

Parsons School of Design

PGDV 5100, Data Visualization & Information Aesthetics; CRN 3075

Fall 2020 - Mondays, 7pm

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Course Description

This is a seminal course on information design and aesthetics. Students will study graphical theory, graph grammar, and investigate hierarchies, patterns, and relationships in data structures. Students will examine the role of scale, proportion, color, form, structure, motion, and composition in data visualization. Using computational methods, students will create drawings, graphs, indexes, and maps that explore the database as cultural form. The function of this course is to build a community among the students and orient them to the whole program.

Learning Outcomes

By the successful completion of this course, students will be able to:

1. Develop a deep understanding of the various methods and techniques of modern data visualization, as well as its historical context.
2. Develop skills to design effective visual communication and information displays, by learning a framework for educated exploration and invention.
3. Gain experience in describing, analyzing, and evaluating various data visualization approaches through recurrent presentations and critiques.

Assessable Tasks

- Develop Exercise 1: Visualize time (due: week 3)
- Develop Exercise 2: Visualize quantities, categories and summarized data (due: week 5)
- Develop Exercise 3: Visualize textual and qualitative data (due: week 7)
- Develop Exercise 4: Visualize geospatial data (due: week 9)
- Present a research report on subject assigned during the first class session (due on individually assigned date)
- Participate in reading discussions through Discussion posts on Canvas (weekly)
- Participate in synchronous class discussions and peer feedback opportunities (weekly)
- Collect sources for the final project (due: week 10)
- Develop a proposal for the final project (due: week 11)
- Create a prototype for the final project (due: week 13)
- Create and Demonstrate the final project (due: week 15)

Evaluation and Final Grade Calculation

Active Participation / Attendance 100%

- 10%: Exercise 1 – Visualize Time
- 10%: Exercise 2 – Visualize Quantities, Categories, and Summarized Data

- 10%: Exercise 3 – Visualize Textual and Qualitative Data
- 10%: Exercise 4 – Visualize Space
- 10%: Research Report
- 10%: Discussion posts in response to reading and assignments
- 10%: Class Participation + Attendance
- 30%: Final Project
- 100% TOTAL

Course Outline

PART ONE:			
WEEK 1	August 31, 2020	Introductions Syllabus review Overview of Data Visualization Introduce Research Reports	Assignment: Favorite data visualization, Sign up for a Research report, Reading discussion post Reading: Chapter 1 - Image, Interpretation, and Interface
WEEK 2	Sept 14, 2020	Lecture: Mapping Time Review Favorite data visualizations Research report presentation 1	Due: Favorite data visualization, Reading and discussion post Assignment: Exercise 1 and Reading/discussion response
WEEK 3	Sept 21, 2020	Review Exercise 1 Research report presentation 2	Due: Exercise 1, Reading and discussion post Assignment: Exercise 2 and Reading/discussion response
WEEK 4	October 5, 2020	Lecture: Mapping Quantities, Categories, and Summarized Data Research report presentation 3	Due: Reading and discussion post Assignment: Reading/discussion response
WEEK 5	October 12, 2020	Review Exercise 2 Research report presentation 4	Due: Exercise 2, Reading and discussion post Assignment: Exercise 3 and Reading/discussion response
WEEK 6	October 19, 2020	Lecture: Mapping Textual and Qualitative Data Research report presentation 5	Due: Reading and discussion post Assignment: Reading/discussion

			response (Data Humanism - Giorgia Lupi)
WEEK 7	October 26, 2020	Review Exercise 3 Research report presentation 6 Midterm evaluations	Due: Exercise 3, Reading and discussion post Assignment: Exercise 4 and Reading/discussion response
WEEK 8	Nov 2, 2020	Lecture: Mapping Space Research report presentation 7	Due: Reading and discussion post Assignment: Reading/discussion response
WEEK 9	Nov 9, 2020	Review Exercise 4 Research report presentation 8 Introduce Final Project	Due: Exercise 4, Reading and discussion post Assignment: Final Project and Reading/discussion response
WEEK 10	Nov 16, 2020	Lecture: Mapping Hierarchies and Networks Review Final Project Sources Research report presentation 9	Due Final Project Sources, Reading and discussion post Assignment: Final Project Proposal
WEEK 11	Nov 23, 2020	Review Final Project Proposal Research report presentation 10	Due: Final Project Proposal Assignment: Final Project Prototype
WEEK 12	Nov 30, 2020	Lecture: Digital storytelling Final Project feedback discussion Research report presentation 11	Due: Final Project iteration
WEEK 13	Dec 7, 2020	Review Final Project Prototype Course evaluations Research report presentation 12	Due: Final Project Prototype Assignment: Final Project Presentation
WEEK 14	Dec 14, 2020	Final Project presentations	Due: Final Project

Required Readings

Drucker, Johanna. *Graphesis: Visual Forms of Knowledge Production*. Cambridge, MA: Harvard University Press, 2014.

