Teaching Structured Authoring in a DITA-based Environment

Created by members of the ACM SIGDOC Committee on Structured Authoring and Content Management

SIGDOC

Overview

The [ACM SIGDOC Structured Authoring Committee](#) is working to develop a repository of free curriculum resources for instructors of technical communication. These resources focus on structured content and the management of structured content. This guide focuses on the first curricular unit developed by the committee: *Structured Authoring in a DITA-based Environment*.

If you are interested in teaching a dedicated class or class module on structured authoring, this guide is for you! No prior experience with structured authoring is required. The guide offers a learning path through the different resources in the unit, offering suggested readings and activities along the way.

If you are new to structured authoring and DITA, you will find both conceptual resources and introductory tutorials for using XML editors to create DITA maps and topics. Students can create a collection of topics and generate pdf and HTML output using either the built-in transformation scenarios available in the editors or a DITA Open Toolkit GitHub Actions template repository.

If you are looking to teach more advanced processing of DITA topics, you will find several resources on content reuse and managing reusable text resources, as well as on publishing DITA content using the Open Toolkit.

Curriculum Resources - Introductory

Conceptual Resources	Tutorials
- What is structured content? - What is semantic markup? - What is information typing? - What are DITA topics? - How does DITA support content reuse? - What is a Component Content Management System (CCMS)?	XMLmind Editor - XMLmind Editor Quickstart – How do I create, assemble, and build my first DITA publication? Oxygen XML Editor - Oxygen Editor Quickstart -- Configuring layout preferences - Oxygen Editor Quickstart – How do I create, assemble, and build my first DITA publication? GitHub - How can I publish HTML output using GitHub Pages? (coming soon)

Access different file versions of these resources on the Curriculum Resources page.

SIGDOC

Curriculum Resources - Advanced

Conceptual Resources	Tutorials
- How does OASIS DITA support content reuse? - What is GitHub and how do I get started with it?	- How do I publish DITA content using the DITA Open Toolkit? - How do I manage reusable text resources in DITA using direct references? - How do I manage reusable text resources in DITA using indirect, key-based references? - How do I prototype single source authoring using DITA conditions? (coming soon)

Access different file versions of these resources on the Curriculum Resources page.

SIGDOC

Teaching the Curricular Unit

Conceptual Resources and Tutorials

The resources are available in .gDoc, .docx, and .pdf formats. You are welcome to download and modify the resources in any way that helps you meet your learning goals for students.

Whether teaching a dedicated class or class module, we recommend pairing the conceptual resources with additional readings and videos. We suggest pairings on the next few slides.

If students are new to the concepts of topic-based, structured authoring and content management, we recommend beginning the curricular unit with readings on the discipline of content and the critical role of structured content in helping organizations achieve digital content transformation goals. These bigger-picture readings provide important context for understanding key drivers behind adoption of structured authoring workflows and content standards such as DITA.

After students have opportunities to read and discuss these bigger-picture readings, we recommend working through the curricular unit, assigning additional readings and resources along the way.

Teaching the Curricular Unit

Conceptual Resources - Suggested Readings, Videos, & Resources

Readings - Big Picture

- "Beyond Management: Understanding the Many Forces Shaping Content Today" in *Teaching Content Management in TPC* (2020)
- "Current State of Component Content Management: An Integrative Literature Review" in *IEEE Transactions on Professional Communication* (2015)
- "Emergence of the Discipline of Content" (Chapter 2) in *Technical Communication and the Discipline of Content* (2025)

Videos & Resources - Big Picture

- Center for Information-Development Management (CIDM), the Data Conversion Laboratory (DCL), and the RWS Group (2022, Aug. 25). Digital transformation survey 2022: Results, analysis, and projections [Webinar].

Look here for full citations and additional reading suggestions (some of these are more geared toward instructors than students).

