United States Department of Transportation; Federal Highway Administration logo. National Highway Institute Logo


NHI

COURSE DESIGN PLAN

National Highway Institute | 2600 Park Tower Drive, Suite 500, Vienna, VA 703-235-0500 | 1-877-558-6873 | [www.nhi.fhwa.dot.gov](https://www.nhi.fhwa.dot.gov)

**Using the Course Design Plan template:**

Replace all text in **red italics** with the information indicated. Do **not** replace black text. It is boilerplate and represents NHI’s curriculum-wide approach.

Change text color to black.

Update the Table of Contents.

Reformat as needed.

Delete this instruction page before publishing.

Note: Examples in this document are only examples, not a predetermined or prescribed method. Creativity, ingenuity, and variety are welcome. All major headings (in black) should be addressed, but how you address them is up to you.

Insert Vendor Logo/Name

Course Title

Course Design Plan

Draft/Final

Date Submitted

Submitted by

Vendor Name

Vendor Address

Contract Number

Version Number

**Table of Contents**

[1 Introduction 1](#_Toc110866121)

[2 Course Information 2](#_Toc110866122)

[2.1 Title 2](#_Toc110866123)

[2.2 Course Type 2](#_Toc110866124)

[2.3 Statement of Need 2](#_Toc110866125)

[2.4 Description 2](#_Toc110866126)

[2.5 Course Level 2](#_Toc110866127)

[2.6 Target Audience 2](#_Toc110866128)

[2.7 Related Courses 2](#_Toc110866129)

[2.8 Estimated Course Time 2](#_Toc110866130)

[2.9 Course Goal 3](#_Toc110866131)

[2.10 Learning Outcomes 3](#_Toc110866132)

[3 Course Design 4](#_Toc110866133)

[3.1 Structure 4](#_Toc110866134)

[3.2 Learning Taxonomy 4](#_Toc110866135)

[3.3 Learner Progression 5](#_Toc110866136)

[3.3.1 Sequencing Description 5](#_Toc110866137)

[3.3.2 Progression Flowchart 5](#_Toc110866138)

[3.4 Course Logistics/Navigation 5](#_Toc110866139)

[3.5 Course Look and Feel 6](#_Toc110866140)

[3.5.1 Environment 6](#_Toc110866141)

[3.5.2 Theme 6](#_Toc110866142)

[3.6 Source Content 6](#_Toc110866143)

[3.6.1 Existing Resources 6](#_Toc110866144)

[3.6.2 Potential Resources 6](#_Toc110866145)

[3.7 Instructional Strategies 6](#_Toc110866146)

[3.8 Assessment Strategy 6](#_Toc110866147)

[3.8.1 Techniques 6](#_Toc110866148)

[3.8.2 Format 7](#_Toc110866149)

[3.8.3 Alignment 7](#_Toc110866150)

[3.9 Accessibility Conformance Strategy 7](#_Toc110866151)

[3.9.1 Section 508 strategy 7](#_Toc110866152)

[3.9.2 Section 504 strategy 7](#_Toc110866153)

[4 Instructional Plans 8](#_Toc110866154)

[4.1 Progression 8](#_Toc110866155)

[4.2 Communication Plans 8](#_Toc110866156)

[5 Course Development 9](#_Toc110866157)

[5.1 Development Tool 9](#_Toc110866158)

[5.2 Development Process 9](#_Toc110866159)

[5.3 Content Sources 9](#_Toc110866160)

[5.4 Prototype 9](#_Toc110866161)

[5.5 Courseware 9](#_Toc110866162)

[6 Testing and Implementation 10](#_Toc110866163)

[7 Course Evaluation 11](#_Toc110866164)

[8 Appendix 12](#_Toc110866165)

[8.1 Appendix A: Acronym List 12](#_Toc110866166)

[8.2 Appendix B: Levels of Interactivity 13](#_Toc110866167)

[8.3 Appendix C: Course Schedule/Milestones 14](#_Toc110866168)

[8.4 Appendix D: Design and Development Roles and Responsibilities 15](#_Toc110866169)

[8.5 Appendix E: Format Examples 17](#_Toc110866170)

# Introduction

The purpose of this Course Design Plan is to provide a detailed description of course design elements and processes for NHI *Course Number/Title.* The Course Design Plan serves as a blueprint for development. It includes important course information, design elements, and style choices. The content, curriculum, and structure are identified, as well as testing and evaluation methods.

