DIGITAL METHODS: CHINESE STUDIES

Spring 2018

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Class time: Tuesday and Thursday: 1:00-2:22 PM
Location: Coleman 220

Instructor: Song Chen
Office: 14 Marts Hall
Email: song.chen@bucknell.edu
Phone: 570-577-3262
Office hours: Tuesday and Thursday 11:00 AM – noon, 2:30 -3:30 PM, and by appointment

Course site: https://digitalmethodschina.blogs.bucknell.edu/

Course Overview

This course introduces you to digital humanities with particular reference to the study of Chinese history in the middle period (700-1300). It introduces you to three major methodologies that are transforming the discipline of history in the digital age: prosopography, spatial analysis, and network analysis. Using these tools, this course helps you discover the macroscopic changes that took place in the middle period of China, known as the Tang-Song transition. The technical topics we cover include relational databases, data processing in Microsoft Excel, and data visualization on GIS and network analysis platforms for the analysis of geographic and biographical data; we also introduce you briefly to regular expressions and XML markups.

Course Objectives

There are **three main objectives** in this course: i) to develop a basic literacy of computational methods in historical scholarship and a critical understanding of their capabilities and limitations; ii) to develop a deep understanding of different aspects of the Tang-Song transition: the economic revolution, the transformation of the political elite, and the Neo-Confucian movement; and iii) is to cultivate your ability to think about history in spatial and relational terms, facilitated by computational processing of large quantities of spatial and biographical data.

With study in this course, at the end of the semester, you will be able to use a variety of computational methods to process large quantities of data for answering historical questions. You will also be able to reassess influential arguments of later imperial Chinese history and critically evaluate the strengths and weakness of several major methodologies in humanities and social sciences disciplines. More specifically, you will acquire basic but crucial computational skills that allow you to:

- Transform historical texts into annotated XML files and extract data from these files;
- Build relational databases for effectively organizing and querying historical data; and
- Use appropriate software to implement simple visualization and analysis of large quantities of data for answering historical questions.

You will acquire these skills in the context of thoughtful scholarly discussions over methodology and historical change. This immersive experience in data extraction, management, visualization, and analysis will allow you to:

- Think spatially, relationally, and about broad patterns of historical change
- Revisit and reassess major arguments of historical change that took place in China between 700 and 1800, in particular those related to life and behavior of the officeholding elites;
- Critically evaluate the tradition of prosopography and the opportunities it faces in this digital age;
- Critically evaluate two major modes of analysis (spatial and network) with keen awareness of the epistemological assumptions in each;
- Evaluate and make effective use of a few major digital humanities endeavors, such as the China Biographical Database.

This course is designed primarily for history students who are interested in Chinese history. However, since the main objective of the course is to help you develop a set of research skills essential in our digital age, which will be transferrable to other courses – in and outside the humanities disciplines – and even your future career, you may find it useful even if your primary interest is elsewhere but your work has a historical dimension and draws upon spatial and biographical data.

Methods of Instruction
This course centers student presentations, discussions, and lab practices. Short lectures are given only if necessary. With all readings and assignments in English, this course requires no prior knowledge of Chinese history or language. As an introduction to digital humanities, successful completion of the course does not involve programming. Nor does enrollment in the course require prior experience with any computer software.

Readings
You are not required to purchase any textbooks for this course. All readings, assignments, and datasets will be posted on the course website. "Further readings" are recommended, but _not required_.

Grading Scale

93-100 %	A	77-79.9%	C+
90-92.9%	A-	73-76.9%	C
87-89.9%	B+	70-72.9%	C-
83-86.9%	B	60-69.9%	D
80-82.9%	B-	Below 60%	F

The grading system used in this course follows the guidelines in Bucknell's Catalog of Courses:
A = Superior Achievement; B = High Pass; C = Pass; D = Low Pass; F = Failing Work

Grade Breakdown

Class Participation	20%
Weekly Assignments	20%
Quizzes	20%
Projects and Presentations	20% (2 * 10%)
Project-based Papers	20% (2 * 10%)

Weekly Assignments
Starting from Week 2, you will be asked to finish an assignment each week. Sometimes, the assignment is a short response paper (usually 1 to 2 pages) that report your reflections on the assigned readings. At other times, it is a problem set that draws on the digital skills you have learned in class. All weekly assignments are due at **5 p.m. Saturday**.

