

CSCI 444/544: Data Visualization

Instructor: Rob Smith

Office: Social Science 413

Office Hours: TuTh 10-11AM

robert.smith@mso.umt.edu

Class times:

TuTh 11-12:50

Location: SS 362

Overview:

In this course, students will learn the purposes, design, and applications of data visualizations. Students will deeply explore each aspect of the domain in formats to include lecture, discussion, and group/individual exercises.

Students taking this course are encouraged to participate in faculty research projects, if they are not already, as the course's assignments will provide ample opportunity to make visualization contributions to concurrent research projects. Though this is in the best interest of the student, it is not mandatory.

Assignments:

All students will complete 13 assignments for credit, consisting of 6 visualization projects and 7 critiques of others' visualizations:

1. 1 critique on an online visualization.
2. 2 static visualizations / critiques.
3. 2 interactive visualizations / critiques.
4. 2 direct manipulation visualizations / critiques.

For the first visualization assignment, students will find an example visualization online that is not used in the slides and has not been used by any other students. Students will prepare a critique of the visualization and present it in class according to the critique rubric.

For each visualization assignment after the first, students will:

1. Design a visualization according to the assignment rubric.
2. Receive feedback from an assigned critique partner.
3. Give feedback on assigned partner's visualization.
4. Revise your visualization.
5. Present your visualization to the class.
6. Present your critique of your partner's visualization to the class according to the critique rubric

The primary focus of this course is giving students ample opportunity to learn the art of data visualization by practice. To ensure key nomenclature and concepts are learned, short non-cumulative quizzes will be given periodically throughout the semester. One exam will be administered prior to the end of the semester that consists of questions pulled from the quizzes.

Grad increment:

In addition to the above described coursework, graduate students will design two extra visualizations/critiques: one project related to their research (individual) and one group (all grad students) project assigned by the instructor.

Grades:

Undergrads:

Critiques (7): 25%

Visualizations (6): 60%

Quizzes (>3): 5%

Exam (1): 10%

Grads:

Critiques (7): 20%

Undergrad Visualizations (6): 50%

Grad group visualization (1): 15%

Grad individual visualization (1): 10%

Grad individual critique (1): 0%

Quizzes (>3): 0%

Exam (1): 5%

Attendance:

My intent is that every class will provide enough value to entice you to attend. You will also be completing assignments for a grade in class. Your absence will mean receiving a zero for any assignment performed during that class period. There is no make up policy. Students in extraordinary situations (e.g. death of an immediate family member or medical emergency) may approach me on a case-by-case basis.

Text Book:

There is no required textbook for this course. There are ample free resources available online and many good books that can serve as optional references for the interested student. Information for external references will be provided in the course slides.

Cheating:

Any form of collusion or dishonesty will be prosecuted to the full extent allowable by University standards and may result in an automatic failing grade in the course.

Incompletes and Late Drops:

The university empowers instructors with discretion to approve incompletes or late drops (dropping the course after 45 days). I will not approve either as a means of avoiding a low grade or as a means of protesting course policies. Valid reasons include family emergencies, work complications, or registration issues, but I reserve the right of approval on a case-by-case basis.

Disabilities:

This course is accessible to and usable by otherwise qualified students with disabilities. To request reasonable program modifications, please consult with the instructor. Disability Services for Students will assist the instructor and student in the modification process. For more information, visit the Disability Services website at <http://life.umt.edu/dss/>.