# Course Information

## Title

State the proposed course title.

## Course Type

Instructor-led Training (ILT)

Web-based Training (WBT)

Web-conference Training (WCT)

Blended approach (specify components)

## Statement of Need

Describe why the course is needed and how the need was determined. Limit the statement to two to four lines. Describe the need from a learner point of view.

## Description

Provide a high-level description of the course. The description should be approximately two paragraphs in length and should describe in depth the importance of the course and the details of course exercises. Describe the specific content areas participants will explore, as well as application through engaging exercises and activities. Set the scene and generate enthusiasm for what this course will become! Include the purpose and scope of the course.

## Course Level

Identify the difficulty level of the course (beginner, intermediate, accomplished).

## Target Audience

Describe the primary target audience and any secondary audiences. Be sure to cite the expected prerequisite knowledge level of the target audience. Do not use job titles to describe the audience; instead, focus on the tasks and issues the audience works with, and the skills they must acquire, that make this particular course necessary for them. For an ILT course, state the ideal number of participants. NHI typically suggests a maximum of 30 participants for ILT.

## Related Courses

List any required prerequisite courses.

List any courses for which this course is a required prerequisite.

List any other related course offered by NHI.

## Estimated Course Time

Specify the estimated number of seat hours.

## Course Goal

State the course goal. The goal should address, in a broad fashion, what the learner will be able to do differently after completing the course.

## Learning Outcomes

Identify terminal learning outcomes (TLOs) at the module level and enabling learning outcomes (ELOs) at the lesson level (for a course with modules and lessons), TLOs at the module level and ELOs at the topic level (for a course with only modules and no lessons), or TLOs at the lesson level and ELOs at the topic level (for a course with only lessons and no modules). Demonstrate traceability. Below is an example.

1. *Terminal outcome*
   1. *Enabling outcome*
   2. *Enabling outcome*
   3. *Enabling outcome*
2. *Terminal outcome* 
   1. *Enabling outcome*
   2. *Enabling outcome*
   3. *Enabling outcome*

# Course Design

## Structure

Specify the course structure. NHI Web-based Training (WBT) courses may follow either a Module – Lesson – Topic structure, or a Module – Topic structure. NHI Instructor-led training (ILT) and Web-conference Training (WCT) courses may follow either a Module – Lesson – Topic structure, or a Lesson – Topic structure.

## Learning Taxonomy

Show the relationship between the course components (modules/lessons/topics) and the course learning outcomes. Below are two examples:

**TLO1**

**Module 1**

**Lesson 1 (ELO)**

**Lesson 2 (ELO)**

**Assessment 1**

**TLO2**

**Module 2**

**Lesson 1 (ELO)**

**Lesson 2 (ELO)**

**Assessment 2**

**TLO3**

**Module 3**

**Lesson 1 (ELO)**

**Lesson 2 (ELO)**

**Assessment 3**

Figure : Learning Taxonomy (Modules and Lessons)

Figure : Learning Taxonomy (Outcomes)

## Learner Progression

### Sequencing Description

Describe how learners will progress through the course. Include any sequencing options, required or recommended progression sequencing, and any pre-test or test-out options.

### Progression Flowchart

Provide a visual representation of how learners will progress through the course. Be sure to include all modules, lessons, topics, as well as prerequisites, pre-tests, end-of-course assessments, test-out options, etc. For WBTs, the Sharable Content Object (SCO) is at the modular level. For ILTs and WCTs, the smallest unit may be at the lesson level if preferred. Below is an example.