Weekly assignments are intended to help you wrap up what you have learned in the week and get prepared for the meetings in the following week. Therefore, they are time-sensitive. All weekly assignments must be submitted to the online drop box **before due**. No late work is accepted, and no make-up is permitted. Your work will be evaluated on a 5-point scale based on the following rubric: 5 points (**Exceptional**); 4 points (**Satisfactory**); 3 points (**Acceptable**); 2 points (**Underdeveloped**); 1 point (**Very Limited**); 0 point (**No Credit**). Please note that I use the Moodle grading system only to communicate with you the grades of individual submissions. I do not use Moodle's built-in conversion algorithms in calculating your final grades.

Taking Notes!!!
You can't imagine how quickly you may forget some procedures which you thought was so simple and so intuitive. Sometimes, say, you just forget where in the drop-down menu a particular button is located. There are only three ways to beat forgetting: notes-taking, practice, and repetition – or "**NPR**." The value of taking notes in class discussion is not to be discounted, but it is REALLY important that you keep a journal for your lab work, jogging down the major steps you've taken to finish each exercise and the traps you'd like to warn yourself of in the future. You may be asked to submit a copy of your notes now and then during the semester and it will be factored into your class participation grade.

Projects and Short Papers
Forty per cent of your grade depends on successful completion of a series of projects and write thoughtful short papers interpreting your projects in the broader historical and historiographical contexts. This requires that you have mastered both the digital skills and have reflected on the assigned course readings. I grade your project and your paper separately. When grading your project, I focus on its design (the question it asks) and its execution (the data it uses and the visualizations it creates); when grading your paper, I focus on the way you interpret your visualizations in the appropriate historical context and the conventional elements professors look for in an academic paper (argument, organization, language, and the mechanics [grammar, spelling, etc.]).

Romanization and Pronunciation of Chinese Words
The current international standard for Romanizing Chinese characters is the *pinyin* system. All course materials (textbooks, handouts, and assigned readings) use the *pinyin* system of Romanization, unless otherwise noted.

Pronunciation of many Chinese words transcribed in the *pinyin* system is quite intuitive (well, let's forget the annoying tones in the course!). But every once in a while you may bump into some difficult ones. That's the time when you need to check out the following website for audio files on all *pinyin* combinations:
https://chinese.yabla.com/chinese-pinyin-chart.php

The following is the schedule and organization of the course, which may be updated during the semester if necessary. When changes are made, you will be notified by email and an announcement will be posted on the course website.

Note: All readings, assignments, and datasets are provided on the course website, unless otherwise specified. *All readings and homework listed must be completed before class for the date assigned.*

Week 1 (Jan 16, 18):
    Tuesday   Texts, Data, Images, and Arguments
- Wikipedia, China Vitae, Connected China

    Thursday   History and Methods: The Tang-Song Transition and the Digital Approaches
    Learning Objectives:
- Overview of the Tang-Song Transition
- Understand the two different approaches to analyzing historical and literary texts with the aid of digital tools

    Read:
- Song Chen, "Why Humanists Should Fall in Love with "Big Data," and How?"
- Peter K. Bol, "The New World of the Eleventh Century: 750 and 1050 Compared"
- Read *Cambridge Illustrated History of China*, Chapters 5-6 (optional)

    Watch:
- Paul Vierthaler, "Digital Approaches to Late Imperial Chinese Literature: Exploring Quasi-historical Texts"
- Donald Sturgeon, "Exploring Text Reuse in Pre-Qin and Han Corpus"

Module 1: Spatial Thinking and the Medieval Economic Revolution

Week 2 (Jan 23, 25):
Tuesday: From Chang'an to Kaifeng
    Learning Objectives:
- Explore economic changes from Tang to Song times using historical records and paintings

    Read and explore:
- *Daily Life in Traditional China: The Tang Dynasty,* Chapter 3 (Cities and Urban Life)
  - Map of Tang dynasty capital Chang'an
- "The Attractions of the Capital"
  - Multimedia: Interactive Qingming Scroll

    Thursday   The Medieval Economic Revolution in China
    Learning Objectives:
- Explain China's medieval economic revolution

    Read:
- Richard von Glahn, "Economic Transformation in the Tang-Song Transition"

    Further Readings:
- Mark Elvin, *The Pattern of the Chinese Past*, pp.113-202

Week 3 (Jan 30, Feb 1):
Tuesday   Think Spatially: Why Does Space Matter?
    Learning Objectives:
- Why does space matter in the study of Chinese history? What does it mean to think spatially?

