Instructor: Prof. Tommy Dang
Email: tommy.dang@ttu.edu
Office hours: 2:30 pm - 3:30 pm TR and available to talk right after the class
Office: EC 306C

Class: EC 217, 3:30 pm - 4:50 pm TR Jan 16, 2019 - May 14, 2019
Undergraduate level: Special Topics in CS: (prereq 2413) Visualization and Visual Analytics - 59423 - CS 4331 - 003
Graduate level: Special Problems in Computer Science: Visualization and Visual Analytics - 32759 - CS 5331 - 001

Tutorial Assistant (TA): Vung Pham
Email: vung.pham@ttu.edu
Office hours: 2:30 pm - 3:30 pm TR
iDVL Lab: EC 305

Course Description:

- This course introduces material on designing effective visualizations. This course is going to focus on the basics of visualization, covering principles, methods, and techniques that are foundational to both information and scientific visualization.
- During the course, students will get hands-on experiences on building interactive visualizations for various real-world datasets. Students will be accessed their learnings through three visualization projects.
- Extensive computer use is required.

Prerequisites:

- Students are expected to have basic programming skills. Completed material in computer programming topics (e.g. CS 2413: Data Structures, CS 3364: Design & Analysis of Algorithms or equivalent) is helpful but not required.
- Students majoring in areas other than Computer Science are also encouraged to enroll.
- Please contact the instructor if you are unsure if you satisfy the prerequisites.

Attendance:

- Attendance is required. Part of your grade is from your in-class participation/contribution. So, you should consider to go the all classes, make comments on other people's work, ask questions, and ask good questions.
- Attendance can be checked randomly: Absence gets -1 while presence gets +1.

Class policies:

- No cell phone usage and no eating during class.
- Academic dishonesty, such as cheating or plagiarism, is a serious offense. For the class projects, you are expected to come up with your own design ideas and implement your work. If you are caught cheating, the grade of F will stand as your final grade (see Part II B 2 of the *Student Handbook*). The instructor may recommend to Student Judicial Programs for more serious/repeated violations. (*OP 34.12)*
- Any student who, because of a disability, may require special arrangements in order to meet the course requirements should contact the instructor as soon as possible to make any necessary arrangements. (*OP 34.22*)
- A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. (*OP 34.19*)

Evaluation:

The numeric breakdown of your final grade is computed as follows::

	Percentage	What to do	Notes
Project 1:	26%	Time series visualization	Individual project

Project 2:	30%	Geospatial visualization	Group project (teammates are assigned by instructor)
Project 3:	30%	Network visualization	Group project (teammates are selected by students)
Peer evaluation:	4%	Feeback from teammates	for Project 2 and 3
Class Participation:	10%	Comments/Ask questions	Don't ask trivial questions. Max +2/day. Can contribute via piazza One contribution is 0.5%

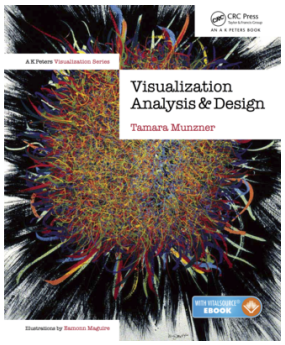
A = 85 - 100%
B = 70 - 84%
C = 55 - 69%
D = 40 - 54%
F = 0 - 39%

Schedule:

	Topics
Week 1: 1/17	- Course overview - Project 1 is out
Week 2: 1/22 - 1/24	- Introduction to Visualization - Information Visualization vs. Visual Analytics
Week 3: 1/29 - 1/31	- Introduction to Javascript - Introduction to D3.js
Week 4: 2/5 - 2/7	- More introduction to D3.js - Time series visualizations
Week 5: 2/12 - 2/14	- Tables and Charts - Scatterplots and Paralell Coordinates
Week 6: 2/19 - 2/21	- Text visualization - Project 1 is due at 11:59pm Sunday, 2/17
Week 7: 2/26 - 2/28	- Project 1 presentations - Project 2 is out => Team assigment
Week 8: 3/5 - 3/7	- Project 1 review, lessons learned - Arcs diagrams
Week 9: 3/12 - 3/14	- Spring Break
Week 10: 3/19 - 3/21	- Geospatial Visualization - Tree layouts
Week 11: 3/26 - 3/28	- Hierarchical edge bundling - Project 2 code is due at 11:59pm Sunday, 3/24
Week 12: 4/2 - 4/4	- Project 2 presentations - Project 2 report and peer review are due at 11:59pm Sunday, 3/31
Week 13: 4/9 - 4/11	- Project 3 is out => Team formation - Network visualization
Week 14: 4/16 - 4/18	- Force-directed layouts in D3 - Adjacency matrices
Week 15: 4/23 - 4/25	- Dynamic network visualization - Visualizing Uncertainty
Week 16: 4/30 - 5/2	- Project 3 code is due at 11:59pm Tuesday, 4/30 - Project 3 report and peer review are due at 11:59pm Sunday, 5/5
Week 17: 5/7	- Project 3 presentations

Lecture slides and presentation materials will be provided on the class website.
Topics and/or dates may be changed during the semester at the instructor's discretion because of scheduling issues, developments in the discipline, or other contingencies.

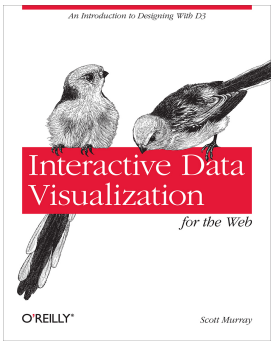
Textbooks:



Visualization Analysis and Design

by Tamara Munzner

CRC Press, 2014
ISBN: 978-1466508910
$75 hardcover



Interactive Data Visualization for the Web

by Scott Murray

O'Reilly, 2013
ISBNL 978-1449339739
available for free online

Absence due to religious observance:

The Texas Tech University Catalog states that a student may be excused from attending classes or other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. A student whose absence is excused for this purpose may not be penalized for that absence and shall be allowed to take an examination or complete an assignment from which the student is excused. (see p.51)

Absence due to officially approved trips:

The Texas Tech University Catalog states that the person responsible for a student missing class due to a trip should notify the instructor of the departure and return schedule in advance of the trip. The student may not be penalized and is responsible for the material missed. (see p.50)

Late Work:

Assignments are due when specified, but will be accepted late (with a 10-20% penalty) until graded work is returned.

Student with Disabilities:

The university is committed to the principle that in no aspect of its programs, shall there be differences in the treatment of persons because of race, creed, national origin, age, sex, or disability and that equal opportunity and access to facilities shall be available to all. If you require special accommodations in order to participate, please contact the instructor during office hours or by e-mail tommy.dang@ttu.edu. Students should present appropriate verification from Student Disability Services. No requirement exists that accommodations be made prior to completion of this approved university process.