Recommended Reading

Nusbaumer Raflic, Cole. *Storytelling with Data: A Data Visualization Guide for Business Professionals*. Available here:
<http://www.bdbanalytics.ir/media/1123/storytelling-with-data-cole-nussbaumer-knaflic.pdf>

Giorgia Lupi, "Data Humanism, The Revolution will be Visualized,"
<http://giorgialupi.com/data-humanism-my-manifesto-for-a-new-data-world>

Mierelles, Isabel. *Design for Information: An introduction to the histories, theories, and best practices behind effective information visualizations*. Rockport, 2013.

Materials and Supplies

Course textbook: Drucker, Johanna. *Graphesis: Visual Forms of Knowledge Production*. Cambridge, MA: Harvard University Press, 2014.

Resources

The university provides many resources to help students achieve academic and artistic excellence. These resources include:

- [The University \(and associated\) Libraries](#)
- [The University Learning Center](#)
- [University Disabilities Services](#)
- [Making Center](#)

The Making Center is a constellation of shops, labs, and open workspaces that are situated across the New School to help students express their ideas in a variety of materials and methods. We have resources to help support woodworking, metalworking, ceramics and pottery work, photography and film, textiles, printmaking, 3D printing, manual and CNC machining, and more. A staff of technicians and student workers provide expertise and maintain the different shops and labs. Safety is a primary concern, so each area has policies for access, training, and etiquette with which students and faculty should be familiar. Many areas require specific orientations or trainings before access is granted.

- [Health and Wellness](#): additional services and support available to New School students.

Grading Standards

Communication

How well are the students able to express their ideas, both verbally and with other forms of communication such as: writing, drawing, mapping, modeling, and pre-visualization.

Critical Thinking and Reflective Judgment

To what degree have the students demonstrated and developed critical thinking skills over the course of the semester? Reflective judgment not only asks the questions with concrete answers such as evaluative questions about form, methodology, materials, utility, aesthetics, cultural context, experience, research, and process critique, but also takes on difficult problems in the world that require research and evidence to support conclusions and advocacy.

Design/Creative Processes

How do the students identify problems, brainstorm ideas, generate, analyze, and research solutions, write specifications and constraints, consider contextual factors, evaluate feasibility, test, iterate, evaluate process and form, integrate and adapt new processes, and pursue an iterative cycle?

Contextualization, Conclusion and Evaluation

Have the students been able to connect their work and ideas to historical and contemporary precedents, and situate their work within the larger discourse surrounding ideas of data visualization? Can the students synthesize a problem and apply diverse approaches to design and visualization in support of a conclusion? Can the students evaluate project successes and failures?

Integration and Appropriate Use of Technology

Are the students making good choices about the form and type of technology they are using to express her design concept? Are the students able to integrate technology into the conceptualization of their projects?

Iteration, Production, Time Management

Are the students able to scale their project to the appropriate time frame within the technical and design resources at their disposal? Are the students recording their thoughts and processes on their website so that their knowledge can be shared with and discussed the rest of the class.

Graduate

A	Work of exceptional quality
A-	Work of high quality
B+	Very good work
B	Good work; satisfies course requirements <i>Satisfactory completion of a course is considered to be a grade of B or higher.</i>
B-	Below-average work
C+	Less than adequate work
C	Well below average work
C-	Poor work; lowest possible passing grade
F	Failure
GM	Grade missing for an individual <i>Grades of D are not used in graduate level courses.</i>

Grade of W

The grade of W may be issued by the Office of the Registrar to a student who officially withdraws from a course within the applicable deadline. There is no academic penalty, but the grade will appear on the student transcript.

Unofficial Withdrawal (Grade of Z)

This grade is to be assigned to students who have **never attended or stopped attending** classes. Exceptions can be made if the student has completed enough work to warrant a grade (including a failing grade), and arrangements have been made with the instructor(s) and the Dean's Office prior to grade submission. The Z

grade does not calculate into the student's GPA. Though a Z grade does not have a failing penalty it still carries a myriad of consequences for students on visas or receiving financial aid. Only issue the Z grade when a student meets the above criteria.

Grades of Incomplete

The grade of I, or temporary incomplete, may be granted to a student under unusual and extenuating circumstances, such as when the student's academic life is interrupted by a medical or personal emergency. This mark is not given automatically but only upon the student's request and at the discretion of the instructor. A Request for Incomplete form must be completed and signed by the student and instructor. The time allowed for completion of the work and removal of the "I" mark will be set by the instructor with the following limitations: [You should include one of the following standards, depending on the level of your course].

