

LEARNING MANAGEMENT SYSTEM (LMS)

GUIDANCE FOR DEVELOPING ONLINE TRAINING

This guidance is for teams developing online courseware to be uploaded to the HHS Learning Portal (LMS). This document outlines the process for uploading and managing online courseware in the LMS.

For more detailed guidance, and to view recommended resources, see the [Content Administrator Manual](#).

DEVELOPING COURSE CONTENT FOR THE LMS

The NIH LMS Support Team does not provide training on or services for developing online courseware. Prior to being loaded to the LMS, the content may have been developed 'in-house' or by an outside vendor.

Online courseware standards, LMS interaction, audience, roll-out plan and expected deliverables should be considered BEFORE any work begins. Paying attention to these key factors before your content is loaded to the LMS will help ensure a successful deployment. It will also save considerable time and money by minimizing the need for remediation later.

SCORM / AICC STANDARDS

Standards from the Aviation Industry Computer Based Training (CBT) Committee, a.k.a. AICC, and the Shareable Content Object Reference Model, a.k.a. SCORM, are designed to pass information back and forth between your course and the LMS.

The information is passed through variables, and allows such things as bookmarking, tracking of progress, test scoring, and ensuring a learner completes the entire course before it is marked as successful. SCORM 1.2 is the newer, preferred, and most utilized, standard; however, both AICC and SCORM courses will work with the Saba LMS.

If you are contracting course development, your statement of work (SOW) and contract should specify that the end product must be AICC or SCORM 1.2 compliant and work with HHS' implementation of the Saba LMS.

NOTE: The HHS Learning Portal (LMS) does not support content delivery on mobile devices.

IMPORTANT: Content can be loaded to the LMS without being AICC or SCORM compliant, such as PowerPoint files, PDF documents, etc. However, since there is no communication being passed to the LMS, this content will mark complete as soon as a learner opens it, regardless of whether learners read the content or not. Be sure to determine tracking needs for the course before determining how it will be developed.

SECTION 508 ACCESSIBILITY

All electronic content made available by government agencies must be Section 508 compliant. There are no exceptions! This applies to materials intended for internal and external use, regardless of the audience size. Failing to comply with Section 508 accessibility standards can derail your training initiative and make your organization susceptible to legal action.

Section 508 is part of the Rehabilitation Act of 1973 enacted to overcome barriers in information technology for people with disabilities. It is mandatory for all Federal government agencies. Not only is it mandatory, but it is the right thing to do in order to avoid excluding people with disabilities from accessing the same information to which everyone else has access.

If you develop materials in-house, you assume responsibility for ensuring Section 508 compliance. If you contract for development, make sure you include Section 508 requirements in your SOW and contract, and require your vendor to complete the HHS Product Accessibility Template (PAT) thoroughly.

ONLINE COURSE DEVELOPMENT PROCESS

Although this is not a lesson to teach all the details of online course development, there are some highlights and deliverables you should be aware of. If you are contracting development, make sure these milestones and deliverables are in your SOW and contract.

At a minimum, each of the major milestones below should be sign-off approval points for the project:

- **Storyboards:** At this point in development, the content outline and course flow should be documented. Storyboards show a screen-by-screen layout of the content, graphics, links, and navigation to be developed into each page of the course. This is the time to ensure the content is correct, the navigation is logical, and you like the overall color and navigation scheme for the course.
- **Beta:** This is the first time you see a programmed product. It is still a draft at this point, but you should make sure it will load into the LMS (using the Staging environment) with all functions (launch, bookmarking, completion, exit) working correctly. This is also a good time to have an initial Section 508 compliance evaluation done.
- **Pilot:** At this stage, your course should be very close to complete. All major course elements should be present. The pilot course should be loaded into the LMS Production environment, but only made available to a small testing group. Your pilot testers should be representative of the target population of learners, and you should include users with disabilities, PC users, and Mac users. Your testers should complete the pilot course in its entirety and provide you with feedback.

- **Final product:** All revisions should be complete and any problems uncovered during pilot testing should be resolved. Final deliverables include:
 - *Source files* – Unpackaged course files in the authoring tool format and all original graphics or other resources used in the course. You will need these if the course requires revisions later.
 - *SCORM package* – This is a ZIP file containing all course resources that is packaged and exported from the authoring software. It should be exported from the authoring tool as a SCORM 1.2 or AICC package.

NOTE: Be sure the imsmanifest.xml file is always at the root of the ZIP SCORM package. This means that the imsmanifest.xml file cannot be inside a folder within the ZIP package.

IMPORTANT: Make sure you always obtain the source files and SCORM package from any vendor. These are government property if the project was developed with government funds. You need the SCORM package to load into the LMS, and you need the source files if you ever need to make any course revisions.

COURSE AUTHORIZING TOOLS

Any course authoring tool may be used to develop online content for the LMS as long as the output is Section 508 compliant and AICC or SCORM 1.2 compliant. Ideal tools allow the content to be saved as HTML files, as well. This supports the manipulation of course files for Section 508 remediation.

Common course authoring tools include:

- [Articulate Storyline 360](#) / [Articulate Rise 360](#)
- [Adobe Captivate](#)
- [iSpring](#)

GETTING YOUR COURSE INTO THE LMS

Once you have content ready to load into the LMS, there are several steps you must follow to make it available for learners to access.

1) IDENTIFY AN LMS ADMINISTRATOR

You must identify an LMS Administrator to assist in loading the content in the LMS. See the [List of IC LMS Administrators](#) to find yours.

The *LMS Content Administrator* role is needed to upload online content for courses in the LMS.

The *LMS Learning Administrator* role is needed to make that content available to learners by attaching it to a course and offering.

NOTE: If your organization does not have an LMS Learning Administrator and/or an LMS Content Administrator, [free LMS training](#) is available for these roles.

2) UPLOAD CONTENT IN THE LMS STAGING ENVIRONMENT

The LMS Content Administrator uses the [Attaching Online Course Content Training Manual](#) to create a course, an Online Training offering, and upload the online content in the LMS Staging environment.

3) TEST THE ONLINE CONTENT

Conduct a thorough review of the content, including course navigation, spelling, grammar, URL links, knowledge checks, tests, and ensuring bookmarking functions all work. This includes verifying that the content marks complete once the completion criteria are met.

The content must be tested in all browsers and operating systems in which the content might be accessed within your organization.

IMPORTANT: If errors are encountered during testing, these errors should be provided to the course developer for correction. Or, contact your authoring tool support to resolve content related issues.

4) SUBMIT THE ONLINE CONTENT SUBMISSION CHECKLIST

Complete, sign, and submit the [Online Content Submission Checklist](#) to the LMS Team. The following must be included:

- Screenshot showing the course offering marks "Successful" with Microsoft Edge.
- Screenshot showing the course offering marks "Successful" with Google Chrome.
- Answer keys for any test, quiz, or knowledge check.

5) UPLOAD CONTENT TO THE LMS PRODUCTION ENVIRONMENT

Following approval from the LMS Team, the LMS Content Administrator can create a course, an Online Training offering, and upload the online content in the LMS Production environment to make the content available for learners.