- **Course name:** INST 462 - Introduction to Data Visualization
- **Course hours:** Tuesdays and Thursdays (TTh) 9:30am-10:45am
- **Room**: HBK 0115 (basement, South Wing)
- **Term:** Spring 2019
- **Instructor:** Eric Newburger PhD Student, Information Studies
  - **E-mail:** enewburg@terpmail.umd.edu
  - **Office hours:** Tuesdays and Thursdays in the classroom, 11am-12pm (or by appointment)
- **Textbook:** Tamara Munzner, *Visualization Analysis and Design*, 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:

- **Visualization assignments (80%)** - practical assignments on data visualization, including visual and interactive design, cognition, and data transformation.
- **Class participation (20%)** - in-class activities such as design sessions, quizzes, and presentations by students.

Final grades will be assigned using the following categories:

A+	More than 97.0	**C**	73.0 - 76.9
A	93.0 - 96.9	**C-**	70.0 - 72.9
A-	90.0 - 92.9	**D+**	67.0 - 69.9
B+	87.0 - 89.9	**D**	63.0 - 66.9
B	83.0 - 86.9	**D-**	60.0 - 62.9
B-	80.0 - 82.9	**F**	Less than 60
C+	77.0 - 79.9		

Assignments

Biweekly assignments where students work on practical visualization problems will be a major part of the course. These assignments are worth 10% of the final grade each, and are designed to be relatively lightweight. The goal is to expose the student to as many practical visualization techniques and problems as possible. Here is an overview:

- [Assignment 1: Infographics](#) - create a simple infographic about your own life and career. (10%)
- [Assignment 2: Basic Visualization Design](#) - designing a new visualization technique. (10%)
- Assignment 3:Excel + Powerpoint (10%)
- [Assignment 4: Tableau - use Tableau to analyze multidimensional data. (10%)](#)
- Assignment 5: Gephi - TBA (10%)
- [Assignment 6: Data Illustrator - use the Adobe Data Illustrator tool. (10%)](#)
- [Final Project: Data-Driven Storytelling](#) - create a data-driven story using visualization about a dataset. (20%)

Additional Information and Policies

Please see the [UMD Undergraduate Course Policies](#) for general information and policies with regard to undergraduate courses at the University of Maryland. Furthermore, the following pages provide course-specific information:

- [Academic Integrity](#) - important notes on academic integrity
- [Attendance Policy](#) - what happens if you can't make it to class?
- [Course Evaluation](#) - making the course better
- [Emergency Preparedness](#) - being prepared for extraordinary situations
- [Extensions](#) - my policy on extensions for assignments and projects
- [Getting Help](#) - what to do if you are stuck
- [Names/Pronouns and Self Identifications](#) - making the course inclusive for everyone
- [Special Needs](#) - for students with specific needs or accommodations