SIGDOC

Teaching the Curricular Unit

Conceptual Resources - Suggested Readings, Videos, & Resources

Readings - Definitions of Content

- "Operationalizing Content Creation" (Chapter 4) in *Content Operations from Start to Scale* (2024)
- "When Writing Becomes Content" in *College Composition and Communication* (2015)
- *Intelligent Content: A Primer* (2015)

Videos & Resources - Structured Content

- What is Structured Content? by Heretto

Curricular Unit Resources

- What is structured content?
- What is semantic markup?

Access different file versions of these resources on the Curriculum Resources page.

SIGDOC

Look here for full citations and additional reading suggestions (some of these are more geared toward instructors than students).

Teaching the Curricular Unit

Conceptual Resources - Suggested Readings, Videos, & Resources

Readings - Structured Authoring & DITA

- "Getting Started with Topic-Based Writing"
- "The Essential Guide to Topic-Based Authoring" (2024)
- "Changing Technical Communication Roles and Activities" (Chapter 3 - assign the section, "Structured Authoring") in *Technical Communication and the Discipline of Content* (2025)
- Structured Authoring and XML (white paper) (2017)
- *DITA Best Practices: A Roadmap for Writing, Editing, and Architecting in DITA* (2011)

Videos & Resources - DITA

- What is DITA XML? by Heretto
- What is DITA? hosted by EasyDITA

Curricular Unit Resources

- What is information typing?
- What are DITA topics?
- How does DITA support content reuse?

Access different file versions of these resources on the Curriculum Resources page.

Look here for full citations and additional reading suggestions (some of these are more geared toward instructors than students).

SIGDOC

Teaching the Curricular Unit

Introducing Structured Authoring and DITA (Conceptual Resources)

When introducing students to structured authoring and DITA, we recommend assigning activities that ask students to explore possibilities for typing and structuring content and for combining content modules and assets in different ways. A first activity might ask students to apply semantic styles in Microsoft Word, which allows students to see how content can be separated from presentation.

These activities prepare students for larger projects that ask them to create, assemble, and publish a collection of DITA topics.

Suggested Activities
- Using Semantic Styles in Word Processing (developed by Andersen & Evia)
- Analyzing Topic-Based Documentation (developed by Andersen & Evia)
- Identifying Content Types and Relationships (developed by Andersen & Evia)
- More coming soon…

Teaching the Curricular Unit

Suggested Projects

After students have read the introductory conceptual resources in the curricular unit and completed activities that give them practicing applying core concepts of structured authoring, they should be ready to begin a larger project that asks them to create, assemble, and publish a collection of DITA topics.

Project Ideas
- Download the sample DITA sources for our tutorials from GitHub and modify them in your DITA editor.
- Download one of the sample doc sets referenced on our web site and modify it in your DITA editor.
- Document a product or product suite that has yet to be documented or that has existing, unstructured documentation. Campus student disability centers and educational technology departments often have promising projects.
- Create DITA topics based on something you collect, enjoy making, or are a fan of (e.g., a collection of video games; dessert recipes; a Harry Potter series - entries for book reviews, movie reviews, characters, etc.).

Platforms for Creating, Assembling, and Building a DITA Publication
The curricular unit includes quickstart tutorials for two different platforms available as free downloads for students to use for their project: XMLmind Editor and Oxygen XML Editor. You will need to choose which platform you want students to use based on learning goals for the project and best fit for your teaching context.

SIGDOC

Teaching the Curricular Unit

Platform Options

Multiple platforms are available for creating and managing DITA XML content. Most of these require licenses at a cost. The ACM SIGDOC Structured Authoring Committee recommends using either XMLmind Editor or Oxygen XML Editor, which are available for free or for an academic discount.

- XMLmind Editor - free download of Personal Edition. Main limitation is lack of capability to generate output.
- Oxygen XML Editor - academic discount or free 30-day trial. Special 120-day free trial also available. Offers features that support beginners, professionals, and experts. See the Configuring Oxygen Editor guide for instructions on how to configure Oxygen to make its beginner-oriented features more visible than other features (guide is available on the Curriculum Resources page).

