Course number and title: IM-UH 1511-001 Digital Humanities

Credits: 4.0; **Prereqs:** None

Faculty: Moses Boudourides

Office: ERB 1-137**; Office Hours:** 4-5 Tuesday and Thursday

Course description:

The aim of this course is to explore the history, current debates, methods and techniques, which are developed and used in the emerging field of Digital Humanities. This is an interdisciplinary field, where Sciences and Humanities meet and provide the opportunity for collaboration between scholars coming from traditionally disparate disciplines. However, through the disciplinary intersections in the study of Digital Humanities, on the one side, computational methodologies coming from Computer Science, Mathematics, Physics, Engineering, Geography, Social Science etc. might be applied to and enrich the scope and horizons of the work done in Humanities, in a variety of fields, such as History, Literature, Languages, Philosophy, Religion, the Arts etc., by incorporating in the latter areas some of the computational-scientific progress and advances made during the ongoing Digital Era. On the other side, it is through Digital Humanities that the humanistic ideal can nowadays diffuse and proliferate inside the enclaves of Sciences and in particular the so-called "Hard Sciences," which are traditionally described as pursuing a positivist approach to the discovery of "facts" using rigorous rational methodologies. Therefore, students from either Humanities or Sciences might profit by following the Digital Humanities course, the aim of which is to relax and possibly open up existing solid disciplinary divisions and misunderstandings and to create bridges between disparate approaches towards truth having a common universal goal, the forward movement of knowledge and Science in the service of all Humanists.

The course has no prerequisites, nor does it require any technical/computational skills, though one of the objectives of the course is a practical and experimental engagement with key aspects of computational practices applied and developed in Digital Humanities. For this purpose, the programming language Python (but also at

some degree R) will be used as a tool for implementing elementary computations in Digital Humanities. Students do not need to know Python or to possess major skills with computing. They will only have to install the Jupyter Notebook application on their computers so that they might be able to use computations that will be already coded and provided by the professor. In the first two weeks of the course, students will be guided through the required installation and use of Jupyter Notebooks.

Learning outcomes:

By the end of this course, students will have:

- Become familiar with a number of different qualitative or computational methodologies, which are applied to various problems in Digital Humanities.
- Appreciated the disciplinary advantages that Digital Humanities might provide to Science as a dynamic area of meaningful and useful collaborative work among scholars and practitioners possessing different skills and capacities.
- Learned how data from Humanities can be analyzed by using tools from Computational Science and Social Science.
- Conceptualized ways and procedures through which they might further advance the scope of their major field of studies by borrowing ideas about how Digital Humanities has managed to promote and orchestrate a multifaceted and interdisciplinary educational experience.

Teaching and learning methods:

Each week will be divided in two parts:

. Lecture and discussions.

. Computational experimentation.

During the first part, the instructor will be delivering lectures and engaged in discussions with students answering questions or suggesting further literature to those interested in going in those directions. Moreover, in the first part, there will be an introduction to the weekly assignment and guidance to its implementation. The second part will include a demonstration of various exploratory computations,

visualizations, simulations and experiments illustrating from a practical point of view the week's discussion topics and also covering further assistance to the implementation of that week's assignment. During both parts, students will be prompted to develop topics for critical discussion and debate and will practice related computational methodologies by running examples of these computations on their own laptops (or possibly at a computer lab).

Mostly Python (but also at some degree R) will be used as a tool for the implementation of the Digital Humanities computations in the course. Students do not need to know Python (or R) or to possess major skills with computing. Those interested in being involved with Digital Humanities computations are only expected to install the application of Jupyter Notebook (through Anaconda Python https://www.anaconda.com/distribution/) on their computers so that they might be able to use all the computations for the course, which will be already coded and provided by the instructor. In the first two weeks of the course, students will be guided how to make the required installation in their own computers, how to access (through Github) and how to use the course material in the form of Jupyter Notebooks. The students will also be required to work on a team project during the semester and to present it in front of the class the last day of the course. They would also be asked to submit a written report of their project so that they might be able to achieve a deeper understanding of the course's main topics and to improve their writing and presentation skills.

Over the course of the semester, students will also be required to work on a team project and present it in front of the class on (or around) the last day of the course during the IM End of Semester Showcase. Students will also be asked to submit individual written reports of their project in order to achieve a deeper understanding of and ability to explain the course's main concepts.

Course materials:

The course textbooks are:

- Gardiner, E., & Musto, R.G., *The Digital Humanities: A Primer for Students and Scholars*, Cambridge University Press, 2015.
- Graham, S., Milligan, I., & Weingart, S., *Exploring Big Historical Data: The Historian's Macroscope*, Imperial College Press, 2016.

