

Course Syllabus

INST 462 - Introduction to Data Visualization

Syllabus

- **Course name:** INST 462 - Introduction to Data Visualization
- **Term:** Fall 2018
- **Instructor:** Dr. Jennifer Golbeck, Professor of Information Studies, jgolbeck@umd.edu
(<mailto:jgolbeck@umd.edu>)
Office hours Thursday 12-1:30 Hornbake
- **TA:** Sahar Zavaree, Office Hours Hornbake 0215A 9am-11am Mondays
- **Textbook:** Tamara Munzner, *Visualization Analysis and Design (VAD)*, CRC press, 2014.
(<http://www.cs.ubc.ca/~tmm/vadbook/>)

Introduction

- *Data visualization* is the graphical representation of data to aid understanding, and is the key to analyzing big data for fields such as science, engineering, medicine, and the humanities. This undergraduate course is an introduction to data visualization, where you will learn how to design, build, and evaluate visualizations for different types of data, disciplines, and domains. The course has a strong emphasis on design and practical applications of data visualization. The format for the course will be lectures by the instructor, practical design exercises, group discussions, as well as a set of practical assignments throughout the course. The grading will be based on participation in class and seven assignments.

Student Learning Outcomes

- Upon successful completion of the course, students will be able to:
- Articulate human, visual, and interactive design issues for creating effective visualizations.
- Use existing visualization tools and techniques to analyze basic datasets.
- Apply existing techniques from scalar, volume, multidimensional, textual, graph-based, tree-based, and temporal visualization to actual problems and data.
- Evaluate a visualization solution based on quantitative metrics such as time and error, as well as more complex and qualitative metrics.
- Articulate issues and techniques for applying visualization to domains such as medicine, finance, science, engineering, the humanities, policy, and government.

Grading

- The course outcomes will be assessed through the following mechanisms:
- **Homework assignments (50%)** - practical assignments on data visualization, including visual and interactive design, cognition, and data transformation.
- **Labs (25%)** – Labs are online and have required activities with due dates. Your participation is required.
- **Quizzes (10%)** – these are lightweight and designed to easily confirm that you have watched the lectures each week.

- **Class participation and lecture exercises** (15%) – though we are meeting online, there are hands on exercises in some lectures with discussions. While these are not graded, we expect you to engage. Your level of participation in these discussions and exercises will count toward your participation grade.
- Final grades will be assigned based on your weighted average in the class using the following categories:

A+ More than 97.0*

A 93.0 - 96.9

A- 90.0 - 92.9

B+ 87.0 - 89.9

B 83.0 - 86.9

B- 80.0 - 82.9

C+ 77.0 - 79.9

C 73.0 - 76.9

C- 70.0 - 72.9

D+ 67.0 - 69.9

D 63.0 - 66.9

D- 60.0 - 62.9

F Less than 60

* Note: To receive an A+ you must have demonstrated significant contributions to the class in addition to achieving this numeric grade.

Homework Assignments

Biweekly-ish assignments where students work on practical visualization problems will be a major part of the course. The goal is to expose the student to as many practical visualization techniques and problems as possible.

Detailed Schedule

- See Canvas for a detailed weekly schedule.

Extensions

If you have to miss a deadline, you should inform the instructor as soon as possible, indicating when you will











submit your work. The instructor will try to accommodate your needs. You should use this clause only for extraordinary personal reasons (e.g., personal illness, death in the family, etc.), not because you are busy with other classes, have a career fair to attend, etc. The general policy is that late work will be deducted 20% of its total grade per calendar day, starting on the same day it is due. It is at the instructor's discretion to accept late work and assign late penalties.


















There are absolutely no extensions or re-dos on quizzes.













University Policies

For university course policies, review go.umd.edu/ug-policy (<http://go.umd.edu/ug-policy>)

Course Summary:

Date	Details	
Sun Feb 3, 2019	 Assignment 1: Career Visualization (https://myelms.umd.edu/courses/1258513/assignments/4787429)	due by 11:59pm
	 Week 1 Lab: Find a good visualization (https://myelms.umd.edu/courses/1258513/assignments/4787428)	due by 11:59pm
	 Week 1 Lab: Introduction (https://myelms.umd.edu/courses/1258513/assignments/4787427)	due by 11:59pm
	 Week 1 Quiz (https://myelms.umd.edu/courses/1258513/assignments/4787410)	due by 11:59pm
Sun Feb 10, 2019	 Week 2 Lab: Excel (https://myelms.umd.edu/courses/1258513/assignments/4787426)	due by 11:59pm
	 Week 2 Quiz (https://myelms.umd.edu/courses/1258513/assignments/4787406)	due by 11:59pm
	 Assignment: Basic Visualization Design (https://myelms.umd.edu/courses/1258513/assignments/4787430)	due by 11:59pm
Sun Feb 17, 2019	 Week 3 Lab: Tasks (https://myelms.umd.edu/courses/1258513/assignments/4787422)	due by 11:59pm
	 Week 3 Quiz (https://myelms.umd.edu/courses/1258513/assignments/4787408)	due by 11:59pm
Sun Feb 24, 2019	 Week 4 Lab: Channels (https://myelms.umd.edu/courses/1258513)	due by 11:59pm