You can find quickstart tutorials for each platform under **XML DITA resources** on the Curriculum Resources page. The quickstart tutorials are meant to introduce students to the platforms and guide them through the process of creating a small collection of topics and a DITA map using example content for an example scenario. Students should then be familiar enough with the platform to create their own XML DITA content.

NOTE: Members of the Structured Authoring Committee will be offering periodic demonstrations of the Heretto Component Management System (CCMS) during the academic year via the SIGDOC workshops series. Look for upcoming workshops should you want students to learn more about how the cloud-based CCMS is used for authoring, reviewing, and managing structured content.

Teaching the Curricular Unit

If using XMLmind Editor

XMLmind Software develops and distributes a free, Personal Edition of its XMLmind Editor. Students will need to download and install the editor. Find the quickstart tutorial on the [Curriculum Resources](#) page.

Publishing XMLmind Projects
Although this Personal Edition lacks the capability to generate output and to import/export other file formats, it supports authoring and validating the DITA maps and topics. To generate pdf and website deliverables from their collection of DITA topics, students have two options.

- They can install and use the DITA Open Toolkit (OT) - a relatively advanced task that many instructors and students will not feel equipped to do. A tutorial for publishing content using the DITA-OT is available on the [Curriculum Resources](#) page.

- They can use the [DITA Open Toolkit GitHub Actions template repository](#) created by Carlos Evia. This activity requires students to create a GitHub repository and upload their DITA files (created in XMLmind) to the repository. Students need to follow the instructions in the README. The template (a workflow) invokes the DITA-OT automatically in a process of continuous integration and development to build and serve pdf and website deliverables.

Teaching the Curricular Unit

If using Oxygen XML Editor

Syncro Soft offers an academic discount or a 30-day free trial of Oxygen XML Editor. If you are interested in a 120-day free trial for you and your students, please contact Carlos Evia, carlos.evia@vt.edu, who coordinates extended licenses with Syncro Soft on behalf of the committee. Students will need to download and install Oxygen XML Editor to use it for their projects. Synchro Soft does not offer a browser-based version of the editor.

Publishing Oxygen XML Editor Projects
Students can build DITA publications by choosing a Configure Transformation Scenario in Oxygen XML Editor. Based on default DITA-OT configurations, Oxygen XML Editor can generate PDF, HTML5, or WebHelp deliverables.

Because Oxygen XML Editor is an editor and not a publishing processor, it cannot push content assets to an actual website. If students want to see what their project would look like in website form, we recommend they use GitHub Pages, a static site hosting service that takes HTML, CSS, and JavaScript files posted to a GitHub repository, runs them through a build process, and publishes a website. Students will need to create a GitHub repository and upload the files generated from the HTML5 Configure Transformation Scenario (the HTML and CSS files, as well as any image files). Refer to the tutorial, *How can I publish HTML output using GitHub Pages?* (coming soon) available on the Curriculum Resources page.

SIGDOC

Learning Paths

This guide offers a learning path for teaching the curricular unit - Structured Authoring in a DITA-based Environment - to students who are new to structured authoring. The unit can be taught over the course of a few weeks or over the course of a term.

If you have the time and want to tackle content reuse and more advanced structured authoring tasks, the ACM SIGDOC Committee on Structured Authoring has created the following resources, available on the Curriculum Resources page:

- How does OASIS DITA support content reuse?
- How do I manage reusable text resources in DITA using direct references?
- How do I manage reusable text resources in DITA using indirect, key-based references?
- How do I prototype single source authoring using DITA conditions? (coming soon)

All resources created by the committee are openly licensed via Creative Commons. You are welcome to distribute and modify them in any way that suits your teaching needs. If you have suggestions for how to improve any of the resources, please send them! You can provide feedback through the Feedback buttons next to each resource.

SIGDOC

Thank You!

Refer to the [Committee on Structured Authoring and Content Management](#) page of the ACM SIGDOC website to learn more about committee activities, available resources, and volunteer opportunities.

Refer to the [ACM SIGDOC Structured Authoring Committee Resources](#) website for a directory of potential guest speakers and list of sample DITA documentation sets, in addition to the curriculum resources.

SIGDOC