Figure : Progression Flowchart Example

## Course Logistics/Navigation

Discuss how you will address pre-content information that helps guide the learner to successful completion of the course.

Examples:

* Structure and flow (set expectations for learner)
* Course completion requirements
* Specific activities or tools they might use
* Device requirements (information about mobile apps, unsupported browsers, etc.)
* Tips/techniques for success (e.g., setting aside time to complete a self-paced course gradually over a time period; timeframe for completing pre-work, etc.)
* Learner introductions in synchronous courses (e.g., a discussion thread in a virtual classroom)
* Instructor introductions
* Accessing certificate of completion

## Course Look and Feel

### Environment

Describe the context and setting in which learning will take place during the course, and the context and setting in which the skills and knowledge gained in the course will be applied on the job. Be sure to include things such as the physical environment, materials, equipment, etc. Give consideration to how to best design the learning environment to address the job application environment. Include information about what features the training will include, such as job aids.

### Theme

Describe your vision of the learner experience. Describe best practices that will be used to enhance consistency, flow, functionality and aesthetic appeal. For electronic (or presentation) materials, include a description of the design theme, color scheme, screen layouts, interface elements (and their function) or any other information that might help communicate the look and feel of the course.

## Source Content

### Existing Resources

List content that is web-ready or that can be modified easily, such as Microsoft® PowerPoint® presentations. If you have images you want to use, are they digital files and optimized for the web? Do you have permission to distribute them online?

### Potential Resources

List the content you feel may lend itself to a new method of delivery, such as a learning object or video. Or list where you might direct your search. Will you contact a media development team or an instructor who has incorporated content you are interested in using? Start the brainstorming here!

## Instructional Strategies

In this section identify the specific instructional strategies that will be used in the course. Explain why the strategies were chosen and how they support adult learning principles. NHI strongly encourages developer creativity in identifying these strategies. Identify the ideal level of interactivity (see Appendix B) and how this supports the identified learning outcomes. NHI supports a learner-centric approach in development.

Review Appendix E for an example on formatting the information in a table.

## Assessment Strategy

State how you plan to assess learner achievement of the terminal and enabling learning outcomes and make the link very clear between the two.

### Techniques

Identify the assessment techniques that will be used (i.e., embedded practice activities, knowledge checks, case studies, research assignments, information searches, technical video/situation critiques, scenarios, end-of-course assessment, etc.) at both the module/lesson level and course level. Include the requirements for each technique, the associated design implications, and an explanation of why the technique is being used (i.e., how it enhances learning and/or meets specific requirements). NHI encourages the use of scenario-based assessment questions, even for multiple-choice questions. In other words, rather than simple knowledge recall questions, some questions should be designed to require thoughtful consideration of an application scenario and knowledge synthesis in selecting the correct response.

Review Appendix E for an example on formatting the information in a table.

### Format

Identify the format in which each assessment technique will be employed. Consider the full range of different types of assessment techniques, including quizzes, assignments, tests, exams, discussion boards, homework, etc. Address any rubrics that will be needed to grade assessments.

### Alignment

Confirm traceability between the terminal learning outcomes and the end-of-course assessment. Provide a sample of representative assessment questions, and identify the TLO and ELO each one supports. Additionally, assessments should provide remediation feedback that directs the learner back to the content in the course or explains why the answer was incorrect or correct.

|  |  |  |
| --- | --- | --- |
| *Terminal Learning Outcome 1* | * Enabling Learning Outcome 1 * Enabling Learning Outcome 2 * Enabling Learning Outcome 3 | * Question and Answer * Question and Answer * Question and Answer |
| *Terminal Learning Outcome 2* | * Enabling Learning Outcome 1 * Enabling Learning Outcome 2 | * Question and Answer * Question and Answer |

## Accessibility Conformance Strategy

### Section 508 strategy

All information and communication technology (ICT) deliverables must be 508 conformant. Discuss how you will achieve conformance. Note that all ICT deliverables will be evaluated against FHWA’s Standardized Conformance Criteria.