    Read:
- G. William Skinner, "The Structure of Chinese History." *Journal of Asian Studies* 44.2 (1985): 271-92.

- Peter K. Bol, "What is a Geographic Perspective on China's History?" In *Chinese History in Geographical Perspective* (Lantham: Lexington Books, 2013), pp. 197-204.

Thursday   Introduction to the Geographical Information System (GIS)
Learning Objectives:
- Understand basic concepts in GIS, such as raster and vector data, layers, points and polygons, and coordinate systems
- Explore GIS-based online projects and understand how GIS helps reveal spatial patterns

Read:
- *GIS Commons*, Chapter 1 "Introduction"

Explore:
- ChinaMap @ Harvard
- Digital Atlas of Roman and Medieval Civilizations (DARMC)

Week 4 (Feb 6, 8):
Tuesday   Creating Thematic Maps in ArcGIS: I
Learning Objectives:
- Map point features in ArcGIS
- Use appropriate symbology for analysis and report
- Interpret spatial patterns in ArcGIS

Homework:
- Prepare social and economic data for GIS lab

Thursday   Creating Thematic Maps in Desktop ArcGIS: II
Learning Objectives:
- Use joins, calculations, and other features in ArcGIS
- Understand the issue of "rhetorical honesty"
- Preparing maps for publication

Read:
- Mark Monmonier, "Lying with Maps," Statistical Science 20.3(2005): 215-22.
- John Theibault, "Visualizations and Historical Arguments," in *Writing History in the Digital Age* (final 2013 version)

Module 2: Spatial Thinking and the Chinese Political Elite

Week 5 (Feb 13, 15):
Tuesday   Education, Examination, and the Ruling Elite
Learning Objectives:
- Explain the social and political consequences of the Tang-Song transition

Read:
- Dieter Kuhn, "Education and Examination"
- John Chaffee, "The Geography of Success"

Thursday   The Changing Geography of Power
Learning Objectives:
- Explain the social and political consequences of the Tang-Song transition
- Use modularized queries in CBDB, project them in ArcGIS, and interpret the maps

Read:
- Nicholas Tackett, "The Geography of Power"
- Song Chen, "Governing a Multicentered Empire"

Week 6 (Feb 20, 22):
Tuesday   Biography and Prosopography
Learning Objectives:
- Understand the traditions of Chinese biographical writing
- Understand "prosopography" as an approach of historical research

Read:
- Denis C. Twitchett, "Chinese Biographical Writing." *Historians of China and Japan*. Eds. W. G. Beasley and Edwin G. Pulleyblank. London: Oxford University Press, 1961. 95-114.
- "Biography of Lü Zuqian" in the dynastic history
- Lawrence Stone, "Prosopography." In *Historical Studies Today*, edited by Felix Gilbert, E. J. Hobsbawm and Stephen Richards Graubard. New York: W. W. Norton, 1972.
- Peter K. Bol, " Lü Zuqian (1137-1181) in Context: Bring Data into Intellectual History Using the China Biographical Database," paper for the Middle Period History Conference, 2014

Further Readings:
- K. S. B. Keats-Rohan, ed. *Prosopography Approaches and Applications: A Handbook* (Oxford: Unit for Prosopographical Research University of Oxford, 2007): "Abstracts of Papers" (pp.xi-xix) and "Introduction" (pp.1-32).

