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

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

PEOPLE

- Faculty Director: David Schloen
- 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 humanistic social sciences. This program provides students with a solid grounding in computational methods and their use in the humanities while allowing flexibility to explore a particular interest in an area such as computational linguistics, digital literary studies, digital arts and media studies, digital history, digital philology, or digital archaeology and art history.

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 a deeper understanding of the history and cultural implications of digital computing 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.

The MA in Digital Studies is a stepping stone to a number of different careers that require a combination of computing skills with an education in the humanities through which students will have acquired much-needed skills in writing and critical thinking. Graduates of this program are eligible for non-academic jobs in software development or in software-related marketing, communications, and technical writing; or they may pursue doctoral studies in order to apply their computational skills to research and teaching; or they may take on an academic support role in digital humanities at a college, university, or cultural institution.

DEGREE REQUIREMENTS

The MA program in Digital Studies of Language, Culture, and History is a one-year program in which students take 11 courses (9 for credit and 2 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.
- 1 thesis preparation course (non-credit) that entails regular meetings with a faculty adviser.
- completion of the MA thesis project no later than July 31 for graduation at the end of the Summer Quarter.

SEPTEMBER (BEFORE THE START OF THE AUTUMN QUARTER)
- DIGS 30000. 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

**Spring Quarter**
- DIGS 30006 Natural Language Processing
- DIGS 30008 Thesis Preparation
- Approved elective
- Approved elective

**Summer Quarter**
- Completion of the MA thesis project, which must be submitted to the faculty adviser and to the Director of Digital Studies by **July 31** in order for the student to graduate with the MA in Digital Studies at the end of the Summer Quarter.
  - Students may participate in the June Convocation (https://convocation.uchicago.edu/) at the end of the Spring Quarter provided that they have fulfilled all of their MA degree requirements except for the thesis, but they will not receive the MA degree until the MA thesis has been completed and deemed acceptable.
  - Students who complete the MA thesis early and submit it by **May 15** are eligible to graduate with the MA degree in June; however, most students will require more time to complete the thesis and will submit it by July 31 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 their MA thesis projects.

**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.

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.

**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.

**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 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 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 with emphasis on linguistic, cultural, and historical data. Programming exercises in Python will help students build on what they learned in DIGS 20001/30000/30001. Digital Studies MA 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.

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 linguistic, cultural, and historical research. 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, both relational and non-relational, with attention to methods for integrating and querying semi-structured and heterogeneous data; (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.

Terms Offered: Autumn

Prerequisite(s): DIGS 20001/30000/30001, “Introduction to Computer Programming” (or an equivalent course 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 an equivalent course in computer programming) and DIGS 20002/30002, “Data Analysis for the Humanities I” (or an equivalent statistics course)

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
D"G 30007. Introduction to Digital Humanities. 100 Units.
This course is a discussion-oriented seminar that introduces students to theoretical debates in digital humanities, broadly defined, with attention to underlying philosophical issues. It touches upon the history and theory of digital computing within its social and institutional settings, as well as the history of the application of digital computing to texts, images, sound, geospatial data, and other information relevant to cultural and historical studies. Among other topics, this course introduces students to debates about the cultural impact of digital media and about ethical issues related to the ownership, accessibility, and legitimate uses of digital data.
Terms Offered: Autumn
Prerequisite(s): DIGS 20001/30000/30001, "Introduction to Computer Programming" (or an equivalent course in computer programming)
Equivalent Course(s): DIGS 20007

D"G 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

D"G 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

D"G 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 29531, DIGS 20012, HIST 39521

D"G 30013. Computational Linguistics. 100 Units.
This course introduces the problems of computational linguistics and the techniques used to deal with them, focusing primarily on probabilistic models and techniques. Topics are drawn primarily from phonology, morphology, and syntax. Special topics include automatic learning of grammatical structure and the treatment of languages other than English.
Instructor(s): J. Goldsmith Terms Offered: Spring
Prerequisite(s): CMSC 12200, 15200 or 16200, or by consent
Equivalent Course(s): LING 38600, CMSC 35050

D"G 30014. 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. Students will need to bring a laptop to class.
Instructor(s): C. Gladstone Terms Offered: Winter
Equivalent Course(s): RLLT 34500, RLLT 24500
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 robotic 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): MUSI 36620, MAAD 26720, MUSI 26720, DIGS 20015

DIGS 30016. Data: History and Literature. 100 Units.
Data is a notion that seems to characterize our contemporary world. Digital revolutions, artificial intelligence, and new forms of management and governance all claim to be data-driven. This course traces the origins of these trends to the nineteenth century, when new statistical knowledges and literary traditions emerged. Moving across disciplinary boundaries, we will analyze the ways in which practices of observation and calculation produced data on populations, crime, and economies. Likewise, the literature of this period reflected the ways that data shaped subjective experience and cultural life: the rise of the detective novel transformed the world into a set of signs and data points to interpret, while Balzac’s Human Comedy classified individuals into types. Drawing on these historical and humanistic perspectives, students will have the opportunity to measure and analyze their own lives in terms of data-as well as think critically about the effects of these knowledge practices.
Instructor(s): Alexander Campolo, Anastasia Klimchynskya Terms Offered: Autumn
Note(s): undergrads permitted with permission of instructors
Equivalent Course(s): STAT 36711, SOCI 20518, HIPS 22011, KNOW 22011, CHSS 32011, ENGL 32011, SCTR 32011, SOCI 30518, KNOW 32011, PPHA 32011

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