

# Digital Methods in Humanistic Research

## Schedule

### Text Encoding Basics: eXtensible Markup Language (XML)

**Tuesday, August 26** Class:

- What is (computational) Digital Humanities?
- Introduction to XML: hierarchy, well-formedness, elements and attributes
- Using oXygen to mark up Lord of the Rings quotes.

Homework:

- Install oXygen on your personal computer (licence key provided on Canvas)
- Install Visual Studios Code
- Read An even gentler introduction to XML
- XML exercise 1: Copy the text of *one* letter by either Oscar Wilde (please close and ignore the pop-up) or Anton Chekhov and mark it up in XML using and employing whatever markup you consider appropriate. In this and all other assignments, follow our file-naming conventions.

**Thursday, August 28** Class:

- Types of XML markup: descriptive, presentational, procedural
- AI and coding
- Project guidelines

Homework:

- Submit questionnaire on research interests
- XML exercise 2: Mark up a text of your choice (any genre, manageable size, foreign languages welcome)
- Read the linked articles in “Learning Git: Part One”.

### Associated Recitation (Tuesday or Thursday)

- Sample course project
- Homework workshop

**Tuesday, September 2** Class:

- Command line: Friend, not foe
- Conceptual introduction to Git

Homework:

- Complete “Learning Git: Part II,” which teaches you how to set up a GitHub account.
- Read You aren’t a beginning XML developer anymore to help prepare for the XML test.

### Schemas: RelaxNG

**Thursday, September 4** Class:

- What is a “schema”?
- Relax NG (Pasta recipe)
- Quiz: XML basics (handwritten preface to the XML test)

Homework:

- XML test (all tests completed over the weekend, due before next class)

### **Associated Recitation (Tuesday or Thursday)**

- Form project teams
- Go over project team norms: weekly meeting times, communication format, etc.

### **Tuesday, September 9 Class:**

- Relax NG, cont.

#### Homework:

- Relax NG exercise 1: Write a Relax NG schema for one of the XML documents you created for an earlier assignment (XML exercise 1, 2, or 3; you may modify your XML if you wish) and upload both your XML and your schema file.
- Complete “Learning Git: Part III,” which teaches you how to install Git locally on your personal computer.
- First project report

### **Thursday, September 11 Class:**

- Relax NG, cont.

#### Homework:

- Read our Relax NG content models tutorial to learn about modeling mixed content and empty elements.
- Relax NG exercise 2: Choose a small text, perform document analysis, write a schema, mark up the text according to the schema, and upload both your XML and your schema file.

### **Associated Recitation (Tuesday or Thursday)**

- Git: practice and troubleshooting

### **String Matching: Regular Expressions (Regex)**

### **Tuesday, September 16 Class:**

- Lecture: Regex, the superpowered search /replace language
- Lecture: “language” versus “program / app”
- Walkthrough: Regular expressions (Sonnet 60)

#### Homework:

- Read the regex mini-tutorial at <http://www.regular-expressions.info/quickstart.html>.
- Regex exercise 1

### **Thursday, September 18 Class:**

- Regular expressions (word list)
- AI-assisted regular expressions
- Quiz: Schema basics (handwritten preface to the RelaxNG test)

#### Homework:

- Complete RelaxNG test over the weekend
- Read Regex tips (Read the first half, before the Using regex in XSLT section, to acquaint yourself with what’s there, but don’t try to memorize it all at once. You can skip the second half, about regex in XSLT.)

### **Associated Recitation (Tuesday or Thursday)**

- Project workshop: centering our research questions

**Tuesday, September 23** Class:

- Advanced Regex

Homework:

- Regex exercise 2

**Web Technologies: HTML, CSS, Javascript**

**Thursday, September 25** Class:

- Lecture: XML versus its subsets (HTML, TEI)

Homework:

- Read Learn CSS layout
- HTML/CSS exercise 1: Create and upload your first HTML and CSS pages Github Pages (see “Getting started with Git Pages” page on Canvas). The content and look of your webpage is up to you, but should demonstrate usage of several XHTML element types as well as CSS styling. Please submit the URL of your page to Canvas.