Thursday   XML, RegEx and Data Mining
Learning Objectives:
- Understand the basics of XML, RegEx, and data mining

Read:
- David J. Birnbaum, "What is XML and why should humanists care?"
- Peter K. Bol, et al, "Mining and Discovering Biographical Information in Difangzhi with a Language-Model-based Approach"

Week 7 (Feb 27, Mar 1):
Tuesday   From Spreadsheets to Relational Databases
Learning Objectives:
- Understand the concept, strengths, and structure of relational databases

Read:
- "Introduction to Entity-Relationship Modelling"
- Susan Schreibman, Ray Siemens, and John Unsworth ed., *A Companion to Digital Humanities* (Oxford: Blackwell, 2004), Ch.15: " Databases" (only the sections before "Schema Design" are required).
- Michael A. Fuller, *The China Biographical Database (CBDB) User's Guide*, Introduction and Chs.1-2.

Thursday   CBDB and Spatial Visualizations
Learning Objectives:
- Build queries in CBDB
- Explore historical change using time-enabled GIS

Read:
- Michael A. Fuller, *The China Biographical Database (CBDB) User's Guide*, Ch.3.

Explore:
- 明清人名權威檔案 / Ming-Qing Persons Authority Database
- 佛學規範資料庫/ Buddhist Studies Authority Database Project
- China Vitae
- The Prosopography of Anglo-Saxon England (PASE)
- Prosopography of the Byzantine World
- Ming Qing Women's Writings / 明清婦女著作資料庫

Week 8 (Mar 6, 8):
  Tuesday   Project 1 Tutorial
  Thursday   Project 1 Presentations

Week 9 (Mar 13, 15): Spring Break — No Class

Module 3: Space and Structure of Elite Networks

Week 10 (Mar 20, 22):
  Tuesday   The "Localist Turn"
    Learning Objectives:
    - Understand the "localist turn," its nature and historical significance
    Read:
    - Robert P. Hymes, *Statesmen and Gentlemen: the Elite of Fu-chou, Chiang-hsi, in Northern and Southern Sung*, pp.82-123.
    - Beverly J. Bossler, *Powerful Relations: Kinship, Status, & the State in Sung China (960-1279)* (Cambridge, MA: Harvard University Press, 1999), pp.78-94 and 156-175.
    - Robert P. Hymes, "Elites, Locality, and the State" (*Cambridge History of China*, Vol. 5, Part 2, pp.621-61)
    Further Readings:
    - Song Chen, "Local Society and the Region under a Decentralized Rule: The Case of Sichuan in Song Dynasty"

  Thursday   Mapping Social Relationships
    Learning Objectives:
    - Map line features in ArcGIS/Palladio
    Read:
    - Hilde De Weerdt, *Information, Territory, and Networks*, Ch.7
    Tutorials:
    - Miriam Posner, "Getting started with Palladio"

  Project # 1 and Short Paper #1 due at 5 p.m., Sunday, March 25.

Week 11 (Mar 27, 29):
  Tuesday   Think Relationally: Introduction to Network Visualization
    Learning Objectives:
    - Understand basic concepts in network analysis, such as nodes, and edges / ties
    - Prepare data in appropriate formats for Gephi
    - Use Gephi to create a simple network graph
    - Understand the strengths and limits of network graphs for addressing research questions
    Read:
    - Kieran Healy, "Using Metadata to Find Paul Revere"
    - Scott B. Weingart, "Demystifying Networks," Parts I and II

  Thursday   Ideology and Court Politics
    Learning Objectives:
    - Interpret the different ideological positions of major 11th-century statesmen
    Read:
    - Wang Anshi, "Memorial to Emperor Renzong"
    - "Debate over Wang Anshi's New Laws," in *Sources of Chinese Tradition*, vol.1, pp. 631–34.

Week 12 (Apr 3, 5):
Tuesday   The Network Approach to Politics: Identifying Clusters
    Learning Objectives:
    - Interpret the different ideological positions of major 11th-century statesmen Interpret the relationship between ideology and Song politics
    - Use the network approach to explore Song politics
    - Use Gephi to detect communities in a network
    Read:
    - Peter K. Bol, "Government, Society, and State: On the Political Visions of Ssu-ma Kuang (1019-1086) and Wang An-shih (1021-1086)," in *Ordering the World*, pp.128-92.
    - Mark Strange, "Factionalism and the formation of eleventh-century military policy: a study of Sima Guang's political network"

- Robert A. Hanneman and Mark Riddle. "Introduction to social network methods". 2005. Published in digital form at http://faculty.ucr.edu/~hanneman/nettext , Chapter 11.

