principles of steering a tractor-trailer
c. The basic rules for safe backing
d. The basic backing maneuvers including straight line and alley dock backing
e. The basic parking maneuvers including parallel parking

8. Coupling and Uncoupling

In this section the step-by-step procedures used to couple and uncouple the most standard tractor-trailer combination units.

a. Objectives

At the end of this section students should be able to safely and efficiently couple and uncouple a tractor-trailer and double trailers. The student should know the following:

i. The step-by-step procedures for proper coupling and uncoupling of tractor-trailer combinations, including: selecting a site, aligning the tractor, securing the trailer against movement, connecting and disconnecting air and electrical lines, setting air brake controls, backing the tractor onto the kingpin, and retracting and extending the landing gear
ii. The special procedures and consideration when coupling and uncoupling tractor and double trailer combinations
iii. How to perform mechanical and visual checks to make sure coupling is secure
iv. The hazards of careless or improper coupling and uncoupling and how to avoid them
v. That accidents caused by improper coupling and uncoupling are always preventable

9. Visual Search

The purpose of this section is to introduce the student to the skills needed to perform a safe and effective visual search while on the road.

a. Objectives

By the end of this section, student should know and understand the following:

i. The basics of seeing ahead and to the sides, including the importance of scanning at least 12 seconds ahead of the vehicle
ii. The two types of mirrors found on most tractors and the proper use of those mirrors
iii. The basics of seeing to the rear

10. Communication

The purpose of this section is to introduce the student to the basic principles of communication. This includes the appropriate processes and procedures a professional driver should follow when

communication to others. Also, the student should have the basic understanding of cues other drivers give when communicating their intentions.

a. **Objectives**

At the end of this section, the student should know and understand:

i. The basics of communicating intent, including the appropriate use of turn signals and means used to indicate the vehicle is slowing down
ii. The appropriate methods of communicating presence
iii. The subtle signs and cues given by other drivers when communicating their intentions

11. Speed Management

This section introduces the student to the importance of speed management when it comes to safely operating a tractor-trailer.

a. **Objectives**

At the conclusion of this section the student should know the following:

i. The science of speed and stopping distance
ii. The role surface conditions play in speed management
iii. The importance of adjusting speed for curves and grades
iv. The relationship between speed and visibility
v. The influence of speed on traffic management
vi. The how and why of obeying the speed limit

12. **Space Management**

The purpose of this section is to show the student the importance of space management when it comes to safely operating a tractor-trailer.

a. **Objectives**

At the conclusion of this section, the student should know the following:

i. The importance of space management
ii. The concept of maintaining an appropriate cushion of space
iii. Space management when executing a turn

13. Night Driving

In this section the students will be introduced to the unique challenges of night driving and the changes in general procedures (communication, speed and space management, etc.) a driver must make when driving under the cover of darkness.

a. **Objectives**

At the end of this section the student should know and understand the following:

i. The factors that affect night driving, including driver, roadway, and vehicle factors
ii. The procedures that a driver must follow to prepare for the challenges of night driving

14. Extreme Driving Conditions

This section will assist the student in learning how to safely operate under extreme conditions.

a. **Objectives**

In this section the student should understand the following:

i. How to operate in adverse conditions including snow, ice, and cold temperatures
ii. How to operate in hot weather
iii. The challenges of mountain driving

15. Hazard Perception

This section introduces the student to the nature of hazards and clues to recognizing these hazards.

a. Objectives

By the end of this section the student will be able to identify road conditions and other road users that are a potential safety threat. The student should know:

i. The visible characteristics of road conditions that present an hazard to safe operation
ii. The characteristics of other road users that make them a potential danger

16. Railroad Crossings

This section discusses the dangers associated with highway rail grade crossings, the engineering controls in place to make crossing safer, the regulations requiring drivers to slow down and/or stop at rail crossing, and the safest methods available for crossing railroad tracks.

a. Objectives

The student should understand the variety of dangers that exist at highway-rail crossings, and should understand how to get across various highway-rail crossing in the safest manner possible. The student should:

i. Understand the difference between active and passive warning systems
ii. Be able to identify the various signs and technologies in the use at rail crossing, and their purpose
iii. Know the regulations requiring vehicles to slow down and/or stop at rail crossings
iv. Know the best, safest methods to use to cross railroad tracks
v. Know what to do should problems arise at a railroad crossing

17. Emergency Maneuvers

This section deals with the importance of methods for carrying out evasive steering, emergency stops, off road recoveries, and proper responses to brake failures and blowouts.

a. Objectives

At the end of this section, the student should be able to:

i. Bring a truck to a stop in the shortest possible distance while maintaining control
ii. Safely perform a quick, evasive turn
iii. Safely make an evasive turn off of the roadway and back onto the roadway while maintaining control
iv. Maintain control and bring the vehicle to a stop in the event of a brake failure or tire blowout

The student should also understand:

v. A vehicle can be turned more quickly than stopped
vi. In an impending head-on collision, it is often safe to leave the roadway than to strike another vehicle
vii. Procedures for quick stops and turns

viii. Procedures for handling brake failure and blowouts

18. Skid Control and Recovery

This section introduces the student to conditions that cause skids, the major type of skids, and the procedures for recovering from skids.

a. Objectives

At the end of this section, students should be able to:

i. Maintain directional control while operating on a slippery surface
ii. Bring a tractor-trailer to a stop in the shortest possible distance while maintaining directional control when operating on a slippery surface
iii. Recover from skids caused by slippery conditions

