

## INTA 4803/6450: Data Analytics and Security Syllabus

Fall 2026

**Instructor:** Austin Beacham  
**Email:** austinbeacham@gatech.edu

### Course Description

The use of data analytics has exploded across almost every facet of life, from private businesses to policymaking to academic research. We have new techniques and methods to answer questions both old and new.

This course has two primary objectives. First, it introduces students to a wide range of methods and tools for empirical data analysis in social science research. Second, it aims to develop students' skills in identifying good social science research questions and creating research designs that can best answer those questions, particularly focused on research topics related to Comparative Politics and International Relations. In other words, the goal of the course is to help you identify good questions to ask about the social world, and know what methods you can use to answer those questions. Examples of tools that we will discuss include geospatial data analysis, remote sensing, text as data, large language models (LLMs), and visual analytics. To be clear, you are not expected to master any of these tools, but rather become familiar with them enough to be able to more easily apply them in your own life should you choose to dedicate more time to them. We will also be reading and discussing published academic research that uses the methods that we will learn, to provide students examples of what research can look like.

### Learning Outcomes

By the end of this seminar, students will:

- Be proficient in the basics of analysis of social science data using a number of tools
- Be able to identify good research questions and designs
- Be able to clearly and effectively communicate their results
- Have the necessary knowledge to take additional seminars on more advanced topics not offered by the Nunn School.

### Required Course Materials

There are no required textbooks for this course. I will provide PDFs for all articles that are assigned, which are available through the Georgia Tech library. I will note that this course is relatively light on reading, so students are expected to read **in full, before class**, and to **carefully think** about the research design and methods used in the articles. Also note that I will sometimes only assign part of an article — pay close attention to the Canvas file name.

# Course Components and Grading

## Grading and Requirements

The course will consist of the following:

- 4 Homework Assignments (45% total)
- Research Project (40%)
- Participation (15%)

A $\geq$ 90; B $\geq$ 80; C $\geq$ 70; D $\geq$ 65

### 1. Homework assignments

The homework assignments are designed to ensure that students are staying up to date with the reading and understanding the course material. They also help me better tailor the rest of the course depending on how students perform. I will release the homework assignments two weeks before the due date to ensure that you have plenty of time to complete them. All assignments are to be submitted electronically through the Canvas course portal.

### 2. Research Project

Students will apply the tools from this course to identify a question related to Comparative Politics or International Relations that is interesting to them. They will describe their theorized answer to the question, and explain **in detail** how they would set up a research design to answer the question/test their theory. The research proposal should look like a fleshed out academic journal-style research article that is missing the results section (students may show preliminary results if they have them). This means that students should include descriptive visualizations of the data that they would analyze further in a full paper. Students may collect their own data or propose to use existing data in a novel way. As co-authorship is common in the field, students may form groups of no more than three co-authors to submit a single final paper. Expectations for polish and quality in co-authored papers will be commensurately higher. More detail will be given about the research project as the course progresses.

### 3. Participation and Attendance

This is an in-person course and as such there will not be remote attendance options nor recorded lectures (with some scheduled exceptions). We will have in-depth class discussions throughout the semester about research design and tools, as well as the specifics of individual articles that we read. I will provide multiple avenues to participate in these discussions. Students are expected to have completed the readings **prior** to class. Preparedness and level of engagement are both factors of the participation grade. I reserve the right to call on individuals at random or administer reading quizzes, although I prefer not to. Additionally, attendance is part of the participation grade. You are allowed three unexcused absences; after this, failure to attend will negatively impact your participation grade.

## Other Policies

### Late Assignments

Late homework assignments will be accepted with a 5 point (out of 100) reduction for each day that it is late, up to one week. Late research proposals cannot be accepted due to the turnaround time with final grading at the end of the semester. If you are sick or have extenuating circumstances, please let me know. I am happy to work with you if I am aware of issues ahead of time.