Suggested reading (for class discussions):

- Gold, M.K., & Klein, L.F., Editors, *Debates in the Digital Humanities 2019*, University of Minnesota Press, 2019.
- Burdick, A., Drucker, J., Lunefeld, P., Presner, T., & Schnapp, J., *Digital_Humanities*, The MIT Press, 2016.
- Dobson, J.E., *Critical Digital Humanities: The Search for a Methodology*, University of Illinois Press, 2019.
- Terras, M., Nyhan, J., & Vanhoutte, E., Editors, *Defining Digital Humanities: A Reader*, Ashgate, 2013.
- Drucjer, J., Kim, D., Salehian I., & Bushong, A., *Introduction to Digital Humanities: Course Book*, 2014 (http://dh101.humanities.ucla.edu/).
- Berry, D.M., & Fagerjord, A., *Digital Humanities: Knowledge and Critique in a Digital Age*, Polity, 2017.
- Rogers, R., *Digital Methods*, The MIT Press, 2013.

Assignments:

The course entails two types of assignments:

- Reading assignments.
- Homework.

The reading assignment will correspond to selected chapters or sections from the course textbooks and the suggested reading. Moreover, there will be some other auxiliary material (in the form of slides, publications or excerpts from various published volumes) that will be given the week before the one it will be discussed in

class. *The due date for students finishing the reading assignment will be on every Monday during the semester (or the day before the first session of the course)*, as this is the material that will be presented, discussed and used in computational explorations during that week.

The Homework is of one of the following:

- Written essay.
- Computational experiment.

The written essay (10,000 words long) will be on a topic of the reading assignment that will be selected by the student, while the tutor will be providing further literature. The computational experiment will be given (by the tutor) as a Jupyter Notebook, which will include the Python code for the implementation of various elementary computations and visualizations of Digital Humanities. Students are not expected to be able to program in Python. During the first two weeks of the course, instructions will be given to install and use Jupyter Notebooks in their own laptops or personal computers. In every week's Jupyter Notebook of the computational assignment, students will be asked to work (meaning to re-run) the existing (already coded) computations in the Notebook possibly changing a few parameters in the exhibited code (mostly about display features of graphics or visualizations). In this way, though their work on the Jupyter Notebooks of the assignments, students are expected to experiment with a number of computational scenarios discussed during the lecture part and, eventually, to reach the goal of "learning by doing" in order to be able to master the learning objectives of the course. *The homework assignments will be due on every Thursday during the semester* and they will be submitted electronically (through the NYU Classes).

Team Final Project:

There will be no final written exam. Instead students are expected to complete a final project. This will be a team project in groups of three students. The topics of the project will be introduced during the course overview in the first week and further discussed in the second week. The teams of students should be formed before the third week. Depending on the topic of the project, most of the course homework will

scaffold up toward the final project. The deliverables of the final project (*due the last week of the course*) are the following:

(i) A paper (report), double-spaced with a ten-page maximum, including (1) a summary and problem definition, (2) discussion of the research design, and, if the project is based on computational experiments, measurement and network methods employed, and overview of programming work, (3) review of results, and (4) the literature used in the project or covering similar investigations. The paper must be provided as an Adobe Acrobat pdf.

(ii) In case the project involves computations, he dataset (possibly) used in the project and the complete program code in Python in a Jupyter Notebook.

Selected papers of the students' final projects (possibly all of them) will be presented at an open event after the last week of the course (probably during the scheduled exam time) and they will be posted on the web.

Grading:

The final grade will consist of the following:

- Class participation: 10%
- Homework: 50%
- Team final project: 40%

Tentative course schedule:

Week 1: The Digital Era in Humanities

Week 2: Humanities Computing vs. Social Computing

Week 3: Concepts and Tools from Data Analysis

Week 4: Concepts and Tools from Text Analysis

Week 5: Text Mining from Online Data

Week 6: Clustering, Classification and Topic Modeling

Week 7: Concepts and Tools of Data Visualization

Week 8: Fundamentals of Network Analysis

Week 9: Network Analysis in Digital Humanities

Week 10: Concepts and Tools from Scientometrics and Bibliometrics

Week 11: Word-Nets from Literary Text

Week 12: GIS Mapping in Digital Humanities

Week 13: Narrative, Plot and Network Navigation: from Moretti to Latour

Week 14: Critical Issues and Debates on Digital Humanities