

## Catalog Description

Students prepare to execute a major professional project using urban analytic methodologies and communicate the project results in written, graphic, and public presentation formats.

## Course Overview

The Capstone Project provides an opportunity for students to engage in a professional project of appropriate scale focusing on an area of specialization within urban analytics. Capstone projects will be a practice-centered inquiry to integrate and extend the analytics skills developed during the course of the MSUA program. The capstone projects should bridge theory and practice and prepare students for professional endeavors at the start of their urban analytics careers. The aim of the course is to facilitate the development of these projects.

In some years the Capstone will be a group project for a specific client. In those years students will work as a team to develop joint deliverables. In other years students will develop individual projects built around research questions selected by the student and approved by a faculty advisor.

## Prerequisites

1. Students should have completed the CP 6960: Urban Analytics Capstone prep class. Students should also have knowledge of data science-related tools and techniques that will be applied in their capstone project. It is also expected that students have developed a plan for completing the capstone in the capstone prep class and identified the relevant data sources to successfully complete the project within the summer semester.

## Course Materials and Texts

2. Almost all the required readings will be made available on the CANVAS site for the course. Students are also expected to be familiar with conducting a literature review. Chris Hart's book "Doing a Literature Review" is highly recommended for this purpose (Sage: 1998). Additionally, Kate L. Turabian's "Manual for Writers" (Ninth Edition 2018) is also highly recommended. Some of the material will be "live", that is, posted and discussed as events unfold or as they are found.

## Course Objectives

In this course, students will:

1. View urban analytics within a larger ethical framework including end-values such as sustainability and social justice
2. Recognize specific analytics-related ethical issues such as privacy and transparency
3. Be familiar with standard analytics project management practices
4. Learn large-project data design and data model development
5. Understand the system requirements development process

6. Apply a full range of technical and management skills to a large-scale project
7. Write a project report in a standard format
8. Effectively present a project in a group setting, a talking–point poster, and an online application|

### **Project deliverables**

All individual capstone projects must produce four deliverables:

- a capstone project paper of approximately 20-30 pages in length, including (at a minimum) these elements:
  - project abstract
  - presentation of the problem, topic, or research question being addressed
  - justification of why the project matters
  - review of the academic and professional literature
  - explanation of the data utilized and methods applied
  - discussion of the analysis results
  - description of the larger significance of the project
- a 10-12 minute PowerPoint presentation of the project
- an online presentation of the project
- a printed E-size poster summarizing the project (optional)

Group projects will produce similar deliverables, but of an appropriate scale that reflects the size and effort of the entire group.

### **Course Evaluation**

The three deliverables will be individually graded and weighted by the following formula:

<u>Component</u>	<u>Percentage of final grade</u>
Capstone project presentation	15%
Online project	25%
Capstone project report	60%

Group projects will receive a group grade for each component, but individual group member grades will be adjusted higher or lower based upon:

- Peer evaluation forms that allow each group member to provide quantitative and qualitative evaluations of all members of the group in terms of these questions:
  - Did this colleague (or you) contribute important or creative ideas?
  - Was this colleague (or you) cooperative and enjoyable to work with?
  - Did this colleague (or you) do his or her fair share of work?
  - Did this colleague (or you) fulfill his or her responsibilities with quality work?
  - Did this colleague (or you) fulfill his or her responsibilities on time?

- Documented differential responsibilities of group members for different deliverables and portions of deliverables, and
- Project advisor observation of group interactions

### **Ethics and in-class conduct**

Your involvement in class discussions is essential to the pedagogic element of this class. Everyone should feel comfortable and unrestrained from expressing differing points of view, if necessary, in a manner that is non-threatening and non-personal.

All class participants should exercise utmost care in their use of others' ideas and ensure such ideas are duly acknowledged. Plagiarism is a serious offense at this Institute and if I detect any instance of plagiarism the perpetrator will be reported and given failing grades in the class. Please make sure that you are familiar with the Student Conduct Code <http://www.honor.gatech.edu/plugins/content/index.php?id=11>, as well as section XVI on "Cheating and Plagiarism" in your CRP Student Manual. If in doubt, please check with me.

This class has a zero-tolerance policy for cell phones, Internet surfing, and checking email in class. Laptops can be used for note taking. Cellphones should be out of sight and silenced.

### **ADA Accommodations**

If you require course adaptations or accommodations due to a disability, if you have emergency medical information that I should be aware of, or, if you need special arrangements in the event the building must be evacuated, please contact the Office of Disability Services (404-894-2563) as soon as possible to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.

### **Recordings of Class Sessions and Required Permissions:**

Classes may not be recorded by students without the express consent of the instructor unless it is pursuant to an accommodation granted by the Office of Disability services. Class recordings, lectures, presentations, and other materials posted on Canvas are for the sole purpose of educating the students currently enrolled in the course.

### **Student-Faculty Expectations Agreement**

At Georgia Tech, we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. The Student-Faculty Expectations articulate some basic expectations that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.