

Design Thinking - Data Visualization

ART-3543 | T,Th 10.00-11:50

DEMATT, Room 266

3 Credits, 12 hours/week

Prerequisite: consent

May be repeated for credit

Instructor: Prof. Scholl

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Slack: desthinkdatavis.slack.com

Office: DEMATT, 175

(Hours M-TH 12-1 or by appt.)

Course Description (in practice) This advanced studio class uses Design Thinking methods to delve more deeply into computational thinking and computer literacy as they relate to data visualization. In addition to archetypical diagrams such as pie, bar, plot, line diagrams, complex data can be expressed through graph-based visuals, layered comparisons, three-dimensional representations, animated graphics, and interaction design. Various methodologies will be explored for visualizing information that is unbiased yet based in story telling. Prerequisites: Digital Media and Culture 1 (ART3363) or consent.

May be repeated for up to 6 credits.

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How to strengthen your creative process

- **Let go of your ego.** Learn to be objective early in your process so that you do not get attached to “bad” ideas. While comfort is safe, you will not grow.
- **Solicit others’ opinions.** Curiosity is key. The more curious you are, the sharper your problem solving skills will become. Others’ opinions include: reading, collecting things, visiting museums and galleries, observing the world around you, talking with others, researching and learning.
- **Keep your mind open.** Do not accept an idea immediately. Pre-conceived notions have nothing to do with successful design. Research your subject and push yourself beyond the obvious.
- **Change up your method.** Sketch, use the computer, take photos, use your intuition, analyze, focus on the big picture, focus on details, and so on.
- **Accept responsibility for your own learning.** Rapidly changing technology means you may be inventing technique as you go. You may have to discover answers by trial and error. The more mistakes you make, the more you will learn. Expect that you may not get it “right” on the first try. It is not important that you know something, it is important that you know how to figure something out. This is true learning.
- **Shift your perspective.** Mastering the ability to reframe your design problem increases your imagination. Just as in photography you can look close up, from far away, upside down, in focus, or out of focus, shifting your frame of reference reveals new insights and ideas. Similarly you can look at the problem from a child’s point of view, an older person’s point of view, a poor person’s point of view and so on. Ask “why?” Practice shifting everyday.
- **Have fun!** Presumably you are in this class because you like making stuff. Do what inspires you: draw, paint, take photos—whatever you enjoy. All of this informs your ability to design and innovate. **Play! Play! Play!**

Course Goals and Student Learning Outcomes

Students will develop and design a project of their own choosing. Upon successful completion of this course you will have learned:

- **Communication:** be able to communicate, verbally and visually
- **Visualization Methods:** become fluid in visual expression of form, materials, textures and interactions - diagramming, story boarding, wireframing.
- **Iterative Prototyping:** create ‘low res/high fidelity’ models. Recognizing patterns within an ecosystem.
- **Personal creative process:** develop life-long learning habits (progress
- **Looking Outward:** become aware of other peoples work, past and present

Required Books

1. *Observe, Collect, Draw!: A Visual Journal*, Giorgia Lupi and Stefanie Posavec, Princeton Architectural Press, 2018, ISBN 978-1616897147
2. *Resonate: Present Visual Stories that Transform Audiences*, Nancy Duarte, John Wiley and Sons, 2010, ISBN 978-0470632017.
Free multi-media version: <https://www.duarte.com/>

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Course Structure and Expectations

This is a studio course, which means at least half of the class will be spent working in class. In addition to instruction we will frequently discuss the assigned readings and conduct assignment and project critiques throughout the semester.

Critiques: Discussing your work is an essential part of the design process. Critiques provide an opportunity to articulate ideas, assess progress, ask questions and accept constructive criticism from your peers and the instructor. This feedback can expose unforeseen problems in your solution, move you through mental blocks and validate the direction you have chosen. Your participation is critical.

Presentations: Depending on the size of the class students in small groups or individually may present an assigned reading. For example: an individual may read and present a chapter from Resonate - visual storytelling. In preparation, students will use resources including the required books and online references to write and present a formal lecture on the topic to the class.

