newtFire {dh}
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DIGIT 400: Digital Project Design

Fall 2020 Syllabus (Schedule) Classes meet M W F 10:10 - 11am over Zoom and in Kochel 77. Zoom attendance is required for all students. The classroom is optional, but even in the classroom you will be connecting to Zoom to team up with your classmates. We may need to divide into groups to rotate attendance in the physical classroom. Group assignments will be made in Canvas. For in-class meetings, we must all wear masks and maintain a safe social distance. Remember: *Your mask protects me, my mask protects you*.

Read the Course Description

This contains a detailed explanation of course policies and the basis for grades.

Jump Down to the Schedule

This link jumps to the closest day to today's date. Review the schedule as we get started to get a sense of how this course will work on a daily basis.

All the Tools You Need As We Begin:

Download and install the following software on your own personal computer(s) on or before the first day of class. These software tools are available in our campus computing labs, too.

1. <oXygen/>. The DIGIT program has purchased a site license for this software, which is installed in Kochel 77 and the Lilley Library computers. The license also permits students enrolled in the course to install the software on their home computers (for course-related use only). When installing this on your own computers, **you will need the license key**, which we have posted on our course Announcements section of Canvas.
2. Zoom: Make sure your Zoom installation is up-to-date, and you are ready to connect. The Zoom link for our regularly scheduled class meetings is posted in Canvas: Look for the Zoom menu option.

3. All students require a good means of secure file transfer (SFTP) for homework assignments and projects (also available in the campus computer labs). There are several good options available. We recommend you download and install on your own computers one (or more) of the following, depending on your platform: (Feel free to experiment with these and others!)
    - **Windows users:** one of the following FTP clients—the functionality is similar:
        - FileZilla (This is our favorite client because it behaves the same way across platforms.)
        - WinSCP (This is one we used for a long time, since the 1990s, but we now use SSH and Filezilla more frequently.)
        - SSH Secure Shell Client
    - **Mac users:**
        - FileZilla (This is our favorite client because it behaves the same way across platforms.)
        - or Fetch (students may obtain free licenses at http://fetchsoftworks.com/fetch/free)
    - **Linux users:** You probably don't need to install anything, but look at how your system handles secure file transfer (SFTP). (FileZilla or other clients designed for Linux environments.)
4. Rusty with coding? Don't remember anything from DIGIT 110? Don't worry! Past students in this course who never saw anything like markup or XML code have designed projects (like these) and even spoken about them at undergraduate conferences! You will learn to develop your own digital tools and how to manage digital projects as teamwork.

Class Web Resources:

- newtFire: Our project development site, where you will be publishing your projects.
- digitProjectDesign-Hub: https://github.com/newtfire/digitProjectDesign-Hub Class GitHub Repository and Issues Board
- Canvas: http://canvas.psu.edu To submit homework assignments and exams, read private course announcements, access Zoom class meetings and video recordings.
- File Conventions for Canvas Homework Assignments
- Explanatory Guides and Exercises: Complete List

Week 1	Topics	Do before class	Group A	Group B
M 08-24	Welcome! Introduction to the course. Clay Shirky on Love, Internet Style and the Ise Shrine (9 minutes) What does an ancient wooden shrine have to do with digital projects? Intro to XML in oXygen and some things we can build with it.	Respond to Dr. B's Poll (see Canvas / Penn State email). Find the Zoom link for class (on Canvas / Penn State email).	Zoom remotely	Kochel 77 + Zoom (audio muted)
W 08-26	XML coding: a poem; a recipe. Elements, attributes, comments, escape characters, and "pretty-printing" in <oXygen/>.	Install oXygen XML Editor and add our license key so we can all use this during our meeting today. Read my Introduction to XML and experiment with the code in the tutorial: Can you tell what makes markup **well-formed** or not?	Kochel 77 + Zoom (audio muted)	Zoom remotely