**Tuesday, September 30** Class:

- Lecture: Do’s and don’ts of AI assistance for web design
- Walkthrough: CSS

Homework:

- HTML/CSS exercise 2: Enhance and expand your HTML web page and associated CSS from the last assignment (focus this time on structural elements) and upload them as new files with new names (see the additional instructions about formatting, naming, and uploading your files). *Do not overwrite your files from the first HTML assignment.*
- Read What can XPath do for me?

**Associated Recitation (Tuesday or Thursday)**

- The Text Encoding Initiative

**Navigating Textual Markup: XPath**

**Thursday, October 2** Class:

- Lecture: Hierarchical “paths”
- Walkthrough: XPath: overview, paths, axes (fables.xml)

Homework:

- XPath exercise 1

**Tuesday, October 7** Class:

- Lecture: XPath predicates and functions
- Walkthrough: Develop and test (!) path expressions one step at a time

Homework:

- Read The XPath functions we use most
- XPath exercise 2

### **Associated Recitation (Tuesday or Thursday)**

- Web design workshop:
  - A complete guide to Flexbox
  - W3Schools CSS Grid layout module

### **Thursday, October 9 Class:**

- Walkthrough: XPath

Homework:

- XPath exercise 3

### **Tuesday, October 14 Class:**

- Walkthrough: XPath

Homework:

- Complete XPath test

### **Associated Recitation (Tuesday or Thursday)**

- Advanced XPath: work through XPath exercise 4

### **Textual Transformation: XSLT**

### **Thursday, October 16 Class:**

- Lecture: How to look stuff up
- Lecture: XSLT and XPath Overview

Homework:

- Read “XSLT Basics”

### **Tuesday, October 21 Class:**

- XSLT templates
- XPath expressions and XPath patterns

Homework:

- Read Thinking in algorithms
- XSLT exercise 1

### **Associated Recitation (Tuesday or Thursday)**

- First XSLT homework troubleshooting workshop

### **Thursday, October 23 Class:**

- Lecture: XSLT program structure and design

Homework:

- XSLT exercise 2
- Read XSLT, part 2: conditionals and push and pull
- Read Developing an XSLT stylesheet

**Tuesday, October 28** Class:

- Walkthrough: XSLT homework

Homework:

- XSLT exercise 3

**Associated Recitation (Tuesday or Thursday)**

- Project workshop: from XML to your project website using XSLT

**Thursday, October 30** Class:

- Walkthrough: XSLT push and pull
- Guest Lecture: User-defined Functions (David Birnbaum)

Homework:

- Read Attribute value templates
- Read Modal XSLT
- XSLT exercise 4

**Tuesday, November 4** Class:

- XSLT review workshop

Homework:

- XSLT exercise 5

**Associated Recitation (Tuesday or Thursday)**

- XSLT for projects

**Text to Images: Scalable Vector Graphics (SVG)**

**Thursday, November 6** Class:

- XSLT review

Homework:

- XSLT Test

**Associated Recitation (Tuesday or Thursday)**

**Tuesday, November 11** Class:

- SVG

Homework:

- SVG exercise 1
- Read Viewbox tutorial: an introduction to the SVG coordinate space

**Thursday, November 13** Class:

- SVG

Homework:

- SVG exercise 2 (Remember that you should upload the XSLT stylesheet that you used to transform your document, not the SVG output of the transformation)

**Associated Recitation (Tuesday or Thursday)**

- SVG for projects workshop

**Tuesday, November 18** Class:

- SVG

Homework:

- SVG exercise 3

**Thursday, November 20** Class:

- Crash course on XML for geospatial mapping

Homework:

- Project sprint
- SVG test

**Associated Recitation (Tuesday or Thursday)**

- Project Workshop

**November 24-28: Thanksgiving Break (no class)**

**Tuesday, December 2** Class:

- Project Showcase

**Thursday, December 4** Class:

- Project Showcase

**Associated Recitation (Tuesday or Thursday)**

- *does not meet*