Course Syllabus

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Visual Analytics DSBA HCIP 5122

Fall 2025, 12:00-2:45pm Mondays, Center City 502

Instructor: Wenwen Dou, **wdou1@charlotte.edu** (mailto:wdou1@uncc.edu)

Office hour: Mondays 10-12pm Center City 712

Proposed schedule

Date/Time	Topic	Assignment
08/18/2025	Introduction to visual analysis and analytical storytelling	
08/25/2025	Introduction to R and ggplot	ggplot Assignment
09/01/2025	Labor Day	No class
09/08/2025	Tableau tutorial I & II	Tableau Assignment
09/15/2024	Effective visuals - Color	
09/22/2025	Effective visuals – Preattentive features and application	Midterm presentations instructions out
09/29/2025	Developing your story (theory), Developing your story (example)	
10/06/2025	Mid-term Presentation	BigInterview assignment
10/13/2025	Vegalite	Vegalite assignment
10/20/2025	Animated Vegalite ; Improving communication skills I	
10/27/2025	HTML & CSS; Improving communication skills II	html/css assignment
11/03/2025	Instructor traveling - no class	Observable tryout
11/10/2025	Multi-dimensional Visualization; Overview of Observable Plot	Final Project Instructions out
11/17/2025	Observable Plot continued	Case study writeup instructions out
11/24/2025	Leadership styles and behaviors for communication, Case study discussion	
12/1/2025	Geospatial and Text Visualization, Final Project Question Answering	
12/8/2025	Final Project Presentations	The presentations would take place during our final exam time

- Assignments are small problem sets designed to reinforce the concepts learned in the lectures.

- Participation **(8pts) -** Share two or more visualizations and storytelling examples of your choice with the class.
- DataCamp chapters on ggplot2 (**4pts**)
- R ggplot2 Assignment **(8pts)**– visualization exercise with ggplot in R.
- DataCamp chapters on Tableau (**4pts**)
- Tableau assignment (**10pts**) – Creating visualizations in Tableau
- BigInterview assignment **(8pts)** - mock interview to understand your communication style
- Case study write up (**8pts**) - read a case study about "Chatbot" and writing down your thoughts before discussions in class
- Vegalite assignment (**5pts**) - intermediate step to produce a data visualization
- HTML/CSS **(5pts)** - making your webpage.
- Observable Plot assignment (**8pts)** - Learn about Observable Plot.
- Extra Credit Assignment*: 5 extra credit

  *The extra credit assignment is a user study you volunteer to participate.

- Mid-term Presentation (**12pts**) – Conduct research on new AI-empowerd visualization generation tools, incorporate analytical storytelling skills into the presentation.
- Final Project (**20pts**) – Developing visualizations on a real-world dataset with a tool of your choice (R/ggplot, Tableau, Floursh, Python, D3.js, etc.)
  - Visualization and analytical storytelling demo/presentation (10pts)
  - Final project report (10pts)

Schedule Subject to Change: The standards and requirements set forth in this plan may be modified by the course instructor. Notice of such changes will be made in advance and by announcement in class.

Textbook (recommended but not required)

- Tamara Munzner. Visualization Analysis & Design. CPC Press, 2015. Web page: **https://charlotte.primo.exlibrisgroup.com/discovery/fulldisplay?docid=alma9910111521879040 91&context=L&vid=01UNCC_INST:01UNCC_INST&lang=en&search_scope=MyInst_and_CI&adaptor=Local (https://charlotte.primo.exlibrisgroup.com/discovery/fulldisplay?docid=alma991011152187904091&context=L&vid=01UNCC_INST:01UNCC_INST&lang=en&search_scope=MyInst_and_CI&adaptor=Local%20Search%20**

- Storytelling with Data: Let's Practice, Knaflic 2020. **https://charlotte.primo.exlibrisgroup.com/discovery/fulldisplay?docid=alma9910111802848040 91&context=L&vid=01UNCC_INST:01UNCC_INST&lang=en&search_scope=MyInst_and_CI&adaptor=Local (https://charlotte.primo.exlibrisgroup.com/discovery/fulldisplay?docid=alma991011180284804091&context=L&vid=01UNCC_INST:01UNCC_INST&lang=en&search_scope=MyInst_and_CI&adaptor=Local%20Search%20**

Supplemental Reading

- Alberto Cairo, The Truthful Art. Information graphics from a communication perspective. Blog: **http://www.thefunctionalart.com (http://www.thefunctionalart.com/)**
- Edward Tufte. The Visual Display of Quantitative Information (2nd Edition). Graphics Press, 2001.

Visualization Blogs

- Visualizing data by Andy Kirk: **visualisingdata.com (http://www.visualisingdata.com/)**
- FLOWINGDATA by Nathan Yau: **https://flowingdata.com/ (https://flowingdata.com/)** The Tutorials section provides good examples for developing data visualizations.
- KANTAR Information is Beautiful Awards: **https://www.informationisbeautifulawards.com (https://www.informationisbeautifulawards.com/)** Annual awards celebrate excellence and beauty in data visualizations, infographics, interactives & information art

Grading Policy

- Grading Scale:
- A (Excellent) = 90.00% – 100.00%
- B (Good) =80.00% – 89.99%
- C (Fair) = 70.00% – 79.99%
- D (Passing) = 60.00% – 69.99%
- U (Failing) = below 60%

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.