The student should also understand:

iv. The role of skid control in preventing accidents
v. Skid dynamics, including friction, wheel load and force
vi. The causes of skidding
vii. The characteristics of a tractor jackknife, trailer jackknife, front wheel skid and all wheel skid
viii. Skid recovery procedures

19. Special Rigs

This sections purpose is to introduce the student to the characteristics of special rigs. To show the students a wide variety of tractors and trailers on the trucking industry and the need for specialized training before operating them.

a. Objectives

At the conclusion of this section, students should:

i. Be able to recognize the most frequently encountered special rigs
ii. Know the function, operating characteristics, physical dimensions, special features, and hazards of special rigs
iii. Know that special rigs require special qualifications and training

20. Preventive Maintenance

This section acquaints the student with the importance of preventive maintenance and servicing to prevent breakdowns and accidents.

a. Objectives

Students should understand the following:

i. Different kinds of preventive maintenance
ii. The drivers role in preventive maintenance
iii. Driver Vehicle Inspection Reports (DVIRs)

21. Diagnosing and Reporting Malfunctions

This section introduces the student to the importance of diagnosing and reporting vehicle malfunctions as well as the student's role in troubleshooting.

a. Objectives

At the conclusion of this section, the students should have an understanding of:

i. The diagnosis and reporting of vehicle malfunctions

ii. Troubleshooting
iii. Procedures for reporting vehicle malfunctions

22. Handling Cargo

In this section the student is introduced to the importance of properly handling cargo including proper and legal securement. Proper weight distribution and safe loading. This includes the Federal Motor Carrier Safety Regulations on this topic as well as safe operating practices.

a. Objectives

At the end of this section, the student should have the basic understanding of:

i. The importance of properly handling cargo
ii. The principle and methods of cargo securement
iii. The principle of weight distribution
iv. Safe loading responsibilities
v. Common tools used to load/unload a vehicle

23. Cargo Documentation

This section introduces the student to the basics of freight documentation.

a. Objectives

Concluding this section, students will have the basic understanding of:

i. The terms and definitions most commonly used in conjunction with cargo documentation
ii. The basic forms used to document cargo movement
iii. Pickup and delivery procedures

24. Hazardous Materials

This section provides the student an overview of hazardous material basics, and what responsibilities are associated with hazardous material transportation.

a. Objectives

At the conclusion of this section, the student should understand the following:

i. What is a hazardous Material
ii. When a hazmat endorsement is needed
iii. The different hazard classes, and divisions of hazardous material
iv. Precautions and special steps that must be taken when loading and unloading hazardous materials
v. Requirements pertaining to hazmat transportation

25. Hours of Service

This chapter teaches the student about hours of service regulations, including the operating within the legal limits and accurately completing a driver's record of duty status.

a. Objectives

At the end of this section, a student should:

i. Understand the hours of service requirements
ii. Be able to accurately and legally complete a record of duty status
iii. Understand the consequences for failure to comply

26. Trip Planning

This section introduces students to techniques used to plan the most effective and efficient trip plan possible. This includes consideration of all aspects of the trip from having proper paperwork on hand, to planning an efficient and legal route of travel.

a. Objectives

At the end of this section, the student should be able to create a safe, legal, and efficient trip plan including the following:

i. Up to date paperwork
ii. Selection of appropriate route based on consideration of several factors
iii. An accurate estimation of time
iv. An accurate estimation of fuel use and fuel stops
v. An accurate estimation of expenses

27. Accident Procedure

This section introduces students to accident scene procedures as well as fire prevention

a. Objectives

A student should know:

i. The basic responsibilities at the scene of an accident
ii. How to evaluate an accident to determine preventability
iii. How to prevent fires

28. Security of Cargo

This section is meant to bring awareness of the student to the many security issues facing truck drivers today. Security is paramount to the safety and success of every driver and that they are the first line of defense when it comes to the security of the truck, the load, and themselves.

a. Objectives

At the conclusion of this topic, students should know and understand the following:

i. Current terrorism concerns and their relationship to cargo security and theft
ii. Personal security do's and don'ts's
iii. Identifying suspicious activity and driver notification responsibilities at the dock and in transit

29. Personal Health

This section introduces the student to a variety of subjects that together make for an alert, health, and safe driver.

a. Objectives

At the conclusion of this topic, students should know and understand the following:

i. Personal health and driving
ii. The dangers of drivers fatigue
iii. The effects of alcohol on the human body and federal regulations surrounding alcohol consumption
iv. The effects of controlled substance on the human body and federal regulations surrounding the use of drugs
v. The importance of safety in the work environment
vi. The necessity of transportation security measures

30. **Public and Employer Relations**

This section is intended to make students aware of the driver's highly visible and important role in representing the trucking industry.

a. **Objectives**

Students should have a basic understanding of:

i. The image of the trucking industry
ii. Appropriate contact with the public
iii. Good customer relations
iv. Job requirements
v. How to apply for a job

31. **Basic Business Practices for Truck Drivers**

The purpose of this section is to introduce the student to the basic business concepts and ideas that are important for them to be successful in the transportation industry.

a. **Objectives**

At the end of this section, students should understand the following:

i. Cost determination and control
ii. Concepts of fuel management
iii. Methods of growing revenue

32. **CSA**

This section introduces the student to Compliance, Safety, and Accountability (CAS) and makes the student aware of how this compliance and enforcement program will affect their professional driving career.

a. **Objectives**

At conclusion, the student should have an understanding of:

i. What CSA is and how it affects the student's professional driving career
ii. The four major components of the CSA system
iii. CSA related data