Refer to the FHWA 508 website for more information:

[Section 508 | Federal Highway Administration (dot.gov)](https://www.fhwa.dot.gov/508/)

### Section 504 strategy

Section 504 requires reasonable accommodation to enable participants with disabilities to participate in training events. List materials that may require 504 accommodations and describe how 504 conformance will be achieved.

# Instructional Plans

## Progression

Provide a detailed description of the instructional plan for each module or lesson. The instructional plan should follow the same sequence of the course. Include the following elements at both the module and lesson levels:

* Module and lesson number and title
* Estimated module or lesson seat time and embedded time for engagement activities
* Description of the content
* Overview of module or lesson topics
* Learning outcomes at the modular or lesson and topic level
* Module or lesson interactivity level (see Appendix C)
* Opener (include an attention grabber or “hook” that addresses “what’s in it for me?”)
* Instructional strategies (provide concrete examples of techniques) (Refer to the “Learners First: Creating Engaging and Interactive Learning Experiences” handbook available on the NHI website.)
* Assessment remediation: (Do not provide only a right/wrong result--provide an explanation and refer them back to the location of the content within the course.)
* Government-Furnished Information (GFI) and Resources (include specific location, such as page number)

## Communication Plans

Include a plan for when and how we will communicate with the learner, including a purpose for those communications. Consider including a “Course Communication Strategy,” that outlines clear expectations regarding learner communications.

# Course Development

## Development Tool

Specify the authoring tool(s) and any other resources or apps that will be used to develop the course. Address any special requirements and/or implications.

## Development Process

List the steps in the course development process. Be sure to consult the project task order.

## Content Sources

Recap what resources you intend to use to derive course content.

## Prototype

Identify which module and/or lesson will serve as the prototype; alternatively, you may provide a general sample that includes a variety of instructional strategies. (It does not necessarily have to feature actual course content.) The selection should showcase exemplary work and should feature a fully functional GUI that is 508 conformant and should use professional audio with a conversational tone.

## Courseware

Identify the order in which courseware will be developed. For example:

* Module/Lesson #
* Module/Lesson #
* Module/Lesson #
* Module/Lesson #

# Testing and Implementation

Submit a detailed Quality Control plan that describes how you will ensure the quality of training products, including technical accuracy, visual appeal, appropriate use of language and written content, 508 conformance, and functionality.

*Vendor name* will perform quality assurance checks on all deliverables prior to submittal. Deliverables will be checked for functionality in the NHI environment, adherence to the NHI style and standards guide, technical accuracy, quality, and Section 508 conformance. After validating the deliverables, vendor name will submit the source and published files via large file transfer, or another agreed upon method to the NHI Contracting Officer Representative (COR) who will distribute them to the NHI Instruction Systems Designer (ISD) and Federal Highway Administration (FHWA) project team lead.

The NHI ISD and FHWA project team will review each deliverable and submit comments to the COR. The COR will review the comments and distribute them to vendor name.

After all elements of the course have been developed, reviewed, and accepted by the COR, vendor name will conduct a pilot of the course. For Web-based Training (WBT), final testing prior to launching the course on the website will be a soft launch of the course conducted by NHI. Actual seat time and corresponding Continuing Education Units (CEUs) will be determined by the pilot and soft launch tests.

# Course Evaluation

Confirm the type of evaluation data (Level 1, 2, 3, 4) that will be collected and the method of collection.

Note that NHI routinely collects evaluation data on all courseware at both Level 1 (reaction) and Level 2 (learning) of the Kirkpatrick Module of Training Evaluation. Level 1 evaluation data is usually collected through the NHI standardized evaluation form. Level 2 evaluation data is provided by learners’ responses to questions in the end-of-course assessment developed by the vendor.

