

HISTORY 3010

Comprehensive Examination Field Digital/Computational History

Directed Study

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Overview

This directed study course supports students preparing for the comprehensive examination in digital and/or computational history. The course is organized as a tutorial with weekly meetings and a tailored reading plan. Its purpose is to cultivate substantive field literacy, namely the ability to orient quickly within unfamiliar sub-areas, identify foundational bibliographies and primary-source bases, explain how scholars have approached key problems, and assess the strengths and limits of influential approaches. Because this is a broad and rapidly evolving field, the course is designed to be customizable. Each student, in consultation with the instructor, will determine the relative emphasis placed on theory, methodology, and instrumental skills.

Field Scope

The field typically draws from the following areas. Students do not need equal coverage of all topics, but should be able to place their chosen area(s) within the larger landscape.

- Digital history (including institutional histories of digital history/digital humanities/data science in the humanities)
- Debates over method, evidence, validity, and interpretation
- Distant reading and the relationship between scale and historical argument
- Data and data structures (data models, databases, metadata, documentation)
- Digital archives and digitization (including provenance, selection effects, and archival bias)
- Quantitative methods and statistical reasoning
- Spatial history (GIS, mapping, spatial inference)
- Text analysis and Natural Language Processing
- Images and image analysis
- Artificial Intelligence/Large Language Models/Machine learning in historical research (classification, clustering, prediction, evaluation)

- Reproducibility, transparency, and research ethics

Learning Outcomes

By the end of the course, students should be able to:

- Describe major themes, debates, methods, and historiographical shifts in digital/computational history.
- Identify foundational bibliographies, reference works, datasets, and source bases relevant to their field.
- Evaluate scholarship with attention to evidence, data practices, argumentation, and interpretive stakes.
- Translate field knowledge into teachable structures (e.g., a coherent syllabus or course unit outline).
- Participate productively in scholarly conversation by formulating informed questions and making cross-subfield connections.
- Demonstrate appropriate practical competence for the student's selected pathway (e.g., quantitative reasoning, data modeling, text analysis, spatial analysis), sufficient to understand and critique methodological choices.

Course Format and Expectations

The course is conducted as an individual tutorial, with one weekly meeting during the semester (typically 60–90 minutes). Meetings are used to discuss the week's readings, review written work, and—when relevant—work through methodological or skills questions. The workload is substantial and will vary by pathway. As a default target, the reading list should aim for approximately 80 books or 300 articles (often achieved through a mix of monographs, synthetic works, and high-impact articles). If the student's plan places significant emphasis on practical skills (e.g., statistics or programming), the overall reading volume will be adjusted accordingly.

The course balances three strands. The exact mix is agreed upon early and revisited mid-semester.

1. **Theory:** readings, essays, position papers, and conceptual debates (interpretation, explanation, epistemology, and ethics in computational work).
2. **Methodology:** case studies tied to the student's subfield or dissertation interests, emphasizing how methods are used to produce historical claims.
3. **Instrumental Skills:** targeted technical competence as needed (e.g., data structures, statistics, reproducible workflows, or domain-specific tooling). Instrumental work is always oriented toward interpretive ends.

Practical Skill Pathways

If the student's pathway includes substantial instrumental work, we will define a minimal competence goal and a method for demonstrating it. Examples include:

- **Quantitative reasoning/statistics:** comfort reading notation and outputs, understanding core concepts (estimation, uncertainty, model assumptions) and their implications for historical claims.
- **Data structures/databases:** ability to describe data models, query logic, and the consequences of schema choices.
- **Programming (e.g., Python):** ability to read and critique code at a conceptual level, basic reproducible workflows, appropriate documentation practices.

Assignments and Deliverables

All deliverables are submitted on an agreed schedule. Unless otherwise specified, writing should be concise and oriented toward exam usefulness.

1. Reading Log and Weekly Memo

A reading log that includes bibliographic details and a 2–3 sentence abstract per item, as well as a weekly memo (typically 1–2 pages) that:

- synthesizes the week's readings,
- identifies key concepts and debates,
- notes data/source practices and methodological choices,
- records 2–3 exam-style questions the readings raise.

2. Theoretical Response Essays

Two short essays (typically 4–6 pages each) on theoretical themes agreed upon early in the semester. Possible prompts include: explanation and causality, evidence and measurement, scale and interpretation, ethics and power, modeling and historical argument.

3. Case Study

One case study (typically 6–10 pages) analyzing a computational history project or article cluster relevant to the student's specialization. The case study should reconstruct the project's research design: question, sources/data, transformations, method, evaluation, and the resulting historical claims.

4. Problem Sets/Exercises (*if applicable*)

Short exercises agreed upon in consultation (frequency and scope vary by pathway). Exercises may include interpreting statistical outputs, writing pseudocode, data cleaning/documentation tasks, replicating a published result at a conceptual level, or critiquing model/measurement choices.

5. Teaching Artefact (not required, but recommended)

A draft syllabus for an undergraduate course/unit in digital/computational history or a student's subtopic, with readings overlapping substantially with the exam bibliography.

In addition, we will schedule a Mock Exam towards the end of the semester. This will consist of a structured conversation including:

- "Map the field" explanation,
- targeted deep dive in the student's pathway,
- articulation of trends and open problems.

Bibliography

The final reading list will be a combination of instructor suggestions and student-selected works, agreed upon in consultation. The items included below are for reference only, please use the shared Zotero library as the authoritative, up-to-date source of the complete list.

Textbooks (Quantitative reasoning/statistics pathway)

Agresti, Alan. 2009. *Statistical Methods for the Social Sciences*. 4th ed. With Barbara Finlay. Pearson Prentice Hall.

Brown, Jonathon D. 2014. *Linear Models in Matrix Form: A Hands-On Approach for the Behavioral Sciences*. 1st ed. 2014. Springer International Publishing: Imprint: Springer.

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Otero, Daniel E. 1999. 'Calculus from a Historical Perspective: A Course for Humanities Students'. *PRIMUS : Problems, Resources, and Issues in Mathematics Undergraduate Studies* 9 (1): 56–72.

Wheelan, Charles J. 2013. *Naked Statistics: Stripping the Dread from the Data*. First edition. W.W. Norton & Company.

General Readings

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Andert, Martin, Frank Berger, Paul Molitor, and Jörg Ritter. 2015. 'An Optimized Platform for Capturing Metadata of Historical Correspondence'. *Literary and Linguistic Computing* 30 (4): 471–80.

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Brier, Stephen. 2012. 'Where's the Pedagogy?: The Role of Teaching and Learning in the Digital Humanities'. In *Debates in the Digital Humanities*, NED-New edition, edited by Matthew K. Gold. University of Minnesota Press.

Broussard, Meredith. 2018. *Artificial Unintelligence: How Computers Misunderstand the World*. MIT Press.

Budzise-Weaver, Tina. 2016. 'Developing a Qualitative Coding Analysis of Visual Artwork for Humanities Research'. *Digital Humanities Quarterly* 10 (4).

Burdick, Anne, Johanna Drucker, Peter Lunenfeld, Todd Presner, and Jeffrey Schnapp, eds. 2012. *Digital Humanities*. MIT Press.

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