F 08-28	Discussion of homework, and XML: Well-formedness vs. Validity. XML projects in digital humanities. Introduce past student projects.	Complete XML Exercise 1	Zoom remotely	Kochel 77 + Zoom (audio muted)
Week 2	**Topics**	**Do before class**	**Group A**	**Group B**
M 08-31	Discussion of homework (XML Exercise 2). Introduce the Bash shell and GitHub.	Complete XML Exercise 2.	Kochel 77 + Zoom (audio muted)	Zoom remotely
W 09-02	Getting started with command line, git, and GitHub. MIndful file management. Markdown vs. markup in GitHub issues: Hands-on work with our class GitHub repo.	Git Exercise 1 (setting up your GitHub account). Watch my video introducing the Bash shell and "home" on your computers. Practice some shell commands	Zoom remotely	Kochel 77 + Zoom (audio muted)
F 09-04	Learning git commands and working at command line (hands-on exercise).	Review feedback on your coding exercises so far and submit revisions if I asked you to. Complete XML Exercise 3: Mark up a text of your choice (any genre, manageable but reasonable size, any language). Work on applying attributes with your elements in a careful and systematic way.	Kochel 77 + Zoom (audio muted)	Zoom remotely
Week 3	**Topics**	**Do before class**	**Group A**	**Group B**
M 09-07 Labor Day, PSU classes in session anyway!	Overlapping Hierarchies: Group Exercise with "Ozymandias."	Complete Git Exercise 2.	Zoom remotely	Kochel 77 + Zoom (audio muted)

W 09-09	Building a code repository as part of a digital project. User Experience (UX): Launch discussion.	Git Shell Practice (starting today for seven days): Make sure your personal repo and the class repo are properly set up and cloned to your computer. Using your Bash shell, practice some basic git commands to build a habit. On alternating days, push to the other repo (if you pushed to your personal repo today, tomorrow you will pull and push a file to our class repo).	Kochel 77 + Zoom (audio muted)	Zoom remotely
F 09-11	Hands-on introduction to schemas with Relax NG: How to write the rules for an XML project	Post in UX Discussion exercise: Choose a digital project to explore (from a list to be posted), and write a post addressing: 1) something interesting the site is inviting us to explore, and 2) the effectiveness of the user experience. Read Intro to Relax NG to get a sense of what it is (we'll go over it in class.)	Zoom remotely	Kochel 77 + Zoom (audio muted)
Week 4	**Topics**	**Do before class**	**Group A**	**Group B**
M 09-14	Relax NG: data types, mixed content. Document data modeling.	Watch my video on setting up oXygen to do Relax NG. Read and work with the and complete Relax NG Exercise 1. Review XML syntax and consult the Intro to Relax NG as you work on this, and ask for help on GitHub if you get stuck. Continue GitHub practice!	Kochel 77 + Zoom (audio muted)	Zoom remotely
W 09-16	Troubleshooting and debugging Relax NG issues. Tour of course projects with strong research questions. Start Class GitHub Project Proposals	Complete Relax NG Exercise 2	Zoom remotely	Kochel 77 + Zoom (audio muted)
F 09-18	DH projects with visual dimensions; research questions to explore patterns and concepts. Workshopping project ideas.	Complete Relax NG Exercise 3. Post / respond to project proposal (now through M 9/21). Each student must respond to at least one proposed idea from another student and indicate suggestions or further ideas.	Kochel 77 + Zoom (audio muted)	Zoom remotely
Week 5	**Topics**	**Do before class**	**Group A**	**Group B**

M 09-21	Form project teams!	Post a project proposal / respond to another. Each student must respond to at least one proposed idea from another student and indicate suggestions or further ideas.	Zoom remotely	Kochel 77 + Zoom (audio muted)
W 09-23	Review Relax NG: Common issues in homework. Project discussion / initiation time in class.	• **Project Checkpoint 1**: Launch the project GitHub repo and post an issue. Post in the Issues board your available meeting times to help determine a regular meeting time for your group. • Revise Relax NG exercises if you were asked to do that.	Kochel 77 + Zoom (audio muted)	Zoom remotely
F 09-25	Initiate first take-home test: Relax NG.	Install FileZilla (or other SFTP client) if you have not done so already: we'll use it next class! Follow instructions posted on Canvas for setting up SSH keys to access your personal webspace on Newtfire.	Zoom remotely	Kochel 77 + Zoom (audio muted)
Week 6	**Topics**	**Do before class**	**Group A**	**Group B**
M 09-28	Building on the Web: Introducing HTML and CSS: Make a simple index.html page. Make a simple CSS page. CSS resemblance and difference from Relax NG (those curly braces). Test / troubleshoot using SSH Keys to access our web server.	• **Complete test: Relax NG** • Read / watch our Introduction to HTMLL in preparation for next class.	Kochel 77 + Zoom (audio muted)	Zoom remotely
W 09-30	What is "index.html" to a web server? Website addresses and file directories on a remote web server Hands-on: Work with FileZilla (or other SFTP client) to connect to the Apache Server for newtFire. SSH keys. File directories and their association with web URLs. How to customize SFTP (Filezilla) to work with your GitHub repo.	Consult our Introduction to Cascading Stylesheets (CSS) to help complete HTML/CSS Exercise 1 (Do not submit this on Canvas, but instead use SFTP on your Newtfire webspace.)	Zoom remotely	Kochel 77 + Zoom (audio muted)

