CS 725/825, Spring 2022 Syllabus

Tu 4:20-7pm, MGB 0127 and online via Zoom

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Course Overview

Catalog Description: This course covers the theory and application of information visualization and of visual analytics, the science of combining interactive visual interfaces and information visualization techniques with automatic algorithms to support analytical reasoning through human-computer interaction. Research on visual perception, cognition, interactive visual interfaces, and visual analytics will be covered. Practical techniques for the display of complex multivariate data will be addressed. Course projects will require the development of interactive web-based interfaces to analyze and visualize real-world datasets.

Main Activities: During the semester, students will develop interactive visualizations using D3.js, read academic papers from IEEE VIS and other top visualization conferences, give class presentations on current topics in information visualization and visual analytics, and gain hands-on experience in visualizing real-world datasets. Time will be reserved in the semester to cover special topics selected by the class.

Prerequisite: CS 625 (Data Visualization)

Instructor Contact and Office Hours

Dr. Michele Weigle: mweigle at cs.odu.edu, https://www.cs.odu.edu/~mweigle/

My office hours will be Tues 2-3:30pm (in-person ECSB 3327 or Zoom), Wed 5-6:30pm (Zoom only), or by appointment. See Blackboard for the link to the Zoom office hours meeting room. For Zoom office hours, students will be placed into the waiting room if I am already meeting with another student. If you cannot attend during regular office hours, please contact me to set up an alternate appointment time.

Meeting Times and Course Delivery Method

This course will be delivered in a hybrid method, with one face-to-face section in a traditional classroom and several online sections available:

CS 725 (MS) sections: * CRN 32741 - in-person (Tu 4:20-7pm, MGB 0127) * CRN 32751 - WC2 (in Hampton Roads or in Virginia) * CRN 32754 - WC7 (in the US, but outside of Virginia)

CS 825 (PhD) sections: * CRN 32747 - in-person (Tu 4:20-7pm, MGB 0127) * CRN 32757 - WC2 (in Hampton Roads or in Virginia) * CRN 32761 - WC7 (in the US, but outside of Virginia)

All course materials, including the link to the Zoom class session, will be made available in Blackboard. The audio of in-person class meetings and all materials projected in class will be live streamed via Zoom and recorded for later viewing. *Online students are strongly encouraged to actively participate in the Zoom session during the regular class meeting time.* Online students must meet the same deadlines as face-to-face students. All deadlines are based on the local timezone in Norfolk, VA.

Spring 2022 COVID-19 Policies

As announced on January 3, all students, faculty, and staff who participate in on-campus activites must be fully vaccinated and boosted or have received an exemption (and be tested weekly). In addition, face masks are required for all individuals in indoor public spaces, including classrooms.

Students experiencing symptoms of COVID-19 should seek testing through the University's Student Health Center or their local health care provider and notify the University's COVID Cares Team at covidcares@odu.edu.

Students who are uncomfortable with participating in the classroom are encouraged to switch to the WC2 section to enable other students who might prefer the face-to-face environment to have a seat.

You are strongly encouraged to stay home if you are not feeling well.

The provision of face-to-face lectures and live Zoom streams are contingent on the setup of the classroom and supporting equipment, and the general level of COVID-19 activity in the Hampton Roads area. If I become uncomfortable with the safety precautions being taken, or feel that the classroom environment and equipment detract from the quality of the course, then I reserve the right to change to a pure web conferencing delivery mode. *Additional notes related to ODU's Spring 2022 semester and COVID-19 may be added to this syllabus nearer to the beginning of the semester.*

Textbook and Materials

There is no required textbook, but Tamara Munzner's *Visualization Analysis and Design* (textbook from CS 625) is highly recommended if you don't already have it. * online version accesssible for free via ODU * includes author's slides from half-day and full-day tutorials, PDF versions of all figures * textbook errata * author's keynote at d3.unconf (55 min), overview of material from book

Other materials will include papers published via IEEE Xplore digital library (link here is via ODU libraries).

You will be required to write clearly about your visualization designs and design process. For writing help, I always suggest two inexpensive books:

- Writing for Computer Science by Justin Zobel
- The Elements of Style by Strunk and White

In addition, see the online writing resources collected on the ODU-CS New Student Resources page.

Grading

This will be a project and presentation based course, so no exams will be given. Grades will be based largely on visualization implementations and class presentations. More information will be provided before the semester begins.

Grading Scale

The grading scale is as follows:

percentage	letter
100-94	A |
93-90	A-
89-88	B+
87-84	B
83-80	B-
79-78	C+
77-74	C
73-70	C-
69-0	F

There is no separate grading scale for PhD students, but PhD students will typically be held to a higher standard.

Late Assignments

Any assignment submitted after its deadline is considered late. Late assignments lose 1 point for every 24 hours they are late. Submissions over 72 hours late are not accepted. This time limit includes weekends -- they are counted just like weekdays. I reserve the right to specify that late submissions will not be accepted for particular assignments. * 0-24 hours late: -1 point * 25-48 hours late: -2 points * 49-72 hours late: -3 points * over 72 hours late: not accepted

Summary Schedule

Note: This is a tentative schedule and may change during the semester. The complete schedule with assignments and due dates is posted on Blackboard.