Attendance: Your timely presence and participation are necessary. Frequent absences and late arrivals are disruptive and inconsiderate to the rest of the class. If you are unable to attend class, please inform me by email in advance. After three absences your grade will drop one letter. Three late arrivals will count as one absence. You are responsible for any information you miss.

Outside of class: You are expected to spend at least an equal number of hours outside of class to complete assigned readings, work on your process notebook, researching and making stuff. Concepts and supporting computer applications will be introduced weekly. However, learning takes place through exploration and practice. It is your responsibility to learn.

Assignments: Assignments are critiqued in class. Work that is incomplete or improperly done due to missed or misunderstanding information will result in a lower grade. Late assignments automatically lose 10% and an additional 5% for lack of participation. This means your grade on a late assignment is calculated starting at 85%. You have up to one week to turn in a late assignment. After one week you fail the assignment.

Professional Conduct and Attitude: You are building community with your peers and instructor based on mutual trust and respect. The way you conduct yourself in class is considered integral to your professional development and will affect your grade. You are encouraged to consider this class like an internship, because at some point your professor and especially your peers will be in a position to offer you a job or recommend you for a future opportunity. How you present yourself in class and your dedication and focus on your work will help you succeed in the class and in life.

Evaluation and Grading:

You will receive regular feedback on your work in progress and be graded on assignments, projects, participation and your visual journal. The categories on the attached rubric will help you understand the evaluation criteria. Grade calculation is based on the following:

Visual Data Journal	30%
Presentations	30%
Participation	10%
Final Project	30%

General Expectations:

There are a few basic things you can do to ensure that you receive a **respectable grade (B)** in the course. These things may seem simple and obvious, but it's sometimes surprising how few students seem to get this right:

- Show up to all of the course sessions, on time and stay for the duration of the class.
- Communicate with your professor if you must miss a session.
- Submit all of the deliverables, on time.
- Follow instructions: do all parts of the deliverables, paying careful attention to seemingly trivial requirements (such as naming and packaging your files, etc.).
- Have a positive attitude.

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There are also some things you can do to earn a **really great grade (A)** in the course:

- Make interesting, novel, provocative work that's well-crafted.
- Be resourceful about getting the assistance you need.
- Help your classmates when they're stuck.
- Make helpful contributions to discussions.

Design Thinking - Data Visualization

Learning and Grading Rubric

	Excellent – goes beyond	Good – meets requirements	Needs Improvement
Communicate Visualize Prototype Participate	a wide variety of ideas are generated and explored, goes beyond the expected, grasps user-centered research, divergent thinking, empathy and prototyping. Learns from mistakes, integrates feedback into final projects. Adds value to critiques.	does the only amount of work to satisfy the project . Has more than one idea, but should have more. Integrates feedback sometimes. Participates in class only when called upon.	generates only one idea . Doesn't take into consideration the audience. Does not take risks. Visual and verbal communication is difficult to understand.
Personal creative process	visual journal filled with ideas daily .	Decent visual journal adds ideas several times a week .	visual journal is really lacking, adds ideas less than once a week .
Communicate	storytelling as a way to develop the project idea. Has a lot of fun with this.	can come up with a story, but is reluctant to share .	has no grasp of how storytelling integrates into the process.
Look outward	support network of students from other disciplines, online forums, etc.	attempts this, but has limited success.	no attempt at all and does not see the value in bringing in disparate opinions and feedback.
Personal creative process	Works well alone and in collaboration with others. 100% prompt attendance; assignments are completed on time; positive attitude that displays ambition, persistence and determination ; professional development always exhibited.	Works well alone and in collaboration with others. Classes are seldom missed and attendance is prompt; most assignments are completed on time; attitude is generally positive that displays ambition, persistence and determination; professional development is sometimes exhibited.	Does not work well in class. Classes are often missed and attendance is tardy; assignments are sometimes completed on time; attitude is sometimes negative lacking ambition, persistence and determination; professional development occasionally lacks commitment.

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Self-Evaluation **Rubric**

Refer to Learning and Grading Rubric • provide specific examples: how did you integrate feedback? • how did you excel and go beyond? • explain your process and how you arrived at the final deliverable, etc.

Excellent – goes beyond
Good – meets requirements
Needs Improvement

Look Outward
Think
Refine
Participate

Track

Develop

Form

Name _____

Date _____