F 10-02	HTML and CSS • Mindful file management: mirroring directory structures on GitHub and the web server • Web browsers and display variations • CSS Box Model • Introduce Flexboxes (see tutorial)	Complete HTML / CSS Exercise 2 (submit this to personal / project web space). Consult Learn CSS Layout, Flexbox tutorial, and w3 Schools CSS Reference as you code. (Also, check out Paletton (or hunt for other color scheme generators on the web) to help think about choosing a balanced color scheme for your website. Experiment with writing CSS to control font, layout, color, backgrounds.	Kochel 77 + Zoom (audio muted)	Zoom remotely
Week 7	**Topics**	**Do before class**	**Group A**	**Group B**
M 10-05	Slack chat and GitHub project management tools for improving communication, completing tasks. Project web work. Project customizations and boilerplate with Server Side Includes (examples). Decide on project website directory names and URLs.	**Project Checkpoint 2:** • Locate all sources for project XML markup • Establish a clear flie directory structure on yoru project GitHub, including a distinct directory for website files • Make sure all project team members work consistently with the GitHub directory structure (all agree on it, no one changes it without notice) • Strong start on a project schema (Relax NG) • A good quantity of documentation and/or markup is present in the GitHub repo.	Zoom remotely	Kochel 77 + Zoom (audio muted)
W 10-07	Introducing Regular Expressions and autotagging. Regular patterns in documents. How to start? inside-out or outside in. "close-open" strategy.	Read Intro to Regular Expressions	Kochel 77 + Zoom (audio muted)	Zoom remotely
F 10-09	Regular Expressions: thinking algorithmically. Greedy matching. Work on Regex together.	Regex Exercise 1	Zoom remotely	Kochel 77 + Zoom (audio muted)
Week 8	**Topics**	**Do before class**	**Group A**	**Group B**

M 10-12	Regex: simplifying over-complicated expressions. Selecting for what's not there. Searching over highlighted portions of a document.	Regex Exercise 2	Kochel 77 + Zoom (audio muted)	Zoom remotely
W 10-14	Project review	**Project Checkpoint 3:** • Some web development for site; navigation menu, page organization • Refined schema • XML markup: significantly more progress than the last checkpoint. Everyone's files are working with the project schema	Zoom remotely	Kochel 77 + Zoom (audio muted)
F 10-16	Navigating XML with XPath: Introducing the XPath window in <oXygen/>, functions, axes, path steps /, and predicate filters **[ ]** Hands-on XPath navigation with Hamlet.	Read our Introduction to XPath: Follow the XPath! As you read, try experimenting with the XPath expressions on our page, by downloading the explainXPath.html file, opening it in oXygen, and experimenting in the XPath window with some of our expressions.	Kochel 77 + Zoom (audio muted)	Zoom remotely
Week 9	**Topics**	**Do before class**	**Group A**	**Group B**
M 10-19	Work on XPath 1 and 2 together. Using XPath axes. Predicate expressions [ ], (grouping).	XPath Exercise 1	Zoom remotely	Kochel 77 + Zoom (audio muted)
W 10-21	Go over XPath 2, start XPath Exercise 3 together. XPath Functions, simple map vs. arrow operator. Using functions inside predicates.	Complete XPath Exercise 2	Kochel 77 + Zoom (audio muted)	Zoom remotely