In addition, the NHI COR or FHWA project team lead may request Level 3 and/or Level 4 evaluation data. If a Level 3 or Level 4 evaluation is anticipated, state it here and describe the process and rationale.

# Appendix

## Appendix A: Acronym List

The table below lists acronyms in this document*.*

Include and alphabetize any acronyms that were used in the document. In the definition section, indicate the correct use of case.

| **Acronym** | **Definition** |
| --- | --- |
| CEU | Continuing Education Unit |
| COR | Contracting Officer Representative |
| ELO | Enabling Learning Outcome (or Lesson Learning Outcome) |
| FHWA | Federal Highway Administration |
| GFI | Government-furnished information |
| ILT | Instructor-led Training |
| ISD | Instructional Systems Designer |
| NHI | National Highway Institute |
| SME | Subject Matter Expert |
| TLO | Terminal Learning Outcome (or Course Learning Outcome) |
| WCT | Web-conference Training |
| WBT | Web-based Training |

## Appendix B: Levels of Interactivity

| **Level of Interactivity** | **Description** |
| --- | --- |
| Level I – Passive | The learner acts solely as a receiver of information. The learner progresses linearly through the course, reading text from the screen, viewing video, or listening to audio. |
| Level II – Limited Interaction | The learner makes simple responses to instructional cues. The responses may include answering multiple choice or true/false questions.  Example: A learner is presented with a question and asked to type a reply in a text field, in order to stimulate thinking around the upcoming topic. |
| Level III – Complex Participation | The learner makes a variety of responses using varied techniques in response to instructional cues.  Example: After completing a lesson, a learner is presented with a scenario to review. The learner is asked to recall information from the lesson and also research additional information on a website prior to selecting an answer on screen—requiring knowledge synthesis. |

## Appendix C: Course Schedule/Milestones

Provide a complete course schedule (including all course deliverables, due dates, review periods, progress meetings, etc.).

## Appendix D: Design and Development Roles and Responsibilities

The roles and responsibilities of the team members that are integral to the development process are outlined in the following table.

| **Roles** | **Responsibilities** |
| --- | --- |
| NHI ISD | * Provide guidance to Vendor on course development, including adherence to NHI standards for development. * Interface with project team lead, SMEs, and Vendor as necessary. * Review and comment on deliverables. * Upload final published documents to FHWA server. |
| Project Sponsor | * Provide project resources (funding, project team members). * Provide high-level project oversight. |
| COR | * Coordinate all project-related activities. * Facilitate communications among project team. * Maintain project schedule. * Determine acceptance of deliverables. |
| FHWA Technical Team Lead | * Serve as the lead FHWA SME. * Distribute deliverables to project team members for review. * Collect, review, and consolidate comments from all project team members. * Review draft and final courseware and provide consolidated team comments. * Ensure integrity and verify validity of content. * Provide official response to questions and deliverables. |
| FHWA Technical Team Member | * Serve as an FHWA SME. * Review deliverables and provide comments to project team lead. * Review draft and final courseware and provide comments to project team lead. |
| Vendor | * Interact with SME to guarantee content validity. * Create draft and final deliverables that adhere to the NHI Style and Standards Guide (including 508 conformance). * Produce draft versions of courseware. * Conduct thorough quality assurance testing on all deliverable, following the vendor’s Quality Control plan, from inside the NHI test environment. * Create final version of the courseware that incorporates corrections provided by the COR. * Provide courseware files to NHI for publication to the online training server. * Provide all source, published, and ancillary files to NHI. |

## Appendix E: Format Examples

The table below is one way Instructional Strategies information can be provided.

| *Instructional Strategy* | *Why the Strategy was Chosen* | *Level of Interactivity* | *LO the Strategy Supports* |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

The table below is one way Assessment Strategies information can be provided.

| *Module or Lesson* | *Technique* | *Why the Technique was Chosen* | *Format* |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |