Master of Arts in Digital Studies of Language, Culture, and History

Department Website: http://digitalstudies.uchicago.edu

**People**

- Faculty Director: David Schloen
- Associate Director: Miller C. Prosser
- Digital Studies Faculty Board (https://digitalstudies.uchicago.edu/people/)

**Overview**

The University of Chicago's program in Digital Studies of Language, Culture, and History provides a one-year Master of Arts (https://digitalstudies.uchicago.edu/overview-timeline/) curriculum intended for full-time students who have a bachelor's degree in the humanities or in a related discipline such as history, anthropology, or linguistics. In addition, a joint BA/MA (https://digitalstudies.uchicago.edu/bama/) and undergraduate Minor (https://digitalstudies.uchicago.edu/minor/) in Digital Studies are offered to students in the College of the University of Chicago, and a Graduate Certificate (https://digitalstudies.uchicago.edu/graduate-certificate/) in Digital Studies is available to graduate students in other programs of the University. The MA in Digital Studies (https://digitalstudies.uchicago.edu/overview-timeline/) qualifies as a STEM Designated Degree Program (https://www.ice.gov/sites/default/files/documents/Document/2016/stem-list.pdf) under the regulations of the United States Immigration and Customs Enforcement agency.

The Digital Studies program at the University of Chicago responds to the growing demand for academic rigor in the loosely defined field of digital humanities (https://en.wikipedia.org/wiki/Digital_humanities/) and the need to certify technical competence in this area. The program equips students of the humanities to pursue careers that utilize their skills in research, writing, and critical thinking in tandem with the use of software for the study of human languages and cultures, past and present.

The Digital Studies faculty and staff (https://digitalstudies.uchicago.edu/people/) represent a wide range of academic fields, including linguistics, literary studies, media studies, history, philosophy, anthropology, archaeology, art history, visual arts, musicology, and religious studies. The participants in this program share a common interest in understanding the impact of digital technology in modern society and in using digital tools to represent, explore, analyze, publish, and preserve the products of human language and culture. Products amenable to digital study range from everyday speech and writing to historical documents and literary texts, and include music and art as well as mundane objects, places, and institutions.

The Digital Studies courses (https://digitalstudies.uchicago.edu/course-descriptions/) are designed to foster, not only technical skills in coding and data analysis, but also an understanding of the history of digital computing and its cultural impact from the perspective of the humanities. Students in these courses are introduced to computer programming and the use of software libraries via three widely used programming languages: Python, R, and JavaScript. Learning to code in these languages is the gateway for students to understand and use cutting-edge digital tools and data standards to manage, analyze, and publish data, with emphasis on the kinds of data—textual, visual, sonic, spatial, and temporal—commonly encountered in the humanities.

This curriculum enables students, not just to understand and use computational methods, but to see digital computing as a cultural activity in its own right—an activity to be studied with respect to its historical development, social setting, cultural impact, and aesthetic qualities, as well as the ethical dilemmas it creates in our increasingly digitized and networked world.

**Degree Requirements**

The MA program in Digital Studies of Language, Culture, and History is a one-year program in which students take 10 courses (9 for credit and 1 non-credit) from early September to early June and complete an MA thesis by the end of July. The course requirements are broken down as follows:

- 1 three-week intensive September course (non-credit) on computer programming using the Python programming language, immediately preceding the Autumn Quarter.
- 1 discussion-oriented seminar in the Autumn Quarter on the history of computing and current debates in digital humanities.
- 5 courses on data management, data analysis, data publication, and natural language processing (2 in Autumn, 2 in Winter, 1 in Spring).
- 3 elective courses in any field of the humanities or humanistic social sciences (1 in Winter and 2 in Spring); at least one of the elective courses must have a digital component.
• completion of the MA thesis by May 15 for June graduation, with the option of completing it by June 15 for graduation in late August, at the end of the Summer Quarter.

SEPTEMBER (BEFORE THE START OF THE AUTUMN QUARTER)
• DIGS 30000 Introduction to Computer Programming for Digital Studies MA Students. Introduction to Computer Programming (intensive 3-week non-credit course)

AUTUMN QUARTER
• DIGS 30002 Data Analysis for the Humanities I
• DIGS 30003 Data Management for the Humanities
• DIGS 30007 Introduction to Digital Humanities

WINTER QUARTER
• DIGS 30004 Data Analysis for the Humanities II
• DIGS 30005 Data Publication for the Humanities
• Approved elective
• Selection of MA thesis topic and confirmation of a thesis adviser

SPRING QUARTER
• DIGS 30006 Natural Language Processing
• DIGS 30008 Thesis Preparation
• Approved elective
• Approved elective
• Ongoing work on the MA thesis, due May 15 for June graduation or June 15 for August graduation

SUMMER QUARTER
Completion of the MA thesis, if the student has not submitted it in time to receive the MA degree at the end of the Spring Quarter in mid-June. The final deadline by which the thesis must be submitted to the faculty adviser and to the Director of Digital Studies is June 15, in time for the student to receive the MA degree at the end of the Summer Quarter in late August.

• Students who have not completed a thesis by May 15 may still participate in the June Convocation (https://convocation.uchicago.edu/), provided that they have fulfilled all other degree requirements; however, they will not receive the MA degree until the thesis has been completed and deemed acceptable.
• Students who submit a thesis by May 15 are eligible to graduate with the MA degree in mid-June, if the thesis is deemed acceptable. However, many students will require more time to complete the thesis and will submit it by June 15 in the expectation of receiving the MA degree at the end of the Summer Quarter.
• Students do not need to register for any courses in the Summer Quarter and they are not required to be in residence in the Chicago area while they complete the thesis.

ADMISSION
The Master of Arts in Digital Studies of Language, Culture, and History program welcomes a cohort of students dedicated to exploring humanistic knowledge in the digital realm.

INFORMATION ON HOW TO APPLY
The application process for admission and financial aid for all graduate programs in the Humanities is administered through the divisional Office of the Dean of Students. The Application for Admission and Financial Aid, with instructions, deadlines and department specific information is available online at: http://humanities.uchicago.edu/students/admissions (http://humanities.uchicago.edu/students/admissions/).

Questions pertaining to admissions and aid should be directed to humanitiesadmissions@uchicago.edu or (773) 702-1552.

International students must provide evidence of English proficiency by submitting scores from either the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS). (Current minimum scores, etc., are provided with the application.) For more information, please see the Office of International Affairs website at https://internationalaffairs.uchicago.edu, or call them at (773) 702-7752.

Further information is available at https://digitalstudies.uchicago.edu/application (https://digitalstudies.uchicago.edu/application/)

CONTACT INFORMATION
• digitalstudies@uchicago.edu
• (773) 702-1552
DIGITAL STUDIES COURSES

DIGS 30000. Introduction to Computer Programming for Digital Studies MA Students. 000 Units.
This is a three-week intensive non-credit course that is offered in September, before the Autumn Quarter. It provides an introduction to computer programming and computational concepts using the Python programming language. It is a prerequisite for the other Digital Studies core courses (students who are already experts in Python may request an exemption from taking this course, subject to the approval of the Director of Digital Studies). The intensive version of this course in September is primarily intended for incoming students in the one-year Digital Studies MA program, who are given priority in enrollment. Space permitting, however, it is open to undergraduate and graduate students in other programs (undergraduates will enroll via the Summer Session using the DIGS 20001 course code while graduate students will enroll using the DIGS 30000 course code). However, students who are not in the one-year Digital Studies MA program should plan to take the non-intensive version of this course in the Spring Quarter (DIGS 20001/30001). Students in the joint BA/MA program in Digital Studies are encouraged to take the non-intensive version of this course in the Spring Quarter but they have the option of taking it in September, if necessary.
Terms Offered: Autumn. Offered in September, before the Autumn Quarter.

DIGS 30001. Introduction to Computer Programming. 100 Units.
This course provides an introduction to computer programming and computational concepts using the Python programming language. It is a prerequisite for many of the other Digital Studies core courses (students who are already experts in Python may request an exemption from taking this course, subject to the approval of the Director of Digital Studies). The textbook for this course is Think Python (second edition) by Allen B. Downey, which is available online, free of charge. The Spring Quarter version of this course is open to all undergraduate and graduate students; however, students doing the undergraduate Minor or the joint BA/MA in Digital Studies are given priority in enrollment. An equivalent but accelerated course (DIGS 30000) is offered in September for incoming students in the one-year Digital Studies MA program.
Terms Offered: Spring Summer. DIGS 20001/30001 is offered every Spring Quarter as a full-length course and in Summer as an intensive three-week course in the September term.
Equivalent Course(s): DIGS 20001

DIGS 30002. Data Analysis for the Humanities I. 100 Units.
This course provides an introduction to statistics and computational data analysis. Topics covered include probability, distributions, and statistical inference, as well as linear regression and logistic regression. Students will learn how to use Python libraries for statistics and plotting within Jupyter Notebooks. The textbook for this course is OpenIntro Statistics, which is available online, free of charge. Students who have taken the University of Chicago course STAT 22000 or an equivalent statistics course may request an exemption from taking this course, subject to the approval of the Director of Digital Studies. Prerequisite: DIGS 20001/30000/30001, “Introduction to Computer Programming” (or equivalent expertise in Python).
Terms Offered: Autumn
Prerequisite(s): DIGS 20001/30000/30001, “Introduction to Computer Programming” (or equivalent expertise in Python)
Equivalent Course(s): DIGS 20002

DIGS 30003. Data Management for the Humanities. 100 Units.
This course introduces concepts and techniques related to the representation and management of digital data, with emphasis on the forms of data encountered in the humanities. Topics covered include: (1) digital text encoding using the Unicode and XML standards, with attention to the TEI-XML tagging scheme of the Text Encoding Initiative; (2) digital typefaces (“fonts”) for displaying encoded characters; (3) digital encoding of 2D images, 3D models, sound, and video; (4) database models and querying languages (especially SQL for relational databases and SPARQL for non-relational RDF-graph databases), with attention to methods for integrating and querying the kinds of semi-structured and heterogeneous data characteristic of the humanities; (5) ontologies, the Semantic Web, and related technical standards; and (6) cartographic concepts (e.g., coordinate systems and map projections) and the basics of geospatial data management using Geographic Information Systems. This course has no prerequisite; i.e., prior knowledge of computer programming is not required.
Terms Offered: Autumn
Prerequisite(s): DIGS 20001/30000/30001, “Introduction to Computer Programming” (or equivalent expertise in computer programming)
Equivalent Course(s): DIGS 20003

DIGS 30004. Data Analysis for the Humanities II. 100 Units.
This course builds on DIGS 20002/30002, “Data Analysis for the Humanities I,” by introducing students to the R language and R packages for data analysis. Topics covered include data mining, data visualization, and high-performance computing techniques for analyzing large datasets. This course provides a high-level conceptual introduction to machine learning, social network analysis, and spatial data analysis. The goal is to make students familiar with these methods and aware of their role in linguistic, cultural, and historical studies, as a basis for further study of these methods.
Terms Offered: Winter
Prerequisite(s): DIGS 20001/30000/30001, “Introduction to Computer Programming” (or equivalent expertise in computer programming) and DIGS 20002/30002, “Data Analysis for the Humanities I” (or equivalent statistics course)
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Equivalent Course(s): DIGS 20004

DIGS 30005. Data Publication for the Humanities. 100 Units.
This course introduces software techniques and tools for building Web browser apps written in HTML5, CSS, and JavaScript with emphasis on user interfaces for presenting information to researchers and students in the humanities. Topics covered include: (1) the use of application programming interfaces (APIs) to integrate into Web apps the various analysis, visualization, and database services provided by external systems; (2) the transformation of data into formats appropriate for publication on the Web; and (3) the use of persistent identifiers for reliable citation of published data and the problems of archiving and preserving scholarly data.
Terms Offered: Winter
Prerequisite(s): DIGS 20001/30000/30001, “Introduction to Computer Programming” (or an equivalent course in computer programming)
Equivalent Course(s): DIGS 20005

DIGS 30006. Natural Language Processing. 100 Units.
This course introduces software techniques and tools for natural language processing (NLP) using Python. Topics covered include a review of character-string processing and NLP methods for part-of-speech tagging, lemmatization, morphological segmentation, sentence splitting, named entity recognition, co-reference resolution, sentiment analysis, and topic modeling. This course also provides a high-level conceptual overview of recent work in machine translation via neural networks and deep learning.
Terms Offered: Spring
Prerequisite(s): DIGS 20001/30000/30001, “Introduction to Computer Programming” (or equivalent expertise in Python) and DIGS 20002/30002, “Data Analysis for the Humanities I” (or an equivalent statistics course)
Equivalent Course(s): DIGS 20006

DIGS 30007. Introduction to Digital Humanities. 100 Units.
This course surveys the history and theory of digital computing, the use of computers in the humanities, and recent debates in digital humanities. Topics discussed include the impact of digital media in modern culture, the philosophical questions raised by artificial intelligence (AI), and the ethical dilemmas created by the pervasive use of software. This course has no prerequisite; i.e., prior knowledge of computer programming is not required.
Instructor(s): David Schloen
Terms Offered: Autumn
Equivalent Course(s): DIGS 20007

DIGS 30008. Thesis Preparation. 000 Units.
Digital Studies MA and BA/MA students will enroll in this non-credit course in the Spring Quarter, when they begin work on their MA thesis projects in consultation with a faculty adviser and with staff members who will provide technical advice, as needed. The thesis must have a software component as well as a written component in which the student explains the computational aspects of the project and reflects critically on the methods being used, with attention to current debates in digital humanities.
Terms Offered: Spring

DIGS 30011. Introduction to Digital History I. 100 Units.
What is digital history and how do we do it? This lab-based experimental class will devote two sessions each week to questions of theory and methodology, considering what digital approaches can offer to the field of history; we will also examine and critique recent work by historians engaging with digital methods. In the third meeting of the week, a mandatory Friday lab session, students will learn the basics of digital mapping, network analysis, text mining, and visualization. (No prior technical knowledge is needed or expected.) By the end of the quarter, students will be asked to reflect on the advantages and limits of digital approaches in the historical field and to develop a proposal for a digital project of their own. Students who wish to see this work to fruition are invited to enroll in “Introduction to Digital History II,” which will offer students more advanced technical training and will coach them toward completion of their projects.
Instructor(s): F. Hillis
Terms Offered: Autumn
Note(s): Making History courses forgo traditional paper assignments for innovative projects that develop new skills with professional applications in the working world. Open to students at all levels, but especially recommended for 3rd- and 4th-yr students.
Equivalent Course(s): DIGS 20011, HIST 29530, HIST 39530

DIGS 30012. Introduction to Digital History II. 100 Units.
This course focuses on advanced research design and methods in digital history for students who have completed “Introduction to Digital History I.” The course will culminate in a public exhibition of student projects.
Instructor(s): F. Hillis
Terms Offered: Winter
Prerequisite(s): HIST 29530, HIST 39530, DIGS 20011, or DIGS 30011.
Note(s): Making History courses forgo traditional paper assignments for innovative projects that develop new skills with professional applications in the working world. Open to students at all levels, but especially recommended for 3rd- and 4th-yr students.
Equivalent Course(s): HIST 39521, HIST 29531, DIGS 20012

DIGS 30013. Graduate Computational Linguistics. 100 Units.
This course is a graduate-level introduction to topics at the intersection of computation and language. We will study computational linguistics from both scientific and engineering angles: the use of computational modeling
to address scientific questions in linguistics and cognitive science, as well as the design of computational systems to solve engineering problems in natural language processing (NLP). The course will combine analysis and discussion of these approaches with training in the programming and mathematical foundations necessary to put these methods into practice. The course is designed to accommodate students both with and without prior programming experience. Our goal is for all students to leave the course able to engage with and critically evaluate research in cognitive/linguistic modeling and NLP, and to be able to implement intermediate-level computational models for novel computational linguistics research.

**Instructor(s):** J. Goldsmith  
**Terms Offered:** Spring  
**Prerequisite(s):** CMSC 12200, 15200 or 16200, or by consent

**Equivalent Course(s):** LING 38600, CMSC 35050

**DIGS 30015. Musical Robotics. 100 Units.**

Musical Robotics is a skills and discussion-based class for students interested in learning analog and digital electronics to build robust musical instruments or sound art installations. Discussions will be organized around readings related to art and technology with a special focus on sound-based works. Students will learn to program Arduinos to control DC motors, solenoids, and servos with music applications like Logic Pro and Max/MSP. As a final project students will present a new instrument they’ve created or plans for an art installation featuring a kinetic sculpture element.

**Instructor(s):** Bryan Jacobs  
**Terms Offered:** Autumn  
**Prerequisite(s):** For this advanced course, a background in low-level, functional, or graphical (Max/MSP, PD) computer programming is assumed. It is also assumed that students have done some work to develop musical ideas or worked towards developing an aesthetic perspective.

**Equivalent Course(s):** DIGS 20015, MUSI 36620, MAAD 26720, MUSI 26720

**DIGS 30017. Latinx Lives: Finding and Filling the Gaps. 100 Units.**

The first half of the course will focus on postcolonial and decolonial theoretical approaches to the digital humanities, such as Roopika Risam, Antonio A. Casilli, and Lorena Gauthereau. Students will have two main digital projects: creating a Wikipedia page of a digital archive and a short podcast on said Latinx project. Considering this framework, students will analyze how current digital projects have worked with archival sources to fill historical gaps. This course will utilize accessible materials written by Latinx communities that non-profit organizations, such as Arte Público Press, and a range of universities have recovered in digital projects. The course will explore the intersection between oral histories, storytelling, audio-documentaries, and digital studies. Students will learn to use existing digital archives responsibly, craft an audio-documentary with their current digital tools, and analyze the existing boundaries between history and fiction in digital projects.