Date	Details	
	/assignments/4787438)	
	 Week 4 Quiz (https://myelms.umd.edu/courses/1258513/assignments/4787414)	due by 11:59pm
	 Week 5 Lab: Color (https://myelms.umd.edu/courses/1258513/assignments/4787423)	due by 11:59pm
Sun Mar 3, 2019	 Week 5 Quiz (https://myelms.umd.edu/courses/1258513/assignments/4787404)	due by 11:59pm
	 Mini Project: Exploratory Data Analysis (https://myelms.umd.edu/courses/1258513/assignments/4787442)	due by 11:59pm
	 Assignment: Visualization Identification and Critique (https://myelms.umd.edu/courses/1258513/assignments/4787435)	due by 11:59pm
	 Week 6 Lab: Exercise 1 (https://myelms.umd.edu/courses/1258513/assignments/4787421)	due by 11:59pm
Sun Mar 10, 2019	 Week 6 Lab: Exercise 2 (https://myelms.umd.edu/courses/1258513/assignments/4787420)	due by 11:59pm
	 Week 6 Lab: Exercise 3 (https://myelms.umd.edu/courses/1258513/assignments/4787419)	due by 11:59pm
	 Week 6 Quiz (https://myelms.umd.edu/courses/1258513/assignments/4787409)	due by 11:59pm
	 Week 7 Lab: Bad Visualizations (https://myelms.umd.edu/courses/1258513/assignments/4787418)	due by 11:59pm
Sun Mar 17, 2019	 Week 7 Quiz (https://myelms.umd.edu/courses/1258513/assignments/4787407)	due by 11:59pm
Sun Mar 24, 2019	 Mini Project: Bus Schedule (https://myelms.umd.edu/courses/1258513/assignments/4787440)	due by 11:59pm
	 Assignment: Tableau (https://myelms.umd.edu/courses/1258513/assignments/4787434)	due by 11:59pm
Sun Mar 31, 2019	 Review Exercise (https://myelms.umd.edu/courses/1258513/assignments/4787436)	due by 11:59pm
	 Assignment: Personal Network Visualization (https://myelms.umd.edu/courses/1258513/assignments/4787433)	due by 11:59pm
Sun Apr 7, 2019	 Week 9 Lab 1: Export Gephi Visualization (https://myelms.umd.edu/courses/1258513/assignments/4787425)	due by 11:59pm
	 Week 9 Lab 2: Gephi Visualization 2 (https://myelms.umd.edu/courses/1258513/assignments/4787424)	due by 11:59pm

Date	Details	
	 Week 9 Quiz (https://myelms.umd.edu/courses/1258513/assignments/4787412)	due by 11:59pm
Sun Apr 14, 2019	 Week 10 Quiz (https://myelms.umd.edu/courses/1258513/assignments/4787413)	due by 11:59pm
	 Week 11 Lab: Exercise 1 Wordle (https://myelms.umd.edu/courses/1258513/assignments/4787416)	due by 11:59pm
Sun Apr 21, 2019	 Week 11 Lab: Exercise 2 Wordtree (https://myelms.umd.edu/courses/1258513/assignments/4787415)	due by 11:59pm
	 Week 11 Quiz (https://myelms.umd.edu/courses/1258513/assignments/4787411)	due by 11:59pm
	 Assignment: Data Comic (https://myelms.umd.edu/courses/1258513/assignments/4787431)	due by 11:59pm
Sun May 5, 2019	 Week 13 Exercise: Sampling (https://myelms.umd.edu/courses/1258513/assignments/4787437)	due by 11:59pm
	 Week 13 Quiz (https://myelms.umd.edu/courses/1258513/assignments/4787405)	due by 11:59pm
	 Assignment: BS Inventory (https://myelms.umd.edu/courses/1258513/assignments/4787450)	due by 11:59pm
Sun May 12, 2019	 Week 14 Quiz (https://myelms.umd.edu/courses/1258513/assignments/4787453)	due by 11:59pm
	 Week 14: Calling BS (https://myelms.umd.edu/courses/1258513/assignments/4787444)	due by 11:59pm
Thu May 16, 2019	 Mini Project: Visualization Evaluation (https://myelms.umd.edu/courses/1258513/assignments/4789134)	due by 11:59pm