Further Readings:
- Yves Gingras, "Mapping the Structure of the Intellectual Field Using Citation and Co-Citation Analysis of Correspondences"
- Song Chen, "Governing a Multicentered Empire"

Thursday   CBDB and Network Visualizations
Learning Objectives:
- Formulate research questions about Song dynasty networks
- Query network data in CBDB
- Visualize CBDB network data outputs

Read:
- Michael A. Fuller, *The China Biographical Database (CBDB) User's Guide*, Ch.3.

Week 13 (Apr 10, 12):
Tuesday   The Small-World Problem and the Bridges and Hubs
Learning Objectives:
- Understand the small world phenomenon
- Understand bridges and hubs in networks
- Detect bridges and hubs in Gephi

Read:
- John F. Padgett and Christopher K. Ansell. "Robust Action and the Rise of the Medici, 1400-1434." *American Journal of Sociology* 98 (1993): 1259-1319.
- Sindbæk, Søren Michael, "The Small World of the Vikings: Networks in Early Medieval Communication and Exchange," *Norwegian Archaeological Review*, 40:1 (2007): 59-74
- Robert A. Hanneman and Mark Riddle. "Introduction to social network methods". 2005. Published in digital form at http://faculty.ucr.edu/~hanneman/nettext, Chapter 10.

Further Readings:
- *Six Degrees*, pp. 37-47, 92-100
- *Linked*, pp.41-64
- Mark S. Granovetter, "The Strength of Weak Ties"

Thursday   The Neo-Confucian Moral Philosophy and Social Program
Learning Objectives:
- Interpret the intellectual and social positions of the Neo-Confucian thinkers

Read:
- Zhu Xi, "Preface to the Mean by Chapter and Phrase" (*SOCT*, 731-4)
- Zhu Xi, "Proposal for Community Granaries" (*SOCT*, 746) and "The Lü Family Community Compact, Amended and Emended" (*SOCT*, 751-4)

Week 14 (Apr 17, 19):
Tuesday   Networks, Geography, and the Neo-Confucian Movement
Learning Objectives:
- Understand the social character of the Neo-Confucian movement
- Explore how network analysis may be employed in studying intellectual and social movements

Read:
- Peter K. Bol, " GIS, prosopography and history," *Annals of GIS* . 2012.18(1):3-15.
- Han Zhang, "State, Literati and Neo-Confucians: an Analysis of Literati Social Network, 1160-1241"

Further Readings:
- Roger V. Gould, "Uses of Network Tools in Comparative Historical Research." In *Comparative Historical Analysis in the Social Sciences*, pp.241-269.
- Charles Wetherhall,. "Historical Social Network Analysis." In *New Methods for Social History* (New York: Cambridge University Press, 1998), pp. 125-44.

Thursday   Project 2 Tutorial

Week 15 (Apr 24, 26):
  Tuesday   Project 2 Presentations

  Thursday   Reflections on the Tang-Song Transition
    Learning Objectives:
- What was the Tang-Song Transition, and what was its historical significance?

    Readings:
- Hisayuki Miyakawa, "An Outline of the Naito Hypothesis and Its Effects on Japanese Studies of China," *The Far Eastern Quarterly*, 14.4 (1955), pp.533-52.
- Robert M. Hartwell, "Demographic, Political, and Social Transformation of China, 750-1550." *Harvard Journal of Asiatic Studies* 42.2 (1982): 365-442.
- Song Chen, "The State, the Gentry, and Local Institutions: The Song Dynasty and Long-Term Trends from Tang to Qing," *Journal of Chinese History* 1 (2017): pp.141-82.

Project #2 and Short Paper #2 due on Final Examination Day.

Department and University-Wide Educational Goals

This course meets one of the learning goals for Majors in East Asian Studies. As such, after completing this course, you will be able to:
- Demonstrate a working knowledge of the history of China and its basic chronology.

This course also fulfills the requirement of the **Digital Humanities Minor**.