**Instructor(s):** Jessica Marroquín  
**Terms Offered:** Winter  
**Note(s):** Taught mostly in Spanish, with readings in English. Students will need a computer and recording device (a mobile phone should work). Undergrads must be in their third or fourth year.

**Equivalent Course(s):** SPAN 22021, LACS 32021, LACS 22021, DIGS 20017, SPAN 32021

**DIGS 30018. Digital Approaches to Text Analysis: opening new paths for textual scholarship. 100 Units.**

The purpose of this course is to introduce students of literature, and more generally the humanities, to digital humanities methodologies for the study of text. Among the various digital approaches which will be introduced in class are concordances (retrieving occurrences of words), semantic similarity detection (finding similar passages across texts), sentiment analysis, stylometry (analysis of literary style), and topic modeling (automatic classification of texts). The course will highlight how these approaches to text can provide new avenues of research, such as tracing intellectual influence over the longue durée, or uncovering the distinguishing stylistic features of an author, work, or literary movement. Students need no prior knowledge of such methods, and the course will aim at providing the basics of computer programming in Python to give students the necessary tooling to conduct a digital humanities project. The source material for the course will be drawn from literary sources, and students will be free (and encouraged) to use texts which are relevant to their own research interests.

**Instructor(s):** Clovis Gladstone  
**Terms Offered:** Winter  
**Note(s):** Students will need to bring a laptop to class.

**Equivalent Course(s):** DIGS 20018, RLLT 24500, RLLT 34500

**DIGS 30019. Classification as World-Making. 100 Units.**

To classify,” write Geoffrey Bowker and Susan Star, “is human.” There can be no doubt that classification sits at the heart of almost any form of knowledge production—arguably even thought itself. But what diversity hides under such atrausm? This course will explore a set of exemplary fields in order to track genealogies and discontinuities in classificatory. We will begin with two philosophers, Aristotle and Kant, who stand as respective avatars of ancient and modern categorical thought. We will then proceed to sites where classification has flourished: the biological sciences which sought to capture the diversity of the living world; the social sciences—notably anthropology—which challenged the universality of Western cultural categories; and statistics or data science, which seek to understand numerical aggregates as categories. We will conclude by reflecting on the present explosion of digital techniques of classification, from social media algorithms to artificial intelligence, which structure more and more of our lives, often without human oversight. In this sense, classification is perhaps nonhuman as well. Moving between history, epistemology, and practice, this course will furnish students with a rich set of classificatory ideas that they can bring to their own research and disciplinary
communities. Above all, it will ask students to account for both the construction and effects of categories, which are too often taken to be a neutral substrate of knowledge or conve
Instructor(s): Alexander Campolo Terms Offered: Spring
Equivalent Course(s): KNOW 36065, HIPS 26065, CHSS 36065, SCTH 36065, SOCI 30331, DIGS 20019

DIDS 30031. Digital Texts I: Opening New Paths for Textual Scholarship. 100 Units.
The purpose of this course is to introduce students in the humanities to digital methodologies for the study of text. Students will not only learn how to construct a digital text collection, but also how to process text as data. Among the various digital approaches which will be introduced in class are concordances (retrieving occurrences of words), semantic similarity detection (finding similar passages across texts), sentiment analysis, or stylometry (analysis of literary style). The course will highlight how these approaches to text can provide new avenues of research, such as tracing intellectual influence over the longue durée, or uncovering the distinguishing stylistic features of an author, work, or literary movement. Students need no prior knowledge of such methods, and the course will aim at providing both the basics of computer programming in Python and to give students the necessary tooling to conduct a digital humanities project. The source material for the course will be drawn from literary sources, and students will be free (and encouraged) to use texts which are relevant to their own research interests. Students will need to bring a laptop to class.
Instructor(s): Gladstone, Clovis Terms Offered: Winter
Equivalent Course(s): RLLT 24550, RLLT 34550, DIGS 20031

DIDS 49900. Reading and Research. 100 Units.
Reading and Research
Instructor(s): David Schloen Terms Offered: Spring