

# Northeastern University

## College of Computer and Information Science



### **City of Boston: An Interdisciplinary Paired Course**

In Fall of 2016, Northeastern University will pilot a paired course offering of our Introduction to Computer Science with a new course: “City of Boston.” This combined approach will include readings and discussions on Boston history, demography, environment, politics and culture, as well as exercises using digital tools and data analysis to address questions that humanities and social sciences approaches generate about Boston. The course will culminate in a group programming and writing project wherein students will use the skills learned in the City of Boston course in combination with skills learned in the paired Introduction to CS course. Four Social Sciences and Humanities faculty will bring aspects of their research expertise into the design of the City of Boston course, using big data in criminal justice, political participation, textual analysis, and mapping.

In keeping with Northeastern University’s emphasis on experiential learning, the City of Boston course is a core case study. Students will observe how the actions, relationships, and culture of urbanites interact with and reflect the local geography, history, literature, politics and institutions. Students will develop and practice experiential skills by exploring these real-world examples with a combination of digital data and artifacts from various sources, as well as in-person site visits to expose them to the real-life dynamics of Boston. They will learn how to use new technologies to integrate and present many angles on the city, as well as develop research projects for their own fields and topics of interest. Finally, as a semester-end capstone project, students will analyze a particular dataset to evaluate a unique aspect of city of Boston data, *using a program that they themselves write*. The capstone coding program offers students a meaningful project from a field that they may not have considered before.

The goal of the proposed interdisciplinary bridge is to attract and retain diverse students into CS minors and majors. This goal includes not only the diversity of thought that Social Science and Humanities students bring to the field, but also increased demographic diversity of women and underrepresented minorities. We believe that by making CS relevant to their core field, students will be attracted to try the introductory CS course. Furthermore, through its relevance to these students’ experiences and fields, the paired offering will retain students in the CS minor and perhaps even lead to a double major. Studies have shown that creating a cohort of students helps with both attraction and retention of under-represented groups; the proposed paired course creates such a cohort.

By combining “City of Boston” and computer science into a unified program, CCIS will better be able to reach and develop the diverse set of students that embody the Northeastern experience.