

# A&D 690

## Information Visualization Design

Under curriculum approval process as  
A&D542 Information Visualization Design

### Course Summary

This course starts from exploring visual perception and attention theories, studying modern visualization technologies and toolkits, and reviewing evolving visualization research. Students work on small exercises, and then accomplish complicated virtual and physical visualization projects for information representation and communication.

## Course Outline

Week / Date	Activities	Due
Week 1	Lecture: Introduction	
Week 2	Lecture: Perception and Cognition	Exercise 1: Data Exploration
Week 3	Lecture: Tufte's InfoVis Design Principles	Exercise 2: Table Creation
Week 4	Lecture: Stephen's InfoVis Design Principles	Meet Cheryl individually to discuss your semester project topic and dataset
Week 5	Lecture: Color and Associations	Exercise 3: Many Eyes
Week 6	Lecture: InfoVis Tools	Exercise 4: Network Visualization Design
Week 7	Lecture: Visualization Interaction	
Week 8	Lecture: Quantitative Data Display I	InfoVis system review report
Week 9	Lecture: Quantitative Data Display II	
Week 10	Two visualization design prototype presentations	Visualization prototypes
Week 11	Lecture: Text Visualization	
Week 12	Lecture: Social Visualization	Physical-based visualization
Week 13	Lecture: Narrative Visualization	
Week 14	Lecture: Animation and Augmented Reality	
Week 15	Final project presentations	Poster-based visualization Project presentation in gallery
Week 16	Submit your design evaluation report and review your scores with the instructor	Heuristic design evaluation report and re-design outlines

## Learning Outcomes

- Learn the principals involved in information visualization. Gain a background that will aid the design of new, innovative visualizations
- Learn about the variety of existing techniques and systems in information visualization
- Build a sound foundation in human visual perception and how it relates to creating effective information visualization.
- Proceed through graph and map-making best practices toward advanced topics of data structure and programmatic visualizations.
- Gain experience describing and critiquing the methods and approaches of data visualization through presentations and critiques.
- Understand the key design principles for creating information visualizations.
- Explore the communication and narrative potential of information visualizations.
- Develop skills in critiquing different visualization techniques as applied to particular tasks.
- Evaluate information visualizations tools.
- Design new, innovative visualizations.

## Evaluation Structure

- **Visualization design project (50%)**  
This includes dataset selection, idea/concept generation, prototype creation, visual readability, aesthetics, documentation of the design process, and the quality of final presentation.
- **Summary of visualization system reviews (20%)**  
It would be evaluated based upon their findings of system function, and potential for the improvements.
- **Visualization exercises (20%)**  
The focus will be laid on the understanding of fundamental visual principles and implementation on simple data visualizations. With enough practice in software, students should be able to explore and understand the meanings of data and start to generate variations to present the data.
- **10% Content contributions and discussion participation (10%)**  
This includes posts in course wiki site, and the quality of feedbacks to other presentations.

## Exercise 2 Accounting Data Visualization