F 10-23	Go over XPath Exercise 3. Introduce string functions	Complete XPath Exercise 3, or get as far as you can	Zoom remotely	Kochel 77 + Zoom (audio muted)
Week 10	**Topics**	**Do before class**	**Group A**	**Group B**
M 10-26	Combining regular expressions with XPath. String functions. Getting ready for XSLT	Get as far as you can with XPath Exercise 4: String functions	Kochel 77 + Zoom (audio muted)	Zoom remotely
W 10-28	Introducting XSLT (eXtensible Stylesheets Language Transformations). XML to XML, XML to HTML. Namespaces Setting up oXygen to write XSLT.	Read Introduction to XSLT / orientation video	Zoom remotely	Kochel 77 + Zoom (audio muted)
F 10-30	How to write XSLT to change XML into HTML	XSLT Exercise 1: An Identity Transformation	Kochel 77 + Zoom (audio muted)	Zoom remotely
Week 11	**Topics**	**Do before class**	**Group A**	**Group B**
M 11-02	Go over XSLT to HTML. XPath in XSLT. Initiate XPath take-home test.	XSLT Exercise 2 (HTML list)	Zoom remotely	Kochel 77 + Zoom (audio muted)
W 11-04	XPath from test, worked into XSLT	Complete **XPath test**	Kochel 77 + Zoom (audio muted)	Zoom remotely

F 11-06	XSLT: How templates work. Push and pull processing. Write XSLT to make an HTML table together in class.	XSLT Exercise 3	Zoom remotely	Kochel 77 + Zoom (audio muted)
Week 12	**Topics**	**Do before class**	**Group A**	**Group B**
M 11-09	XSLT for editions: push processing. Styling: working with XSLT and CSS together.	XSLT Exercise 4 (review Attribute Value Templates with this). Read about Modal XSLT	Kochel 77 + Zoom (audio muted)	Zoom remotely
W 11-11	Review/ work on Modal XSLT in XSLT Ex 5. Introduce xsl:sort	XSLT Exercise 5	Zoom remotely	Kochel 77 + Zoom (audio muted)
F 11-13	XML to HTML with CSS. Apply to projects	XSLT Exercise 6	Kochel 77 + Zoom (audio muted)	Zoom remotely
Week 13	**Topics**	**Do before class**	**Group A**	**Group B**
M 11-16	Work toward Project Checkpoint 5	XSLT Exercise 7: Applied to your projects.	Zoom remotely	Kochel 77 + Zoom (audio muted)

W 11-18	XML that makes graphics: SVG (Scalable Vector Graphics: Drawing elements and screen grid coordinates • introductory slideshow • Play with w3schools SVG Tutorial	**Project Checkpoint 5:** • Goal: XML markup is mostly complete and ready for active processing with XSLT • Work on XSLT to HTML transformations to build content for the project website • Improve the project website, update its organization and navigation • Project intros: introduce the team members • Other goals specific each team	Kochel 77 + Zoom (audio muted)	Zoom remotely
F 11-20	XSLT to SVG: working with variables to plot coordinate space	SVG Exercise 1	Zoom remotely	Kochel 77 + Zoom (audio muted)

	Topics	**Do before class**	**Group A**	**Group B**
M 11-23 - F 11-27	**Thanksgiving Holiday**	Have a peaceful and productive week! See you online. Work on SVG Exercise 2 and project development		

Week 14	**Topics**	**Do before class**	**Group A**	**Group B**
M 11-30	XSLT to SVG to make a graph	SVG Exercise 2 (XSLT to SVG)	Fully Remote (Zoom)	Fully Remote (Zoom)
W 12-02	XSLT to SVG work together. Introducing simple JavaScript.	SVG Exercise 3 (options: a timeline?, graph from project data?)	Fully Remote (Zoom)	Fully Remote (Zoom)
F 12-04	Associating JavaScript files with HTML, and coordinating with CSS	JavaScript Exercise 1	Fully Remote (Zoom)	Fully Remote (Zoom)

Week 15	**Topics**	**Do before class**	**Group A**	**Group B**

M 12-07	JavaScript for projects	JavaScript Exercise 2 (options: Toggling @class attributes, or working on SVG: show/hide). Project sprint	Fully Remote (Zoom)	Fully Remote (Zoom)
W 12-09	Putting it all together: JavaScript with CSS to interact with SVG.	Project sprint. Prepare for Project Checkpoint 6	Fully Remote (Zoom)	Fully Remote (Zoom)
F 12-11	Last day: **Project Checkpoint 6:** Teams present their projects to the class, invite comments and feedback. Classmates from other teams ask questions, offer commentary on project GitHub repos through early next week.	Prepare to share your project (nearing completion) with the class	Fully Remote (Zoom)	Fully Remote (Zoom)
Finals Week: M 12/14 - F 12/18	***Due***			
H 12-17	**Projects due by 11:59pm** Finish developing projects on newtfire, and send a post to me on GitHub to indicate your team is finished.			