### Academic Integrity

Academic dishonesty in the form of cheating or plagiarism will not be tolerated. In brief, plagiarism is defined, for the purposes of this class, as: copying, borrowing, or appropriating another person's work and presenting it as your own in a paper or oral presentation, deliberately or by accident. Acts of plagiarism will be reported in accordance with the Honor Code. In order to avoid being charged with plagiarism, if you use the words, ideas, phrasing, charts, graphs, or data of another person or from published material, then you must either: 1) use quotation marks around the words and cite the source, or 2) paraphrase or summarize acceptable using your own words and cite the source. The plagiarism policy is not restricted to books, but also applies to video and audio content, websites, blogs, wiki's, and podcasts. Plagiarism includes putting your name on a group project to which you have minimally contributed. For information on Georgia Tech's Academic Honor Code, please visit <https://policylibrary.gatech.edu/student-life/academic-honor-code>. Any student suspected of cheating or plagiarizing on an assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations. The student will also receive a grade of zero on the assignment at the instructor's discretion. Note that generative AI content cannot be considered to be written by the student, and must be annotated as such. See more information in generative AI below.

### 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.

## **Accessibility Statement**

The Institute does not discriminate against individuals on the basis of race, color, religion, sex, national origin, age, disability, sexual orientation, gender identity, or veteran status in the administration of admissions policies, educational policies, employment policies, or any other Institute governed programs and activities. The Institute's equal opportunity and non-discrimination policy applies to every member of the Institute community. The Institute's affirmative action program, Title IX program, and related policies are developed in compliance with applicable law. Pursuant to Title IX, the Institute does not discriminate on the basis of sex in its education programs and activities. As such, the Institute does not tolerate any kind of gender-based discrimination or harassment, which includes sexual violence, sexual harassment, and gender-based harassment. Inquiries concerning the Institute's application of or compliance with Title IX may be directed to the Title IX Coordinator, Burns Newsome, [burnsnewsome@gatech.edu](mailto:burnsnewsome@gatech.edu), 404-385-5151.

## **Accommodation for Students with Disabilities**

Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must register with the Office of Disability Services at Suite 123, Smithgall Student Services Building, 353 Ferst Drive, 404-894-2563 (Voice); 404-894-1664 (TDD). For more information on Georgia Tech's policy on working with students with disabilities, please review the Office of Disability Service's web page at <http://disabilityservices.gatech.edu/>. The Office of Disability Services collaborates with students, faculty, and staff to create a campus environment that is usable, equitable, sustainable and inclusive of all members of the Georgia Tech community. Disability as an aspect of diversity that is integral to society and Georgia Tech. If students encounter academic, physical, technological, or other barriers on campus, the Disability Services team is available to collaboratively find creative solutions and implement reasonable accommodations. I am very happy to meet during my office hours to discuss your needs.

## **Use of Generative Artificial Intelligence (AI) Tools**

Students can employ AI (e.g., ChatGPT, Grammarly) or their peers as a limited tool to support their work, but not as a substitute for completing the assignment themselves. Note that there are several ethical and environmental reasons to be cautious with using generative AI, which we will discuss in class. I highly encourage independent thinking and idea generation in this course, even at the expense of perfect writing style or structure. However, I recognize that many of you incorporate AI into your study habits, so I am providing these guidelines. Students cannot use AI or peers to produce a full draft of an assignment, to produce drafts for sections of the assignment, nor for rewriting entire sentences or paragraphs. **Students also cannot use AI to summarize assigned readings rather than reading it for themselves.** Acceptable uses of AI include the following:

- *Identifying resources.* Students can use ChatGPT or similar platforms to identify a story or song for their presentation, as well as to identify non-fiction sources for the annotated bibliography/presentation. They should then locate those resources to read and integrate them on their own. Being able to read, understand, and consolidate information is a skill you must develop yourself. As such, students will and must be able to pinpoint and appropriately cite the original source of any statistics, quotations, or claims. AI platforms often fail to accurately document the source of information they provide; in this respect, these platforms do not constitute an acceptable source.
- *Light copy editing.* Students can use tools like Grammarly to check subject-verb agreement, punctuation, spelling, etc. However, they cannot use Grammarly or other AI tools to write or rewrite entire sentences or paragraphs. Learning to compile information and write competently is a skill you must develop for yourself.
- *Coding when the instructor has specifically stated it is fine to use.* We will discuss this more in class.

Any usage of AI must be noted within submissions, including both which AI resources were employed and how. **Students are advised to keep records of their work progress, including rough (unedited) drafts and/or AI transcripts, to demonstrate compliance with course policies** in case their work is flagged for a potential violation of academic integrity. Students may also be asked to discuss the ideas represented in their assignments to confirm that it represents original work.