



DSBA 5122: Visual Analytics Storytelling

Fall 2025

Ilieva Ageenko, PhD

Credits

3 Graduate Credits

Faculty Information:

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Course Content and Office hour details are accessible via Canvas

This syllabus contains the policies and expectations I have established for Visual Analytics Storytelling. Please read the entire syllabus carefully before continuing in this course. These policies and expectations are intended to create a productive learning atmosphere for all students. Unless you are prepared to abide by these policies and expectations, you risk losing the opportunity to participate further in the course.

Description:

This is a topics course, covering advanced topics in Data Science.

The Data Science cycle includes many phases, including problem definition, data acquisition, data engineering, analysis, reporting, interpreting, visualization, and presentation of the results of analysis/insights derived. The Visual Analytics Storytelling course covers the last two steps in this sequence. However, these steps are not simple. It is often the difference between successful and unsuccessful projects. Therefore, this class will be more comprehensive than the usual courses on storytelling that mostly focus on the best visual presentation of the results obtained through the analysis. It will focus on data/analysis interpretation, visualization, presentation, speaking, and situation awareness.

Course Objectives:

Students in this course will learn how to interpret data and results of analysis, select appropriate data and analysis presentation formats and visualizations, make effective data driven presentations, speak effectively in front of the audience, and understand group dynamics. While most presentations today focus on showing the data, students will learn storytelling with data.

Teaching Strategies:

Materials presented in this course will be covered through lectures, homework, in-class exercises and student presentations, and role playing.

Visualization Tools Prerequisites:

This course will focus on best practices that can be applied to any presentations, regardless of the use of various data visualization software tools. While specific software will not be covered in this course, it is expected that students have a foundational understanding of at least one data visualization tool and one analytical tool to be successful.

Students will learn how to tell effective data-driven stories. We will explore best practices for visual storytelling, the principles of design, and the ethics of data visualization. Our goal is to equip you with the skills to craft impactful data narratives, regardless of the software you choose to use.

There are many visualization tools available, including Tableau, Power BI, Looker, Google Data Studio, and D3.js, as well as open-source libraries in Python (such as Plotly and Altair) and R (such as ggplot2 and Shiny) for students to use. Remember, no matter how advanced a tool is, it will never know your data and your story the way you do.

Required Books:

Storytelling with Data: Let's Practice, Knaflic 2020

Reference Books (not required):

Storytelling with Data: A Data Visualization Guide for Business Professionals, Knaflic, Wiley, 2015

Data Points: Visualization that Means Something, Yau, Wiley, 2013

Even a Geek Can Speak: Low-Tech Presentation Skills for High-Tech People, Asher, Persuasive Speaker Press, 2001

The Exceptional Presenter Goes Virtual: Take Command of Your Message, Create and "in-Person" Experience and Captivate Any Remote Audience, Koegel, Greenleaf Group Press, 2010

Exceptional Presenter: A Proven Formula to Open Up and Own the Room, Koegel, 2007

Institutions:

<http://www.storytellingwithdata.com/>

<http://www.frameworksinstitute.org/>

<https://www.perceptualedge.com/>

Evaluation Methods:

Homework & Quizzes	20%
Big Idea Storytelling	10%
Midterm Presentations	15%
Case Study Deep Dive	15%
Final Group Project	40%

Grade Scale:

A = 90-100%

B = 80 - 90%

C = 70 - 80%

U = below 70%

Graduate Version: A, B, C, U

Late Homework and Assignments:

It is important to submit all assignments by the designated due dates and times to ensure timely feedback and progression through the course. The following penalties will be applied to late submissions:

- **1-2 hours late:** 25% deduction from the assignment's total grade.
- **After 12 hours late, up to 24 hours late:** 50% deduction from the assignment's total grade.
- **More than 24 hours late:** No credit will be given for the assignment.

Topical Outline of Course Content

1. Introduction to Analytical Storytelling
2. How the Brain Sees Data: Cognitive Aspects of Visualization
3. Crafting a Compelling Narrative: "Your Story"
4. Designing and Using Impactful Visuals
5. Mastering the Art of Delivering Presentations
6. Midterm Student Presentations
7. Building Engaging Interactive Dashboards
8. Developing a Cohesive Analytical Story
9. Innovating with AI for Presentation Development
10. Integrating Story, Visuals and Insights
11. Applied Case Study Deep Dive
12. Influencing through Storytelling
13. Final Group Project Showcases

Course Policies

Syllabus Changes:

The standards and requirements set forth in this syllabus may be modified at any time by the course instructor. Notice of such changes to this syllabus posted on the course Canvas website.

Attendance:

Students are expected to attend all class meetings and to arrive before the class starts. Class topics are integrated, with each week building on prior weeks. Failure to attend or to arrive on time can adversely affect individual performance, ability to contribute to the group project, and the earned letter grade. If a student misses a class due to work or other reasons, it is their responsibility to get notes from peers; instructors do not hold extra repeat class sessions.

I will conduct this class in an atmosphere of mutual respect. I encourage your active participation in class discussions. Each of us may have strongly differing opinions on the various topics of class discussions. The conflict of ideas is encouraged and welcome. The orderly questioning of the ideas of others, including mine, is similarly welcome. However, I will exercise my responsibility to manage the discussions so that ideas and argument can proceed in an orderly fashion. You should expect that if your conduct during class discussions seriously disrupts the atmosphere of mutual respect I expect in this class, you will not be permitted to participate further.