ODU Spring 2022 academic schedule

Week	Class Date	Topic
1	Jan 11	Course Intro, Data Vis Overview
2	Jan 18	Visual Analytics Principles, Vega-Lite Intro
3	Jan 25	D3 Data Principles, D3 Vis
4	Feb 1	Handling Complexity in Data, IEEE VIS Conferences, Giving Presentations
5	Feb 8	Interactivity in D3
6	Feb 15	Dashboard Design and Graph Visualization, Implementing Dashboards in Vega-Lite, D3
7	Feb 22	Project Discussion
8	Mar 1	Student Presentations
	Mar 8	**NO CLASS - Spring Break**
9	Mar 15	Student Presentations
10	Mar 22	Student Presentations
11	Mar 29	TBA
12	Apr 5	Student Project Demos
13	Apr 12	Student Project Demos

Week	Class Date	Topic
14	Apr 19	Student Project Demos

Course Policies

Email/Blackboard

Each student must check the class Blackboard site and email daily. You should use our class Blackboard Discussion Board to ask and answer general course-related questions. I will use Blackboard Announcements to notify you about important updates (assignment deadline changes, office hours cancellations, etc.).

Attendance

In-person students: I expect you to arrive on time for class. Your grade will be affected if you are consistently tardy. Students may leave after 15 minutes if the instructor or a guest lecturer does not arrive in that time.

Online students: It is essential that you regularly stay involved in class activities. This includes attending synchronous class meetings when possible, checking the class Blackboard for announcements, and submitting assignments on time. Online students who cannot attend synchronously are expected to have watched the posted videos of the week's in-class meetings before the next week's first meeting. However, students are strongly encouraged to watch the videos on the same day they are posted.

If you have to miss a class, you are responsible checking the course Blackboard site to find any assignments or notes you may have missed.

If there are days on which the scheduled class meeting time is cancelled due to weather, there may still be assignments made and due. A post will be made to Blackboard Announcements whenever the class meeting is cancelled.

Classroom Conduct

Please be respectful of your classmates and instructor by minimizing distractions during class. Cell phones must be turned to silent during class.

Make-up Work

Make-ups for graded activities are possible only with a valid written medical or university excuse. It is the student's responsibility to give the instructor the written excuse and to arrange for any makeup work to be done.

Disability Services

In compliance with PL94-142 and more recent federal legislation affirming the rights of disabled individuals, provisions will be made for students with special needs on an individual basis. The student must have been identified as special needs by the university and an appropriate letter must be provided to the course instructor. Provision will be made based upon written guidelines from the University's Office of Educational Accessibility. All students are expected to fulfill all course requirements.

Students are encouraged to self-disclose disabilities that have been verified by the Office of Educational Accessibility by providing Accommodation Letters to their instructors early in the semester in order to start receiving accommodations. Accommodations will not be made until the Accommodation Letters are provided to instructors each semester.

Seeking Help

The course Blackboard site should be your first reference for questions about the class. If you have questions about course requirements or materials, post questions using the class Blackboard Discussion Board. For extra help, attend office hours.

Academic Integrity

Old Dominion University is committed to students' personal and academic success. In order to achieve this vision, students, faculty, and staff work together to create an environment that provides the best opportunity for academic inquiry and learning. All students must be honest and forthright in their academic studies. Your work in this course and classroom behavior must align with the expectations outlined in the Code of Student Conduct, which can be found at https://www.odu.edu/oscai.

The following behaviors along with classroom disruptions violate this policy, corrupt the educational process, and will not be tolerated.

- Cheating: Using unauthorized assistance, materials, study aids, or other information in any academic exercise.
- Plagiarism: Using someone else's language, ideas, or other original material without acknowledging its source in any academic exercise.
- Fabrication: Inventing, altering or falsifying any data, citation or information in any academic exercise.
- Facilitation: Helping another student commit, or attempt to commit, any Academic Integrity violation, or failure to report suspected Academic Integrity violations to a faculty member.

In particular, submitting anything that is not your own work without proper attribution (giving credit to the original author) is plagiarism and is considered to be an academic integrity violation. It is not acceptable to copy source code or written work from any other source (including other students, online resources), unless explicitly allowed in the assignment statement. In cases where using resources such as the Internet is allowed, proper attribution must be given.

Any evidence of an academic integrity violation (cheating) will result in a 0 grade for the assignment/exam, and the incident will be submitted to the Department of Computer Science for further review. Note that academic integrity violations can result in a permanent notation being placed on the student's transcript or even expulsion from the University. Evidence of cheating may include a student being unable to satisfactorily answer questions asked by the instructor about a submitted solution. Cheating includes not only receiving unauthorized assistance, but also giving unauthorized assistance. For class files kept in Unix space, students are expected to use Unix file permission protections (chmod) to keep other students from accessing the files. Failure to adequately protect files may result in a student being held responsible for giving unauthorized assistance, even if not directly aware of it.

Students may still provide legitimate assistance to one another. You are encouraged to form study groups to discuss course topics. Students should avoid discussions of solutions to ongoing assignments and should not, under any circumstances, show or share code solutions for an ongoing assignment.

All students are responsible for knowing the rules. If you are unclear about whether a certain activity is allowed or not, please contact the instructor.

More information on academic integrity is available on the ODU-CS academic integrity page.

ODU Cares

Student Outreach & Support (SOS) is a service within the Dean of Students' office. SOS provides support to students who experience administrative, academic, or personal roadblocks. SOS works collaboratively with ODU's Care Team, and is here to help students achieve their personal and academic goals. To access these resources, email oducares@odu.edu.

Statement from ODU Counseling Services

ODU's Office of Counseling Services (OCS, 1526 Webb University Center) is a university agency with competent, diverse, and multidisciplinary professional staff. We are committed to supporting the emotional well-being, social development, and academic progress of all students at Old Dominion University.

College life can be a wonderful time of self-discovery, but for many, it is also a time when the awareness of mental health conditions increases. OCS services are available to assist with addressing mental health concerns that a student may be experiencing. You can learn more about the broad range of confidential mental health services available on campus via our website at http://www.odu.edu/counselingservices. All services are free to ODU students.