Undergraduate students: Work must be completed no later than the seventh week of the following fall semester for spring or summer term incompletes and no later than the seventh week of the following spring semester for fall term incompletes. Grades of "I" not revised in the prescribed time will be recorded as a final grade of "F" by the Registrar's Office.

Graduate students: Work must be completed no later than one year following the end of the class. Grades of "I" not revised in the prescribed time will be recorded as a final grade of "N" by the Registrar's Office.

College, School, Program and Class Policies

A comprehensive overview of policy may be found under [Policies: A to Z](#). Students are also encouraged to consult the [Academic Catalog for Parsons](#).

Canvas

Use of Canvas may be an important resource for this class. Students should check it for announcements before coming to class each week.

Electronic Devices

The use of electronic devices (phones, tablets, laptops, cameras, etc.) is permitted when the device is being used in relation to the course's work. All other uses are prohibited in the classroom and devices should be turned off before class starts.

Responsibility

Students are responsible for all assignments, even if they are absent. Late assignments, failure to complete the assignments for class discussion and/or critique, and lack of preparedness for in-class discussions, presentations and/or critiques will jeopardize your successful completion of this course.

Active Participation and Attendance

Class participation is an essential part of class and includes: keeping up with reading, assignments, projects, contributing meaningfully to class discussions, active participation in group work, and attending synchronous sessions regularly and on time.

Parsons' attendance guidelines were developed to encourage students' success in all aspects of their academic programs. Full participation is essential to the successful completion of coursework and enhances the quality of the educational experience for all, particularly in courses where group work is

integral; thus, Parsons promotes high levels of attendance. Students are expected to attend classes regularly and promptly and in compliance with the standards stated in this course syllabus.

While attendance is just one aspect of active participation, absence from a significant portion of class time may prevent the successful attainment of course objectives. A significant portion of class time is generally defined as the equivalent of three weeks, or 20%, of class time. Lateness or early departure from class may be recorded as one full absence. Students may be asked to withdraw from a course if habitual absenteeism or tardiness has a negative impact on the class environment.

I will assess each student's performance against all of the assessment criteria in determining your final grade.

Academic Honesty and Integrity

Compromising your academic integrity may lead to serious consequences, including (but not limited to) one or more of the following: failure of the assignment, failure of the course, academic warning, disciplinary probation, suspension from the university, or dismissal from the university.

Students are responsible for understanding the University's policy on academic honesty and integrity and must make use of proper citations of sources for writing papers, creating, presenting, and performing their work, taking examinations, and doing research. It is the responsibility of students to learn the procedures specific to their discipline for correctly and appropriately differentiating their own work from that of others. The full text of the policy, including adjudication procedures, is found on the university website under [Policies: A to Z](#). Resources regarding what plagiarism is and how to avoid it can be found on the [Learning Center's website](#).

The New School views "academic honesty and integrity" as the duty of every member of an academic community to claim authorship for his or her own work and only for that work, and to recognize the contributions of others accurately and completely. This obligation is fundamental to the integrity of intellectual debate, and creative and academic pursuits. Academic honesty and integrity includes accurate use of quotations, as well as appropriate and explicit citation of sources in instances of paraphrasing and describing ideas, or reporting on research findings or any aspect of the work of others (including that of faculty members and other students). Academic dishonesty results from infractions of this "accurate use". The standards of academic honesty and integrity, and citation of sources, apply to all forms of academic work, including submissions of drafts of final papers or projects. All members of the University community are expected to conduct themselves in accord with the standards of academic honesty and integrity. Please see the complete policy in the Parsons Catalog.

Intellectual Property Rights

The New School (the "university") seeks to encourage creativity and invention among its faculty members and students. In doing so, the University affirms its traditional commitment to the personal ownership by its faculty members and students of Intellectual Property Rights in works they create. The complete policy governing Intellectual Property Rights may be seen on the [university website, on the Provost's page](#).

Student Course Ratings (Course Evaluations)

During the last two weeks of the semester, students are asked to provide feedback for each of their courses through an online survey. They cannot view grades until providing feedback or officially declining to do so. Course evaluations are a vital space where students can speak about the learning

experience. It is an important process which provides valuable data about the successful delivery and support of a course or topic to both the faculty and administrators. Instructors rely on course rating surveys for feedback on the course and teaching methods, so they can understand what aspects of the class are most successful in teaching students, and what aspects might be improved or changed in future. Without this information, it can be difficult for an instructor to reflect upon and improve teaching methods and course design. In addition, program/department chairs and other administrators review course surveys. Instructions are available online [here](#).