Students are encouraged to work directly with their instructors regarding class absences for medical appointments, military/court orders, and/or personal and family emergencies, such as a death in the immediate family, where a student is able to provide an instructor with appropriate supporting documentation of the absence. The final decision for approval of absences and missed work or make-up work is determined by the instructor.

The Office of Student Assistance and Support Services (SASS) can provide notification to faculty of emergency situations when a student is unable to do so and when the office has been made aware of such emergencies. In such situations, the SASS office may also be able to assist with verification of such emergencies once a student is able to return to classes. The SASS office does not provide verification of absences for car trouble, weather issues, personal activities, work, weddings, vacations, or University-sponsored events. Absences related to such activities should be discussed directly with the faculty member.

Should a student need assistance from the SASS office in verifying an emergency situation, they can submit an [online request form](#) and attach supporting documentation. Please note that students are not required to go through the SASS office at any time regarding absence verification, and the SASS office does not have the authority to excuse absences, allow for make-up work, or provide other academic accommodations.

In cases of absence due to pregnancy or parenting (pregnancy, childbirth, false pregnancy, termination of pregnancy, or recovery from any of these conditions), students should contact the Title IX Office to obtain absence verification by completing the form at <http://bit.ly/332eaGd>.

Out of Class Time Expectations:

Out-of-class work may include but is not limited to: required reading, written assignments, video presentation development and team participation and contribution.

Electronic Devices:

Students are not allowed to use any electronic devices during the class, unless otherwise instructed by the instructor.

Inclement Weather:

University Policy states the University is open unless the Chancellor announces that the University is closed. The inclement weather hotline number to call is 704-786-2877. In the event of inclement weather, check your email and NinerAlerts. The instructors generally only cancel class if the University is closed.

Self-Help:

It is common for college students to experience challenges that may interfere with academic success such as academic stress, sleep problems, juggling responsibilities, life events, relationship concerns, or feelings of anxiety, hopelessness, or depression. If you or a friend is struggling, we strongly encourage you to seek support. Helpful, effective resources are available on campus at no additional cost.

- Visit the Counseling and Psychological Services website at caps.charlotte.edu for information about the broad range of confidential on-campus mental health services, online health assessments, hours, and additional information.
- Call CAPS at (704) 687-0311 if interested in scheduling an appointment with a counselor. After-hours crisis support is also available through this phone number.

Copyright:

My lectures and course materials, including presentations, tests, exams, outlines, and similar materials, are protected by copyright. I am the exclusive owner of copyright in those materials I create. I encourage you to take notes and make copies of course materials for your own educational use. However, you may not, nor may you knowingly allow others to reproduce or distribute lecture notes and course materials publicly without my express written consent. This includes providing materials to commercial course material suppliers such as CourseHero, Chegg, and other similar services. Students who publicly distribute or display or help others publicly distribute or display copies or modified copies of an instructor's course materials may be in violation of University Policy 406, The Code of Student Responsibility. Similarly, you own copyright in your original papers and exam essays. If I am interested in posting your answers or papers on the course web site, I will request your written permission.

Code of Student Responsibility:

“The *UNC Charlotte Code of Student Responsibility* (the Code) sets forth certain rights and responsibilities in matters of student discipline. The Code defines these responsibilities and guarantees you certain rights that ensure your protection from unjust imposition of disciplinary penalties. You should familiarize yourself with the provisions and procedures of the Code”

(Introductory statement from the UNC Charlotte brochure about the Code of Student Responsibility). The entire document may be found [here](#).

Academic Integrity:

All students are required to read and abide by the Code of Student Academic Integrity. Violations of the Code of Student Academic Integrity, including plagiarism, will result in disciplinary action as provided in the Code. Definitions and examples of plagiarism are set forth in the Code. The Code is available from the Dean of Students Office or online.

Faculty may ask students to produce identification at examinations and may require students to demonstrate that graded assignments completed outside of class are their own work.

Diversity Statement:

UNC Charlotte strives to create an academic climate in which the dignity of all individuals is respected and maintained. Therefore, we celebrate diversity that includes, but is not limited to ability/disability, age, culture, ethnicity, gender, language, race, religion, sexual orientation, and socio-economic status.

All students are required to abide by the [Sexual Harassment Policy](#) and the [Standard for Responsible Use of Information Resources](#). Sexual harassment, as defined in the UNC Charlotte Sexual Harassment Policy, is prohibited, even when carried out through computers or other electronic communications systems, including course-based chat rooms or message boards.

Religious Accommodation:

It is the obligation of students to provide faculty with reasonable notice of the dates of religious observances on which they will be absent by submitting a [Request for Religious Accommodation](#) to their instructor prior to the census date for enrollment for a given semester. The census date for each semester (typically the tenth day of instruction) can be found in UNC Charlotte's Academic [Calendar](#).

Food Insecurity:

Food insecurity is defined by the USDA as "a lack of access to enough food for an active, healthy life." Food insecure categories include: reduced caloric intake, reduced food quality, lack of variety in diet, disrupted eating patterns, and hunger. Research shows that college students experience food insecurity at higher rates than the American household rate, and that food insecurity can negatively impact academic performance and persistence. In recognition of this problem, UNC Charlotte offers assistance to students facing food insecurity through an on-campus food pantry. The Jamil Niner Student Pantry (JNSP) is located on the east edge of campus at 1224 John Kirk Road. It has regular hours which may change from semester to semester; please see the website at <https://ninerpantry.charlotte.edu/> for schedule and details on its services, as well as resources about hunger and food insecurity among college students.