This course fulfills several of the University-wide educational goals. You will develop basic information literacy and technological competency in digital humanities and Chinese history (EG 8) and be able to integrate and synthesize a wide range of methodological approaches across the disciplines of history, East Asian studies, sociology, GIS, and computer science (EG2). These competencies will enable you to evaluate historical and methodological arguments in a critical way (EG 6). The continuing relevance of these skills in this digital age will, I hope, arouse in you the desire and give you the intellectual skills for life-long pursuit in the intersection between computer sciences and humanities (EG 9).

Contractual Fine Print

Attendance and Participation
A deeper understanding of assigned readings and the development of your digital skills depend heavily on class participation. Class attendance is absolutely mandatory for this course. Since each class meeting in this course builds upon previous meetings, missing any class may create great obstacles for your study in subsequent class sessions. **Excused absences** may require a written note from Dean's Office, the Student Health Services, or your athletic team. You may have **two** absences, excused or unexcused, during the semester without penalty. More than two absences, excused or unexcused, will affect your class participation grade adversely. If you accumulate *four* or more unexcused absences in this class, you will receive an "F" for participation. This means that the best you can hope to do in this course – given full marks on all other assignments – would be an 80 (B-).

Participation happens in a number of ways in and outside classroom. Some of the ways that you may expect to participate include:

- Contributing to class discussion
- Active listening / reading (i.e. contributing questions in class, and taking notes on the technical know-hows)
- Contributing to class discussion;
- Taking notes when necessary;
- Reading aloud and interpreting a text in class;
- Giving well-prepared, thoughtful presentations in class;
- Writing thoughtful response papers; and
- Finishing your weekly assignments.

You are expected to engage in these activities with energy and enthusiasm. A student who receives an A in this category will participate in most or all of these capacities consistently, enthusiastically, and thoughtfully. A student who does well to fair in this category (a B or C) will participate in some of these capacities but either inconsistently (B) or reluctantly (C). A student who performs poorly in this category (D or F) will rarely participate in any capacity (D) or will miss an inappropriate amount of class (F).

Late Work Policy
To ensure fairness for your peers, in general, late work will not be accepted. This said, I encourage you to speak with me in advance of the due date if you feel there is a circumstance which will make it impossible for you to submit the final paper on time. In cases when late work is accepted, a grade deduction of 1/3 of a letter (B+ to B, for example) will be applied for each 24 hours the assignment is overdue.

Academic Integrity and Misconduct
Plagiarism is a grave academic violation and carries severe consequences. It is your responsibility to ask

questions and seek answers if you are uncertain about plagiarism or any other type of academic misconduct. Plagiarism is frequently the result of last-minute desperation. To avoid plagiarism, you are advised to start early on any assignment and work according to a schedule. See http://www.bucknell.edu/x1326.xml for more details.

Bucknell University is an academic community that assumes personal and professional integrity on the part of all its members. The university's policies and procedures regarding academic responsibility were designed in accordance with our commitment to the five fundamental values that define academic integrity according to Duke University's Center for Academic Integrity: honesty, trust, fairness, respect, and responsibility.
These values are inscribed in the Bucknell University Honor Code, which was adopted in spring of 2005. Supporting these values in word and deed is the responsibility of each member of the community and alleged acts of academic misconduct should be taken seriously and dealt with according to the university's policy.

Bucknell University Honor Code

As a student and citizen of the Bucknell University community:
1. I will not lie, cheat, or steal in my academic endeavors.
2. I will forthrightly oppose each and every instance of academic dishonesty.
3. I will let my conscience guide my decision to communicate directly with any person or persons I believe to have been dishonest in academic work.
4. I will let my conscience guide my decision on reporting breaches of academic integrity to the appropriate faculty or deans.

Other considerations
If you have a learning disability or personal circumstance that should be brought to my attention, please do so at the beginning of the semester. I am happy to provide reasonable accommodations when appropriate.

Resources
Any student who may need an accommodation based on the impact of a disability should contact Heather Fowler, Director of the Office of Accessibility Resources at 570-577-1188 or hf007@bucknell.edu who will help coordinate reasonable accommodations for those students with documented disabilities.

Bertrand Library and the Writing Center are tremendously helpful resources, which you should consider using. Visit their web pages at http://researchbysubject.bucknell.edu and http://www.bucknell.edu/x3825.xml for more details.